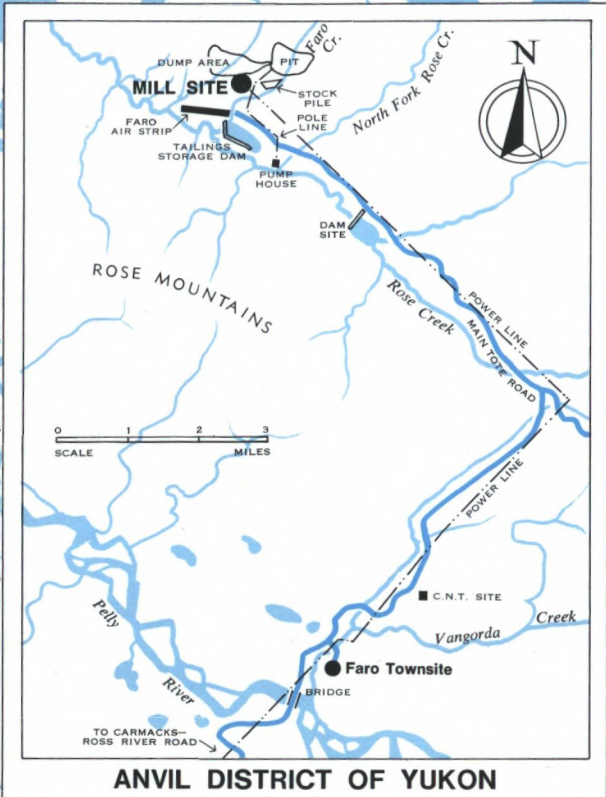
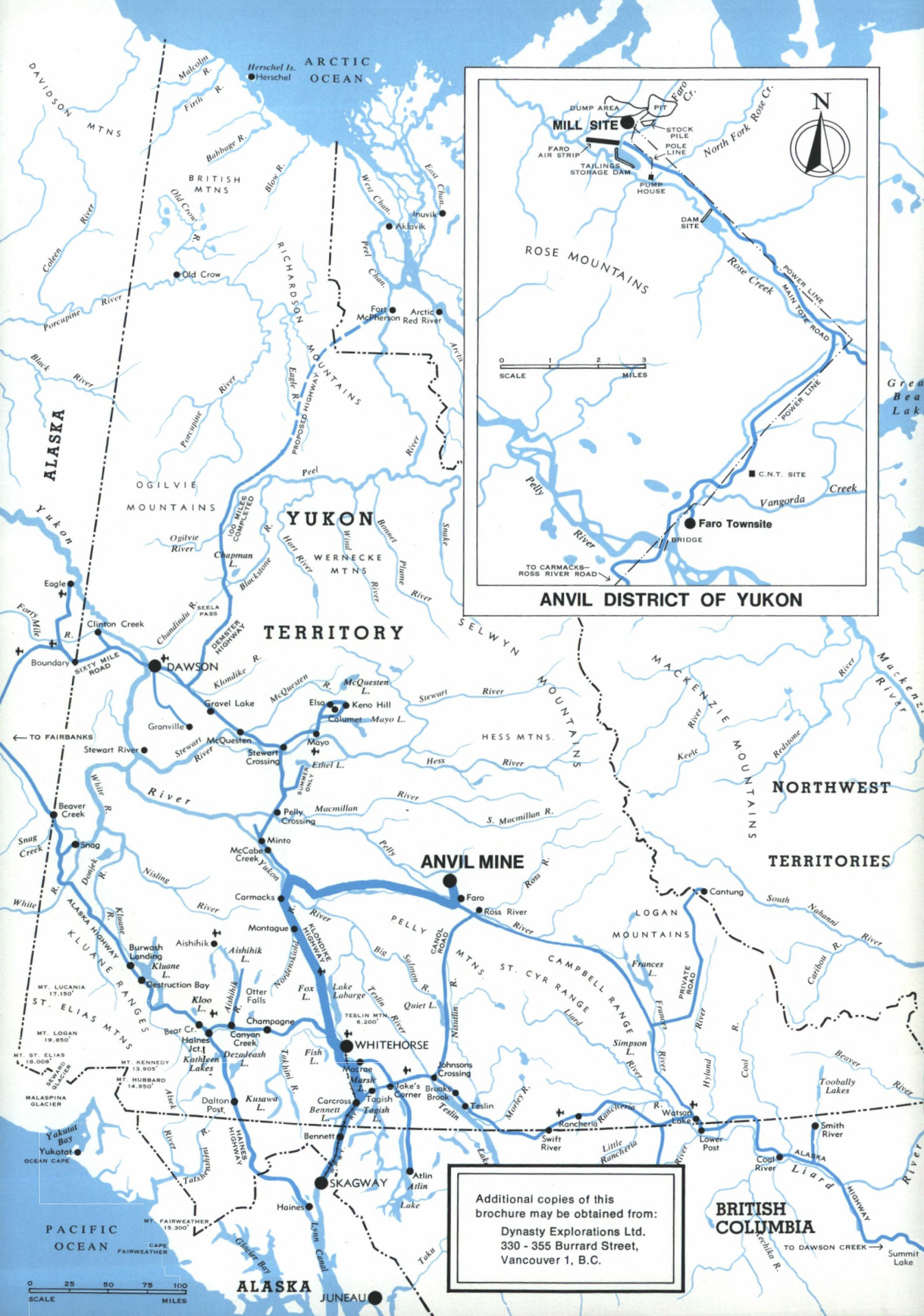


BIRTH OF A GIANT



THE ANVIL MINE

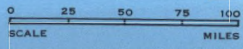
January 1970



ANVIL DISTRICT OF YUKON

Additional copies of this brochure may be obtained from:
Dynasty Explorations Ltd.
 330 - 355 Burrard Street,
 Vancouver 1, B.C.

BRITISH COLUMBIA



ALASKA JUNEAU

Summit Lake

**DISCOVERY
AND DEVELOPMENT OF THE
ANVIL MINE
YUKON**

60% CYPRUS MINES CORPORATION
40% DYNASTY EXPLORATIONS LIMITED

The Faro orebody was forged deep in the earth's crust in the antiquity of geologic time, when floods of sulphur, iron, lead, zinc, silver and other metals invaded the rocks. Over unknown millions of years streams and then vast glaciers eroded down to the ore and left it concealed by gravel and clay, then cloaked by subarctic vegetation.

Finding it took two years of intensive scientific exploration costing \$500,000, and developing it took another four years at a cost of \$65 million, each phase involving many resources and people with years of experience.

*H. T. Mudd
Cyprus Chairman*



*Kenneth Lieber
Anvil President*



*A. E. Aho
Dynasty President*



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*Dynasty directors, studying feasibility reports, left to right:
R. E. Gordon Davis, R. V. Markham, John Bruk, Aaro E. Aho.*



SYNOPSIS

The Anvil Mine, a major lead-zinc producer that is opening up the sub-arctic wilderness of central Yukon, is a product of intensive scientific mineral exploration by Dynasty Explorations of Vancouver and of dynamic and expert development by Cyprus Mines Corporation of Los Angeles.

Dynasty Explorations, organized and headed by geological engineer Dr. Aaro E. Aho, discovered Anvil's Faro orebody in 1965 after expenditure of about \$500,000 in detailed geologic, geochemical, geophysical and prospecting work, extensive airborne geophysical surveys, and a major rotary drill program. This orebody is a monument to such scientific mineral exploration, for it could never have been found by conventional prospecting alone. There were hints of mineralization on the surface, but no outcrop or float of the ore itself; its discovery was dependent mainly on teamwork, geochemistry and geophysics.

Cyprus Mines Corporation, headed by Henry T. Mudd, provided joint venture financing in the wildcat drilling stage of exploration when others might have been too timid or less imaginative. Under the dynamic leadership of Anvil's president Kenneth Lieber, the complexities of continued exploration, development, feasibility studies, sales contract negotiations, transportation, power and townsite facilities, financing, and finally construction, were planned and carried out successfully.

Now, four years after discovery, this giant metal producer is in production after a direct project expenditure of about \$65 million. In total, over \$100 million has been spent by Anvil, the Canadian government, White Pass & Yukon Corporation, and others.

Gross value of the Anvil mine is several times that of all the golden Klondike, and it is unfolding a new era of development and economic self-sufficiency for Yukon. Over a billion dollars in lead, zinc, silver and other metals will flow from the earth's crust here.

EXPLORATION

Dynasty Explorations

was first formed as a small syndicate in 1963 then expanded into a company in 1964. Large areas of the Anvil district were staked concurrent with an ambitious district-wide program of saturation exploration consisting of geophysical, geochemical and geologic surveys and prospecting. The Dynasty directors were also the most active participants; the project was conceived and organized by Aho who, together with geological engineer Gordon Davis and prospector Alan Kulan, was directly responsible for carrying out the project. Ronald Markham arranged for the financing, and Vancouver lawyer John Bruk took an active part in corporate matters from the outset. In the fall of 1964, airborne magnetic surveys flown over a 35 by 10 mile section of the district defined numerous anomalies which were staked, and preliminary diamond drilling was done on a sulphide zone at Swim Lakes bringing total cost of the 1964 program to about \$200,000.

In February 1965, a large program of ground followup and 30,000 feet of rotary drilling was started to test all significant anomaly targets at an estimated cost of \$50,000 per month. Financing for such a speculative exploration venture of this magnitude was difficult to obtain, but on March 31, a joint venture agreement was signed with Cyprus Mines Corporation whereby they would finance the project under certain conditions and could earn a 60% interest.

By June several targets in the southeast part of the district had been drilled without success and logistics became critical since the next main target areas were at distant corners of this large district. With 19,000 feet drilled, \$250,000 spent, budget over-expanded, and further Cyprus commitment not due until October 31, it was necessary to move directly 28 miles to the Faro target which was one of the last main chances for discovery of an orebody.

After a midnight trek of 12 miles from Vangorda Creek where lead-zinc mineralization was first found by Kulan in the fifties, Aho arrived on the Faro property at 6 a.m.

June 5, 1965, ahead of a Cat and trailer, and selected camp on a small bench at about 4,000 feet elevation overlooking Faro Creek without knowing that he had camped on top of the undiscovered Faro No. 1 orebody. Intensive work during the next few weeks showed only traces of surface mineralization, a rusty swamp, high lead, zinc and copper geochemical results in soils over a sizeable area, separate associated magnetic and electromagnetic anomalies, and later a gravity anomaly over No. 1 zone.



6 a.m. June 5, 1965. Aho unknowingly camps on top of Faro No. 1 orebody.

DISCOVERY

Rotary drilling of the first hole on an electromagnetic and geochemical anomaly yielded sulphides in Faro No. 2 zone. The second hole, drilled on a geochemical anomaly above the rusty swamp, was barren. The third hole, in Faro Creek, went through 265 feet of overburden and altered rock, then continued for 175 feet in massive sulphides near what later proved to be the thickest part of No. 1 orebody, until the bit twisted off and the hole was abandoned. The fourth hole, on a magnetic and geochemical anomaly, intersected about 75 feet of sulphides at shallow depth in what later proved to be the highest grade and first open-pit section of No. 1 orebody. Since it was not possible to evaluate the sulphide intersections from the rotary drill cuttings, diamond drills were brought in later during the summer under contract by Arsenault Diamond Drilling, and by fall preliminary indications of overall grade and tonnage were beginning to shape up.

It was a very busy season. Don Tully of Cyprus ran the diamond drilling, Davis ran the rotary, John Brock conducted the geophysics and camp administration, and Aho organized and carried out widespread airborne magnetic-electromagnetic surveys and geological and geochemical reconnaissance of the entire Anvil range with two helicopters. The camp, with an exhilarating air of excitement, was bursting with 117 people, 22 tents, two helicopters, a double cook tent running three shifts, and people sleeping on the floors. Cats, Bombardiers and other vehicles rumbled through at all hours, more drills were being brought in, a rough access road and 3800-foot air strip were built, and mountains of supplies were freighted in while the nights darkened, frosts turned the leaves to flame, and snows dusted the peaks. By late October a total of 2400 claims had been staked.

As preliminary results of exploration became known, a major staking rush developed in November. Although little documented and relatively unpublicized, the Dynasty staking rush, as it became called, was the largest in Yukon since the Klondike. Some 20 companies and many individuals surrounded and interconnected the

widespread Dynasty holdings. During the winter months about 10,000 claims were staked under severe weather conditions by hundreds of stakers using a fleet of helicopters, at a total expense of some half a million dollars. Intense speculative activity followed and over the next three years about two million dollars were spent in technical surveys and drilling of ground staked during the rush.

Bulldozer with ground followup crew arriving at Faro target.



Helicopter-borne magnetic-electromagnetic survey used to detect anomalies.



Rotary drill hole No. 3 intersects 175 feet of massive sulphides in No. 1 orebody.

Drill camp, October, 1965. Much of terrain is underlain by ore. No. 1 drill grid in background.

Inset shows Gordon Davis at first Faro No. 2 discovery hole, 1965.

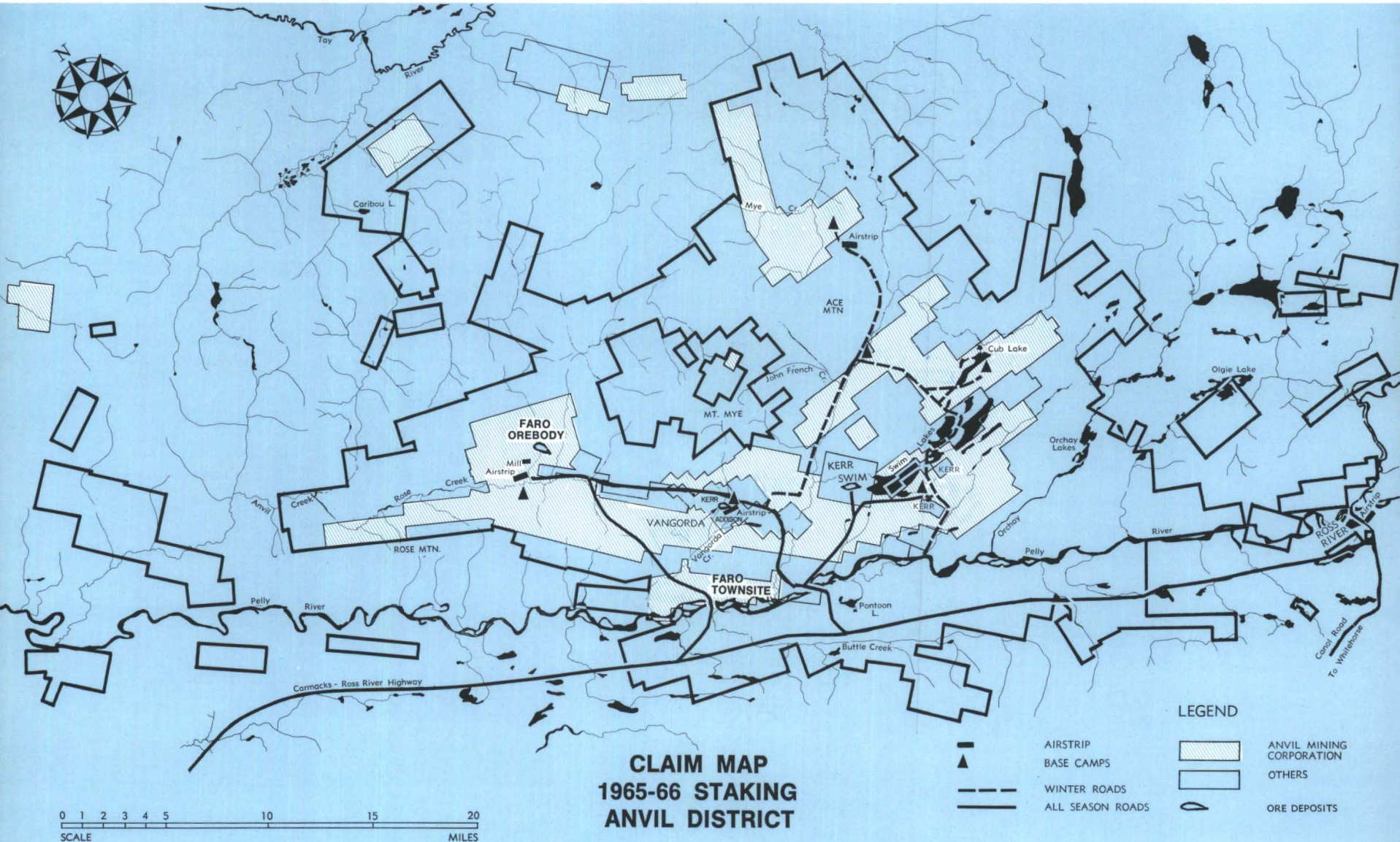


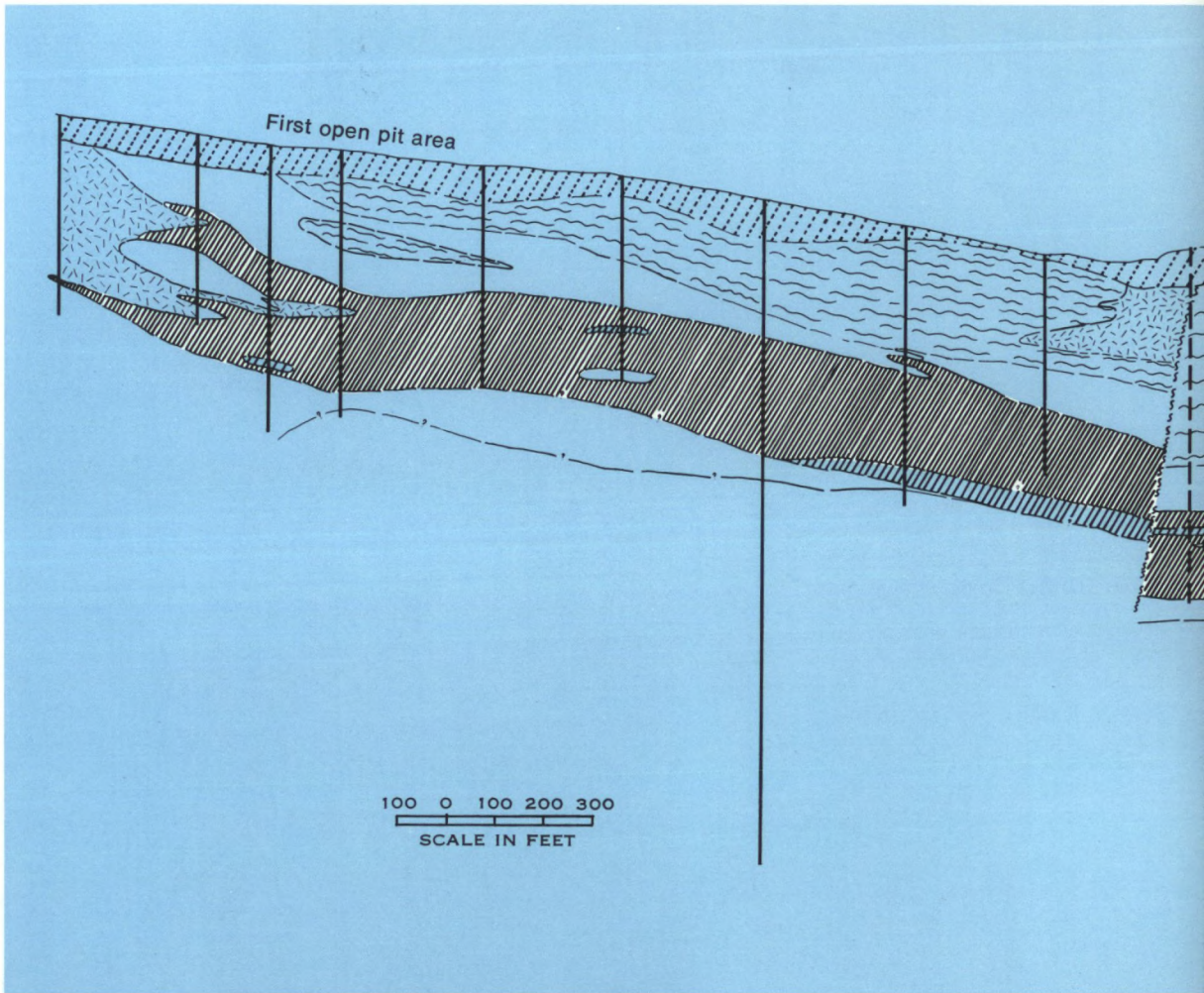
Aho, Davis, Brock and Kulan examine rotary cuttings.



Diamond drilling to prove grade and tonnage.

Largest Yukon staking rush since Klondike.





Longitudinal section of Faro orebody

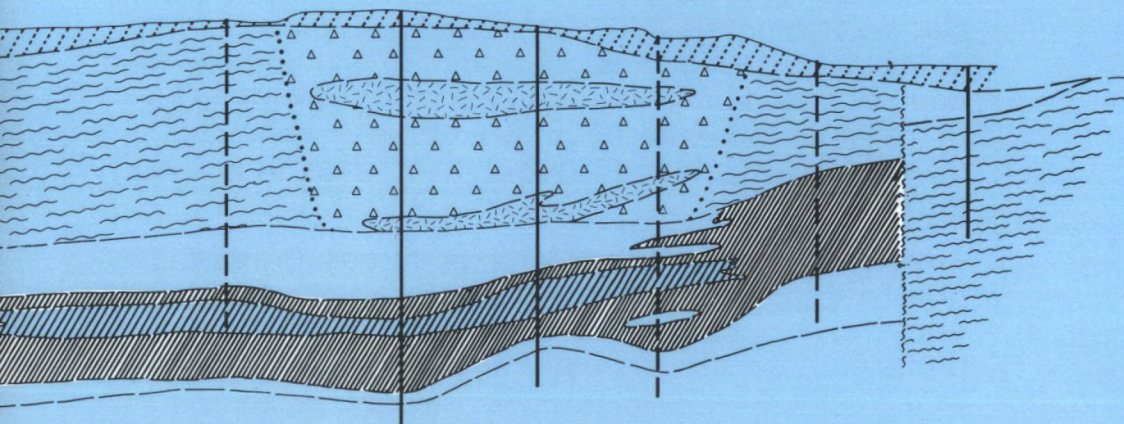


Anvil geologist Murray Hampton and project manager Colin Macdonald examine diamond drill core.









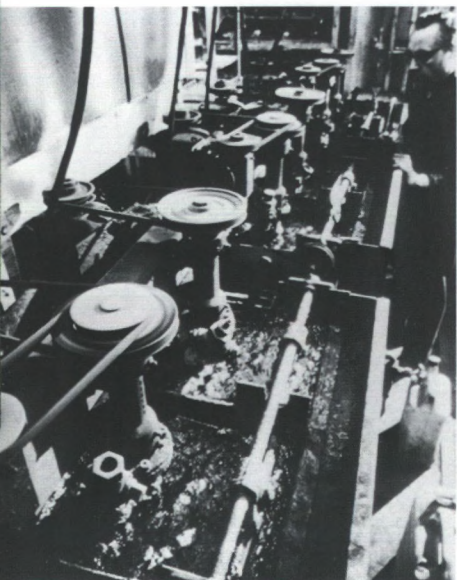
Adit driven into orebody for bulk sample for mill tests.

FARO NO. 1 OREBODY LONGITUDINAL CROSS-SECTION



LEGEND

-  Massive and Banded Sulphides
-  Disseminated Sulphides
-  Quartz Diorite
-  Biotite Chlorite Quartz Phyllite, Locally Graphitic or Tuffaceous
-  "Bleached" Phyllite
-  Breccia



*Flotation tests
of ore, 1967.*



Engineering by Parsons, 1967.

FEASIBILITY

Late in 1965 a new camp was erected down at the airstrip and four diamond drills continued working throughout the winter probing the depths of No. 1 zone while a major study was under way to determine feasibility of production. Anvil Mining Corporation was formed December 1, 1965 to develop the deposit.

Anvil had commissioned Parsons Jurden Corporation of New York to do the feasibility study which included open pit mining, milling, hydroelectric power, transportation, townsite and other ancillary facilities necessary in the area, also possible smelter processes. A galaxy of specialists worked on the project under the direction of Anvil's president Kenneth Lieber and its general manager Robert E. Thurmond. The preliminary feasibility report indicated that an open pit and concentrator along conventional lines would be initially most economic until a more detailed smelter feasibility study could be made.

Ralph M. Parsons Construction Co. of Canada was appointed general contractor for engineering design, construction, and installation of the concentrator and associated service facilities under the supervision of project manager, Colin Macdonald. During the winter of 1966-67 a 2800-foot tunnel was driven into the orebody under contract by Cameron-McMynn Limited to obtain a bulk sample of 315 tons for pilot plant testing by the Galigher Company of Salt Lake City.

By the end of 1967, 42,878 feet of drilling to depths of 300-800 feet had defined about 63 million tons averaging 9.126% combined lead and zinc and 1.19 ounces per ton silver in two main sulphide bodies. No. 1 orebody is a gently-dipping basin-shaped lens, 2,400 feet long, 1,100 feet wide and 50 to 150 feet thick, lying under overburden up to 50 feet deep and rock cover up to 300 feet thick. No. 2 orebody is 1200 feet long and 1000 feet wide, but thinner and under less cover. After erection of a 500-man construction camp, construction started in June and preproduction stripping started in October, 1967.

FINANCING

During the first two

years of Anvil's existence, before most of the construction, months of intensive study and negotiations by many people of the companies and government were necessary to finalize crucial matters, making the development possible. The Government of Canada agreed to provide power facilities, to assist in access roads and a bridge across Pelly River, to provide services and mortgages for a townsite, and to keep the Canol road open and operate a ferry across the river until the Carmacks-Ross River road and Pelly River bridge were built. Sales contracts were signed with Mitsui Mining & Smelting Co. Ltd. and Toho Zinc Co. Ltd. in Japan for the total mine output over an 8-year period consisting of approximately 130,000 short tons of lead concentrate containing about 69% lead and 20 ounces per ton silver, and 240,000 tons of zinc concentrates containing about 54% zinc to be shipped annually; the largest contract ever signed by Japanese for importation of lead and zinc concentrates.

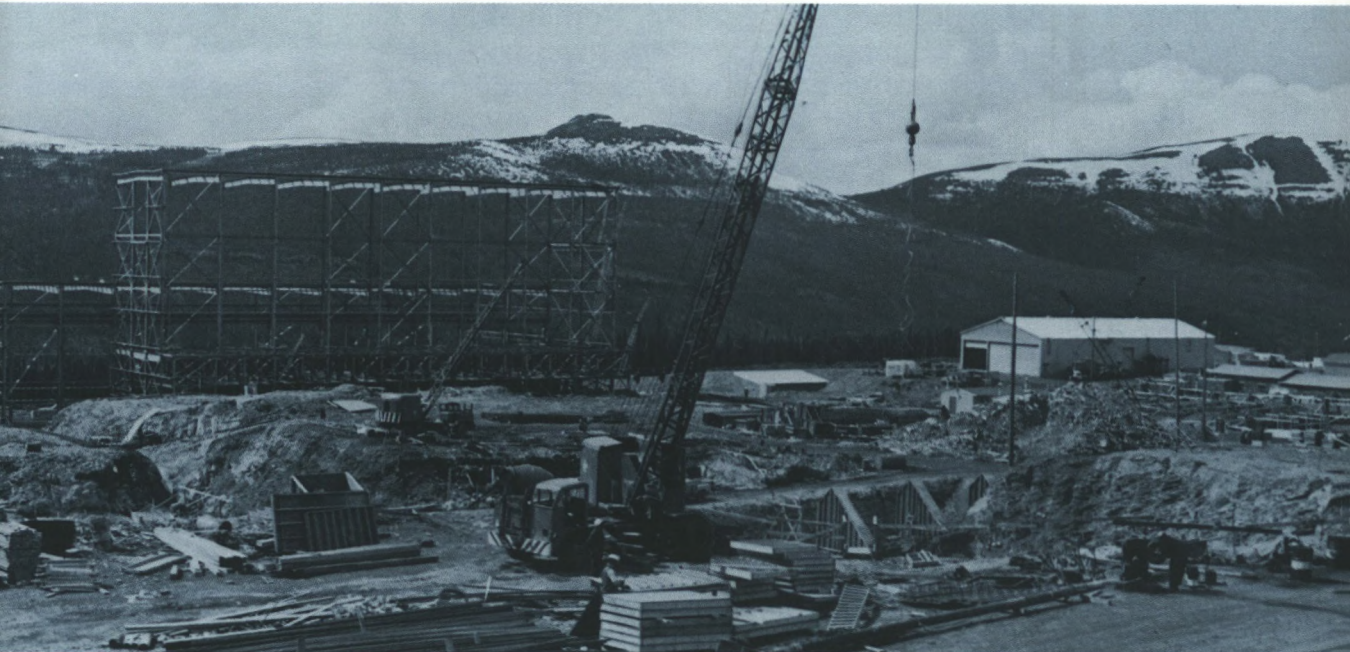
The financing was one of the largest ever entered into by Canadian banks in mining, a total of U.S. \$42 million in loans—one half from the Toronto Dominion Bank with the balance coming from the First National City Bank of New York, Bankers Trust Company, and United California Bank. Cyprus advanced U.S. \$12.4 million and guaranteed loans from the banks and completion of the project for its 60% interest, while Dynasty loaned an additional U.S. \$5.6 million underwritten by Richardson Securities to retain its 40% interest. An agreement was signed for transportation of the concentrates with the White Pass & Yukon Corporation who then proceeded to finance a \$22 million expansion program to build a bulk loading terminal, provide trucking, and improve the railway for Anvil and others.

Finally in 1969 Metalgesellschaft AG. of West Germany loaned an additional \$3.5 million to increase production by 20% and obtain 90,000 tons per year of additional bulk lead-zinc concentrate, raising concentrator capacity from 5500 tons per day to about 7000 tons per day.

CONSTRUCTION

F

rom 1967 to 1969 great construction programs totalling about \$100 million have resulted in removal of 6.5 million cubic yards of waste to make a million tons of ore available for startup, building of a 1270-million-gallon winter water supply dam, completion of the concentrator and ancillary facilities, construction of the new 1200-person town of Faro, construction of a 540-foot bridge and 19-mile access road, completion of the 100-mile Carmacks-Ross River road, increase of hydroelectric generating capacity at Whitehorse and construction of a 230-mile transmission line to deliver 9.3 megawatts, installation of multichannel VHF communications by Canadian National Telecommunications, construction of bulk loading facilities at Skagway, improvement and enlargement of White Pass facilities, and installation of a trucking fleet and containers. Now, in spite of problems such as a disastrous \$2 million forest fire at the townsite, the project has gone into production on schedule and within budget. Direct payroll will be about 250 persons with 50 to 60 more in supporting services at the mine and townsite.



Construction of concentrator, June, 1968.



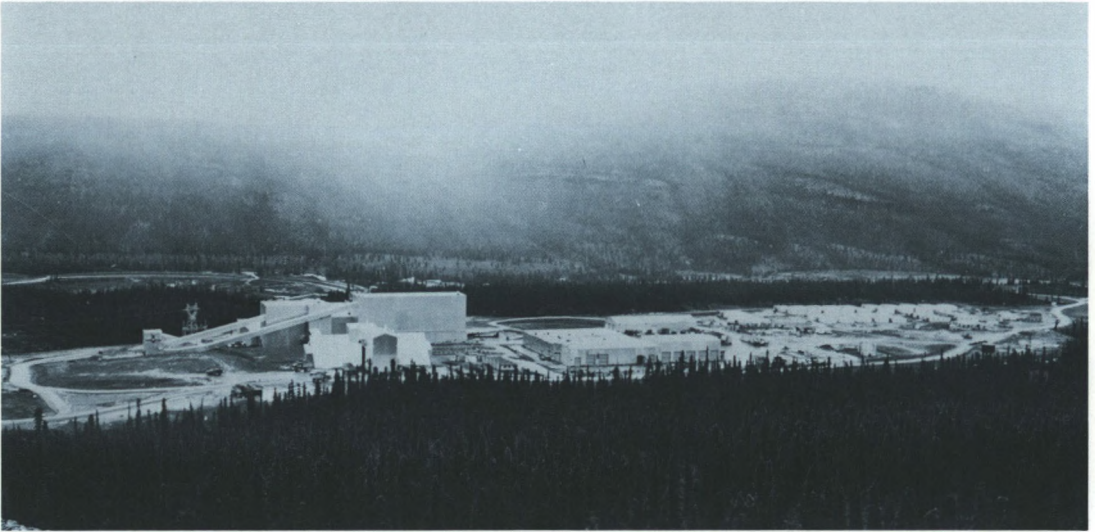
Beginning of open pit, June, 1968.



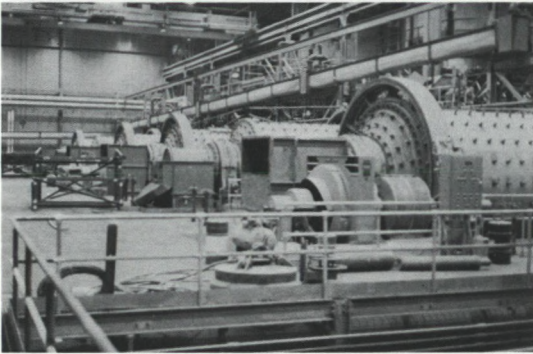
Open pit, September, 1969.



Through the maw of this primary crusher will go 60 million tons of ore.



*Concentrator during first testing,
September, 1969.*



Grinding units.



Flotation cells.



*New town of Faro, Y.T., looking northwest
up Tintina Trench, September, 1969.*

FUTURE

With Anvil in production, much now depends on its competent management and employees. Cyprus will undoubtedly develop yet other major mines in its world wide activities. Dynasty and its related company, Atlas Explorations Limited, are continuing a large scale search for yet other major ore-bodies using specialized exploration techniques.

With successful culmination of the giant Anvil development, the dreams of many people to open up the hinterland of Yukon are being realized. The farsightedness of the Federal and Territorial governments in providing assistance will be of lasting benefit and will handsomely repay the taxpayer. The impact of this development will be felt for many decades as a major contributor to self-sufficient economy of the territory. The Klondike was the golden beginning, Keno Hill and Cassiar were the sustenance over the years, and now Anvil is the key to major future developments.

It is hoped that this achievement will continue to be an inspiration to others to explore this great frontier for still greater resources.

Robert C. Sabini (President, Cyprus), James G. Hansen (Vice-President, Cyprus), Robert E. Thurmond (General Manager, Anvil) and Kenneth Lieber (President, Anvil) in front of Anvil mine-mill office.



ANVIL



A major development
in Yukon