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**FEASIBILITY STUDY OF
THE BLACKDOME MINE
FOR
BLACKDOME EXPLORATION LIMITED
VOLUME 1: EXECUTIVE SUMMARY**

820734

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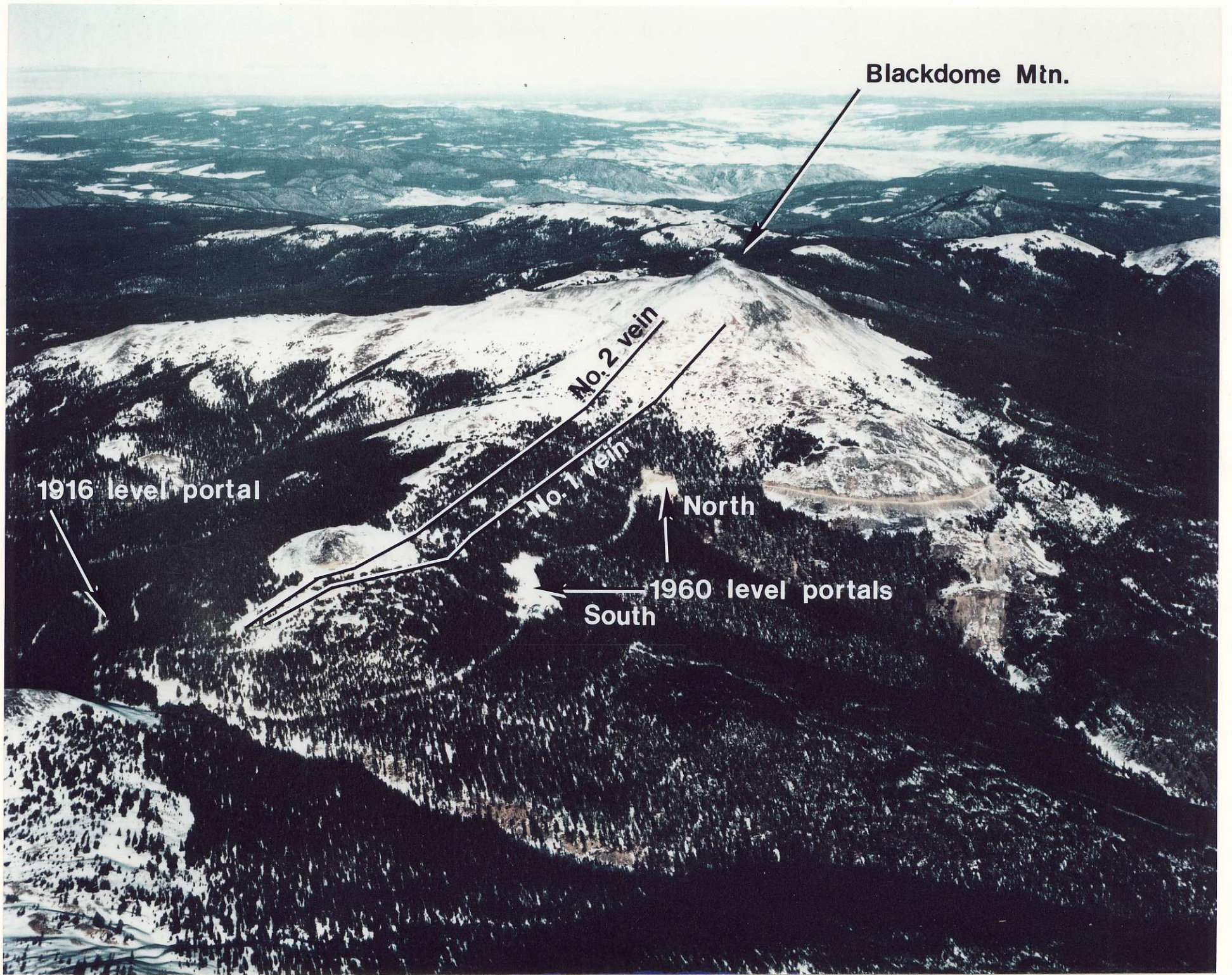


FIGURE 1: Blackdome Mountain looking north.

2. FINANCIAL SUMMARY

2.1 CAPITAL COSTS

Estimated capital costs are:

| | | | |
|---|----|------------------|---------------------------|
| MINING | | | |
| Equipment..... | \$ | 260,000 | |
| Development | | 300,000 | |
| Services..... | | <u>61,000</u> | \$ 621,000 |
| PROCESSING | | | |
| Structures..... | \$ | 536,000 | |
| Equipment..... | | <u>1,409,000</u> | 1,945,000 |
| INFRASTRUCTURE | | | |
| Water and Tailings | \$ | 758,000 | |
| Office, Camp, Shop, and Laboratory..... | | 738,000 | |
| Electrical Power and Compressed Air | | 758,000 | |
| Surface General..... | | <u>270,000</u> | 2,524,000 |
| NON-ALLOCATED COSTS AND INVENTORY | | | |
| Other Preproduction Costs..... | \$ | 1,169,000 | |
| Contingencies..... | | 310,000 | |
| Warehouse Stock | | <u>375,000</u> | 1,854,000 |
| WORKING CAPITAL..... | | | <u>2,250,000</u> |
| | | | <u><u>\$9,194,000</u></u> |

The estimates of capital costs are based on:

- Site visits by senior geological, mining and metallurgical engineers
- Mine design and production scheduling
- Bench-scale tests and mechanical equipment sizing for a proposed modular mill design
- General arrangement mechanical, electrical and structural drawings
- Cost estimates submitted by vendors
- Purchases of used equipment and campsite facilities

2.2 OPERATING COSTS

The operating costs for the property, with a production rate of 185 tonnes per day, is estimated as follows:

| | <u>C \$/annum</u> | <u>C \$/tonne</u> |
|-----------------------------------|-------------------|-------------------|
| MINING | | |
| Stoping | 2,905,000 | 45.52 |
| Exploration and Development | <u>1,307,000</u> | <u>20.48</u> |
| | 4,212,000 | 66.00 |
| MILLING..... | 783,000 | 12.27 |
| ELECTRIC POWER..... | 1,002,000 | 15.70 |
| MAINTENANCE AND LABOUR | 682,000 | 10.68 |
| CAMP..... | 816,000 | 12.78 |
| ADMINISTRATION | <u>1,274,000</u> | <u>19.96</u> |
| | <u>8,769,000</u> | <u>137.39</u> |

The operating cost per ounce of gold is estimated at US \$163. The breakeven price on a salvage basis after mining all proven and probable reserves and including a salvage value is US \$212/oz.

The estimates of operating costs are based on:

- Labour rates and estimates of non-wage benefit costs
- Equipment suppliers literature and specifications
- Senior engineers estimates of consumption rates and costs of consumables

2.3 FINANCIAL ANALYSIS

Criteria

Gold and Silver Price: US \$300 and US \$6/oz, respectively
 Production Rate: 63,825 tonnes/annum
 Ounces Recovered: 40,430 Au and 217,300 Ag/annum
 Capital Costs: C \$9.194 million
 Operating Cost: C \$137/tonne
 Debt : Equity Ratio: 50 : 50
 Exchange Rate: C \$1.00 = US \$0.75

Furthermore, we assume that the presently designated 'possible ore' becomes available for mining in Year 3.

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| | C \$ 000s | | | |
|---|---------------|---------------|---------------|---------------|
| | <u>Year 0</u> | <u>Year 1</u> | <u>Year 2</u> | <u>Year 3</u> |
| Net Revenue from Metal Sales | | 15,729 | 15,729 | 15,729 |
| Direct Costs Including Interest | | <u>9,213</u> | <u>8,769</u> | <u>8,769</u> |
| Operating Cashflow | | <u>6,516</u> | <u>6,960</u> | <u>6,960</u> |
| Less Capital Investment..... | 7,234 | | 120 | |
| Working Capital..... | | 2,250 | | |
| Taxes..... | | | 896 | 2,632 |
| Repay Bank Loan..... | | 4,789 | | |
| Plus Bank Loan..... | 4,789 | | | |
| Equity Investment..... | 2,445 | 658 | | |
| Return Working Capital | | | | 2,250 |
| Salvage Value..... | | | | <u>3,000</u> |
| Net Cashflow | | <u>135</u> | <u>5,944</u> | <u>9,578</u> |
| Accumulated Cashflow | | <u>135</u> | <u>6,079</u> | <u>15,657</u> |
| Assuming US \$350 oz Au Accumulated Cashflow | | <u>2,253</u> | <u>9,444</u> | <u>20,337</u> |

Cashflow estimates provide for repaying debt and retaining equity financing.

3. TECHNICAL SUMMARY

3.1 GEOLOGY

The Blackdome property is underlain by a gently dipping sequence of Tertiary volcanic and volcanoclastic rocks, which have been cut by minor intermediate to basic dykes related to the various volcanic events. The formations dip gently to the southeast and have been transected by steeply dipping northeasterly-trending normal faults with vertical displacement of several tens of metres. The fault zones have provided channelways for epithermal mineralization and contain variable amounts of gouge, clay alteration, silicification, and gold-silver-bearing quartz veining. The mineralized volcanics are overlain by younger basalts, which form the crest of Blackdome Mountain and cover more extensive areas to the south and west.

At least a dozen vein systems have been located on the property across a width of 1,500 m and over a length of 4,500 m. The No. 1 vein appears to be the best mineralized and contains most of the developed ore reserves. Variable grade gold-silver mineralization occurs throughout the No. 1 vein system, over a vertical range of 200 m. Drifting, raising and trench sampling have established six high-grade lenses in the South mine and two in the North mine, with an average true width of approximately 1.5 m.

3.2 ORE RESERVES

Total proven and probable cut and diluted reserves are estimated at 120,000 tonnes, assaying 20.9 g/t Au and 125 g/t Ag. The estimated possible reserves in No. 1 and No. 2 veins are 86,000 tonnes at 29.4 g/t Au and 105 g/t Ag. Additional ore may be found in No. 1 vein, particularly as subsidiary structures and much of No. 2 vein remains to be explored. The presence of gold values in the other vein structures is acknowledged, but can not yet be classified as reserves.

During the course of underground development, two surface ore stockpiles have been created. These contain 5,900 tonnes, with a cut grade of 26.1 g/t Au and 131.7 g/t Ag, and 4,900 tonnes, with a cut grade of 2.4 g/t Au and 14.5 g/t Ag.

3.3 EXPLORATION POTENTIAL

The Blackdome property covers 6,900 acres and constitutes an entire new mineral district, which includes numerous gold- and silver-bearing quartz lodes occurring in steeply inclined northeast-trending fault structures. The host rocks are relatively flat lying Tertiary volcanic flows and clastic sediments. The ore is classic caldera related epithermal mineralization, similar to that in many productive gold and silver mining camps in Mexico and the American southwest (i.e., Tonapah, Nevada; Goldfield, Nevada; Tayoltita, Mexico).

At Blackdome, very rich 'bonanza' orebodies average 10,000 to 15,000 tonnes in size. These occur in a relatively restricted vertical range of about 200 m, but have great potential for repetition in parallel vein systems and along strike in fault structures, which persist for thousands of metres. In addition, geological potential exists for a second horizon of mineralization stacked below the one presently being explored and developed.

The No. 1 vein system has been explored and developed by drilling, drifting and raising for a strike length of 1,850 m and through a vertical range of 260 m. Approximately 3,200 m of drifting on two levels would be required to complete the exploration and development of this part of the No. 1 vein system. Only 1,040 m or about one-third of this work has been completed, leaving a very broad scope for expanding reserves in the immediate vicinity of the mine workings. There are geological indications (outcropping veins and geochemistry) that the No. 1 vein system extends 1,000 m north beneath the Basalt Cap and 600 m south beneath a scree field, giving this structure a potential strike length of 3,450 m.

The No. 2 vein has a known strike length of 1,800 m and has only 133 m of drifting completed. This drifting has indicated a very high-grade ore shoot and the potential for finding further ore must be considered very good.

The mineralized horizon has a southward plunge and strongly suggests that a swarm of apparently barren veins outcropping on the south end of the property in the favourable rhyolite unit could be ore-bearing at depth.

There are ten other gold- and silver-bearing veins, vein systems and soil geochemical anomalies with an aggregate strike length of 11,000 m, which provide targets for surface exploration and diamond drilling. These are listed and shown on two 1 : 2,500 scale geochemical plans. They are as follows:

| | Strike Length (m) |
|--------------------------------|----------------------|
| 1. Dawson Vein..... | 1,000 |
| 2. No. 15 Zone..... | 2,000 |
| 3. Airstrip Vein..... | 620 |
| 4. Giant Vein..... | 1,150 |
| 5. No. 4 Vein..... | 1,450 |
| 6. Red Bird-Eldorado Vein..... | 1,250 |
| 7. Skibers Vein..... | — |
| 8. Skibers East Vein..... | — |
| 9. No. 16 Zone..... | 1,000 |
| 10. No. 17 Zone..... | 2,600 |

3.4 MINING METHODS

The explored sections of ore in the No. 1 and No. 2 veins at Blackdome have an average true width of 1.5 m and a dip of 55° to 65° to the west. The veins are gouge-filled fractures. These conditions indicate that cut-and-fill stoping is the most suitable method of mining to achieve the maximum ore recovery with an acceptable amount of dilution. Some outcropping ore will be recovered using selective open-pit mining methods.

With a production target of 185 tonnes per day, it is proposed to develop six stopes on the 1960 level for cut-and-fill mining. It can be expected that at any one time, two out of

the six stopes will be in the timbering and backfilling phase, while the remaining four stopes are in production. Ore will be transported using diesel equipment, through the 1,920 m level adit to the coarse ore bin.

3.5 METALLURGY

The design of the processing circuit has been based upon bench-scale laboratory tests. Annual gold production in the form of gravity and flotation concentrates is estimated at 40,430 oz from 63,825 tonnes of ore.

The crushing plant and concentrator will be of modular construction and will be located on the southwest side of Blackdome Mountain, upstream from the tailing pond. Ore will be crushed and deslimed in the crushing circuit prior to being ground to 65% -200 mesh and separated into gravity and flotation concentrates. The coarse fraction of the tailings will be recovered and pumped to the mine as hydraulic backfill. The slime fraction will be impounded in a tailing pond. Water will be reclaimed from the tailing pond for process use.

3.6 SERVICES

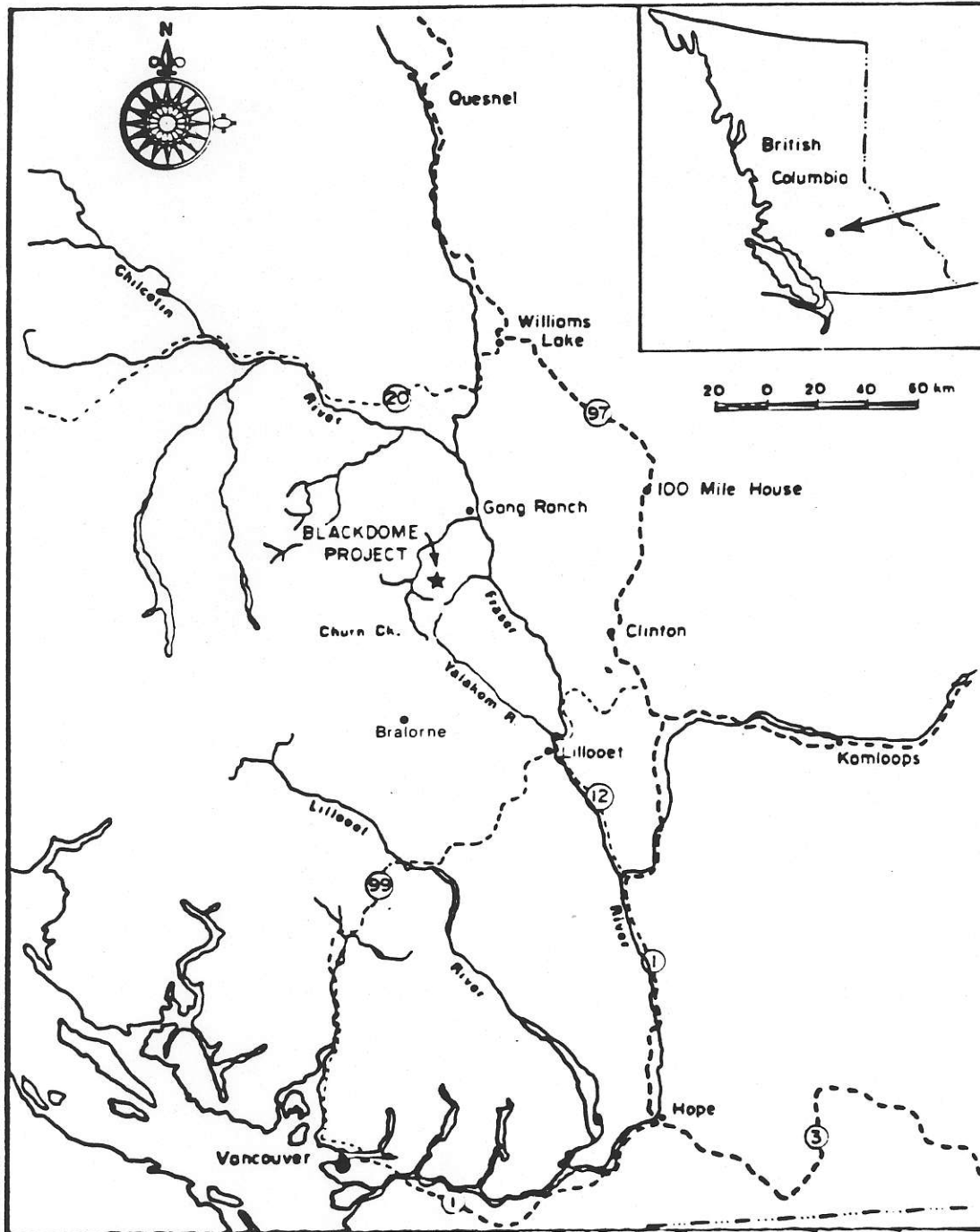
The remote location of the Blackdome project requires a totally self-sufficient infrastructure to include roads, campsite, shops-office complex, supply of fresh water from deep wells, and generation of electrical energy.

The development adit at 1,960 m elevation and the temporary camp and office complex are now located on the southeast side of Blackdome Mountain. The camp complex, concentrator-shops-office complex, and tailing-water systems will be located on the northwest side of this ridge.

The total workforce at the site will number 88 persons. A camp has been designed for 95 persons, each with single accommodation. The operating schedule requires 70 persons to be on-site at any one time.

3.7 SCHEDULE

WGM has assumed that the purchase of good used equipment will commence in early 1985 and that construction will be underway and completed in the last half of the year. A pilot-plant metallurgical program will be undertaken to finalize the sizing requirements of mill process equipment to obtain smelting contracts and to determine the recovery rate of hydraulic fill.



LOCATION OF THE BLACKDOME MINE.

FIGURE 2

ACCUMULATED CASH FLOW AS A FUNCTION OF GOLD PRICE

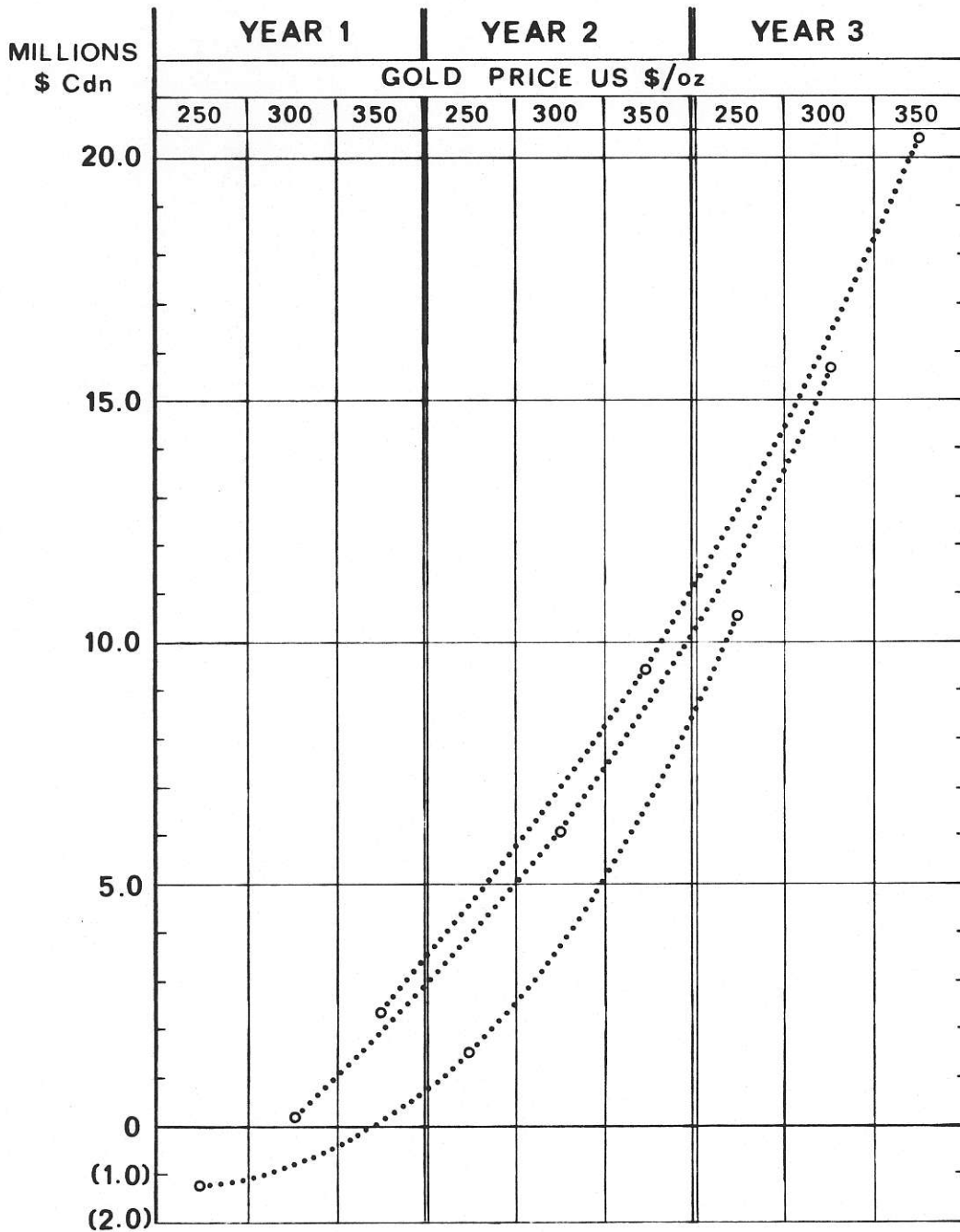
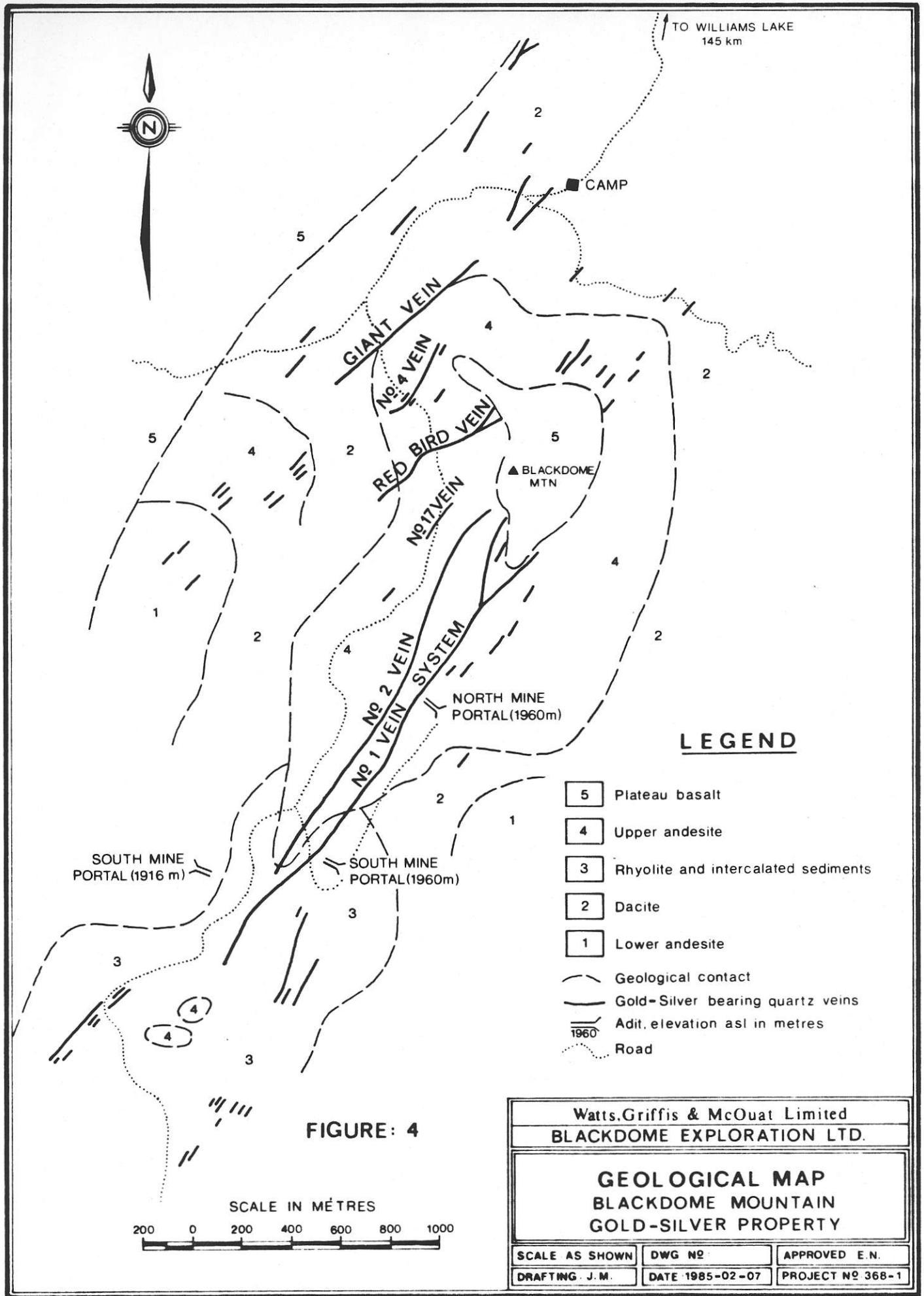


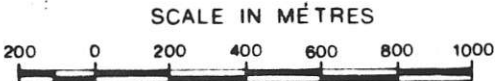
FIGURE : 3



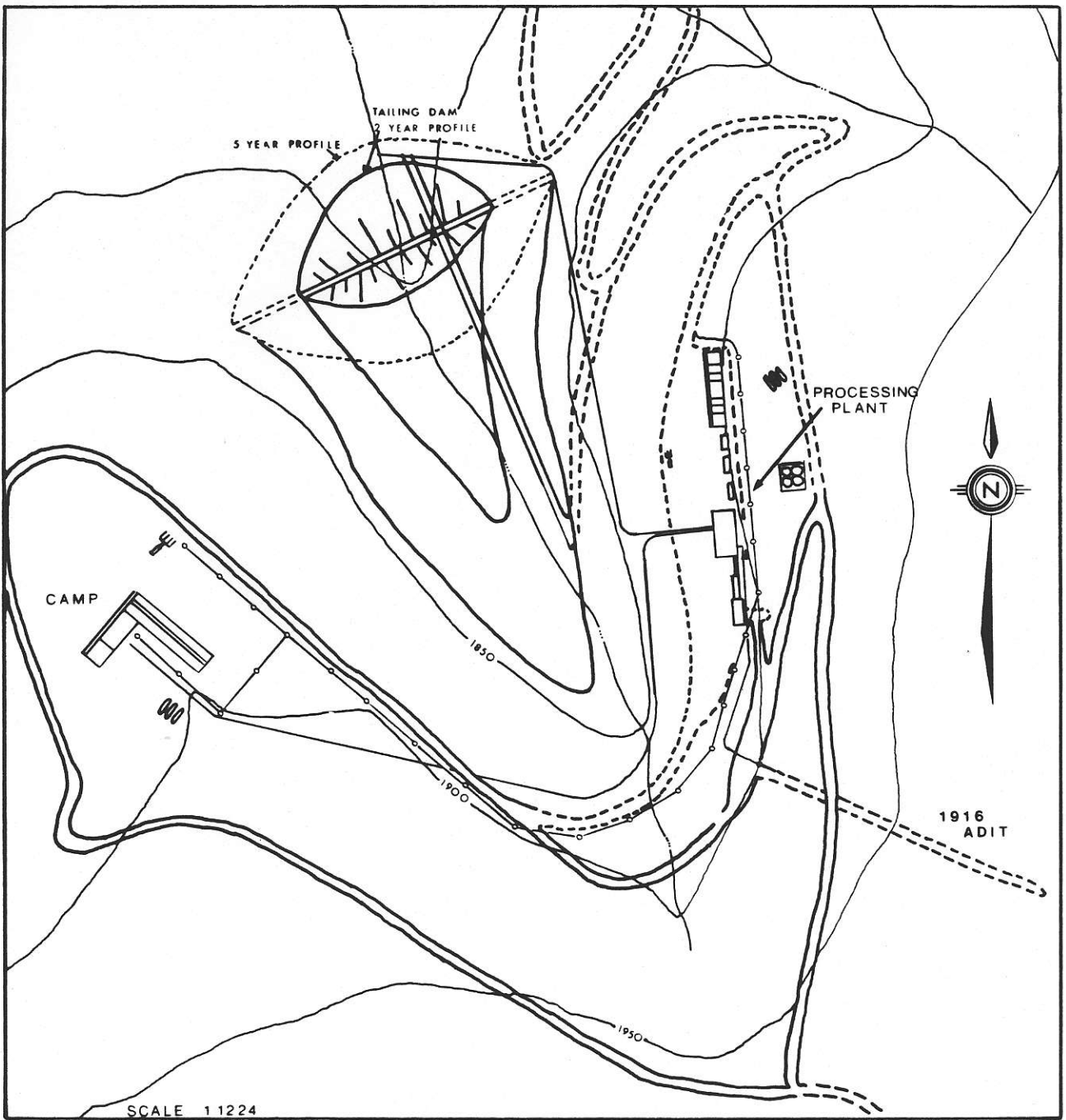
LEGEND

- 5 Plateau basalt
- 4 Upper andesite
- 3 Rhyolite and intercalated sediments
- 2 Dacite
- 1 Lower andesite
- Geological contact
- Gold-Silver bearing quartz veins
- Adit. elevation asl in metres
- 1960 Road

FIGURE: 4



| | | |
|---------------------------------|-----------------|------------------|
| Watts, Griffis & McQuat Limited | | |
| BLACKDOME EXPLORATION LTD. | | |
| GEOLOGICAL MAP | | |
| BLACKDOME MOUNTAIN | | |
| GOLD-SILVER PROPERTY | | |
| SCALE AS SHOWN | DWG NO | APPROVED E.N. |
| DRAFTING J.M. | DATE 1985-02-07 | PROJECT NO 368-1 |



BLACKDOME MINE SURFACE PLAN

FIGURE : 5

