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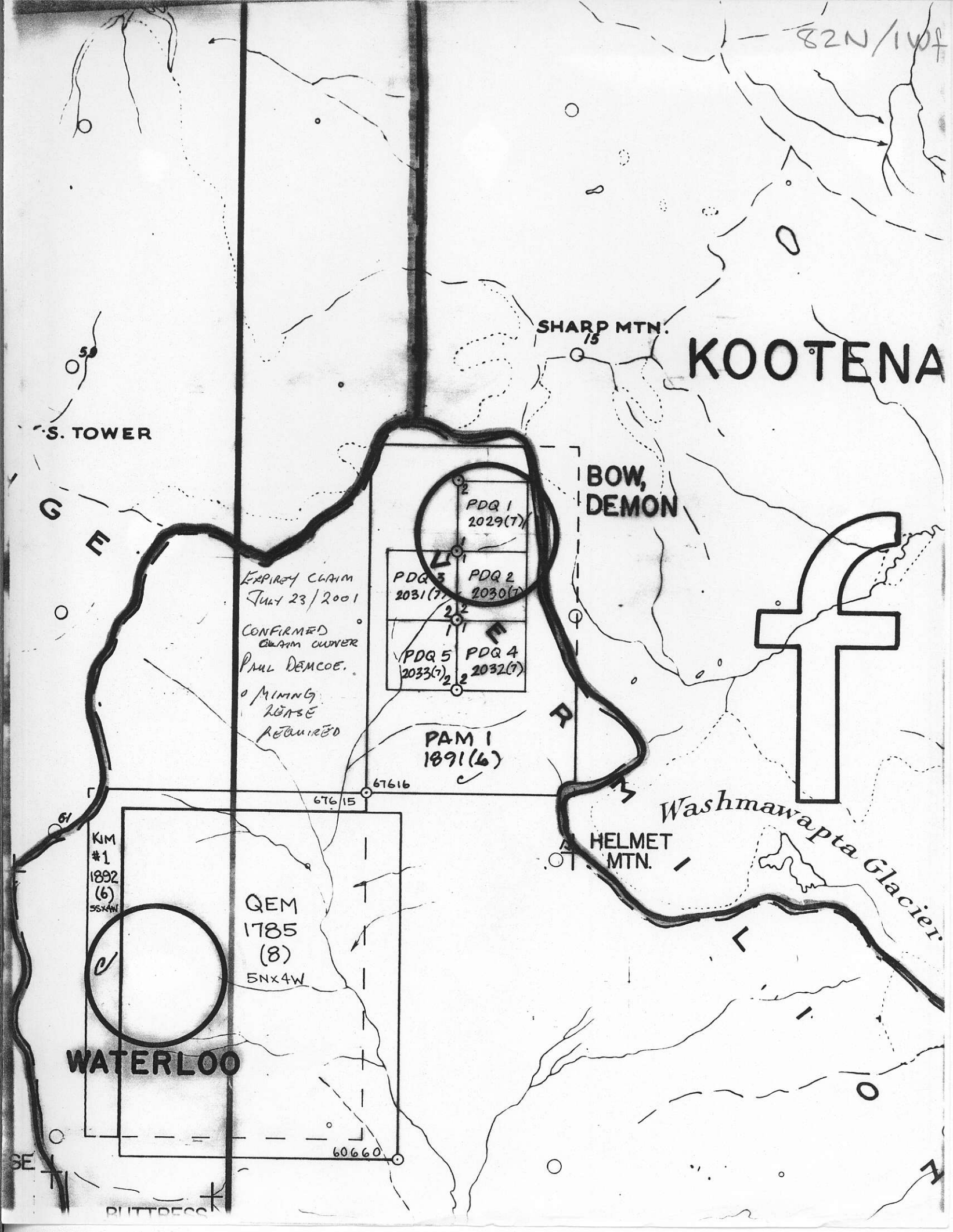
PROSPECTUS

MOOSE CREEK MAGNETITE

St. Paul Minerals Ltd.


82N/1W
SHARP MTN.
KOOTENA
S. TOWER
BOW,
DEMON
PDQ 1
2029(7)
PDQ 3
2031(7)
PDQ 2
2030(7)
PDQ 5
2033(7)
PDQ 4
2032(7)
EXPIRY CLAIM
JULY 23/2001
CONFIRMED
CLAIM OWNER
PAUL DEMCOE.
MINING
LEASE
REQUIRED
PAM 1
1891(6)
67616
676/15
KIM
#1
1892
(6)
5SX4W
QEM
1785
(8)
5NX4W
HELMET
MTN.
Washmawapta Glacier
WATERLOO
60660

MOOSE CREEK MAGNETITE PROJECT

St. Paul Minerals Ltd.

February 12, 1991

MINE DEVELOPMENT REVIEW PROCESS
PROJECT FACT SHEET

CORPORATE DATA:

Project Name	Moose Creek Magnetite
Company Names/Addresses	St. Paul Minerals Limited 8515 - 142 Street Edmonton, Alberta T2R 0M2
Contact/Title	P. Demcoe, President

PROJECT DETAILS:

Location	Moose Creek, southeast of Golden, B.C. (NTS 82N/1: 51 Degrees 11' 30" North, 116 Degrees 21' West)
Estimated Capital Cost	$ 2,000,000.00
Minerals	Initial mineral magnetite
Mining System	Open pit in unconsolidated material (talus)
Estimated Production	120,000 tonnes concentrate, producing 60,000 tonnes of magnetite annually
Processing Plant	Mine: Wet screening and magnetic concentration Mill: 2 stage ball mill grinding with magnetic separation and drying
Mineral Reserves/Resources	(tonnes of magnetite)
Proved Reserves	205,000 tonnes
Indicated Reserves	362,000 tonnes
Resources	1,900,000 tonnes
Average Grade of Ore	5.5%
Cut Off Grade	2.5%
Potential for Additional Reserves	Very favourable, especially in the intrusive body

Access/Transportation	
Road	TransCanada Highway and forestry trunk road
Rail	Canadian Pacific Railway Mainline at Leancoil, 20 kilometres east of Golden
Air Access	Golden airport - no scheduled commercial flights
Power Supply	On-site generation
Requirements	Approximately 1000 kw
Supply Alternatives	No reasonable alternative
Work Force Information	
Total operational work force	54
Housing options	1) Commuting from Golden 2) Camp managed by local lodge 3) Summer camp near millsite
Construction work force	Modest 10 work years
Construction camp	Commute from Golden
Work Force Rotation	Mine: 12 days on, 2 days off 3 1/2 summer months, or as directed Mill: Normal three shift rotation, or as directed
Indirect/Induced Employment	Not available
Development Schedule	
Stage I submission filed	February 1991
Site construction start up	Third Quarter 1991
Production start up	Stockpile - Third Quarter 1991

THE MOOSE CREEK MAGNETITE PROJECT

LOCATION AND PROPERTY HISTORY:

The property is located on the north east slope at the head of Moose Creek Valley. Moose Creek drains southward to the Beaverfoot Valley, which in turn joins the Kicking Horse drainage system south east of Golden, British Columbia (Figure 1.)

GEOLOGY:

The basic geology of the area consists of folded and faulted sedimentary and metasedimentary rocks of Cambrian-ordovician age in the mountains. These are chiefly dolomite, limestone, sandstone and argillite. In the upper Moose Creek area these sediments have been intruded by a mafic intrusive (See Figure 2.)

The property was described by J.A. Allen in Geological Survey of Canada (GSC) Memoir number 55 (1914). The deposit was evaluated by H.V. Ellsworth and John F. Walker in GSC Summary Report 1925, part A.

The deposit is referred to by Allen as "... the large area of basic rock at the head of Moose Creek that contains as much as 14-15% magnetite." Ellsworth and Walker examined the deposit in terms of knopite, a titanium bearing mineral, "... occurring in a fairly coarse basic pegmatite composed essentially of hornblende, biotite and magnetite. The pegmatite outcrops at an elevation of 8,500 feet. It is lenticular, 30 feet wide and appears to be intrusive."

From the descriptions cited above, it can be seen that the deposit consists of a large mafic magnetite - containing intrusive with coarse grained mineral segregation zones containing magnetite, knopite and cesium group minerals. Recent work on the talus slope has unearthed boulders of diorite, olivine, sodalite and other unidentified mineral types.

A large talus slope has developed from the erosion of the basic or mafic rock mass. It appears that the magnetite-containing rocks are more friable than the host rocks, resulting in talus in which the large, coarse material up to large boulder size contains very little magnetite. The fine fraction (minus 4 mesh) contains substantially all of the minerals of commercial interest.

RESERVES:

Magnetite in the talus slope is the mineral of commercial interest at this time. Economic feasibility of producing any other minerals occurring in the deposit will be evaluated on an ongoing basis as development proceeds.

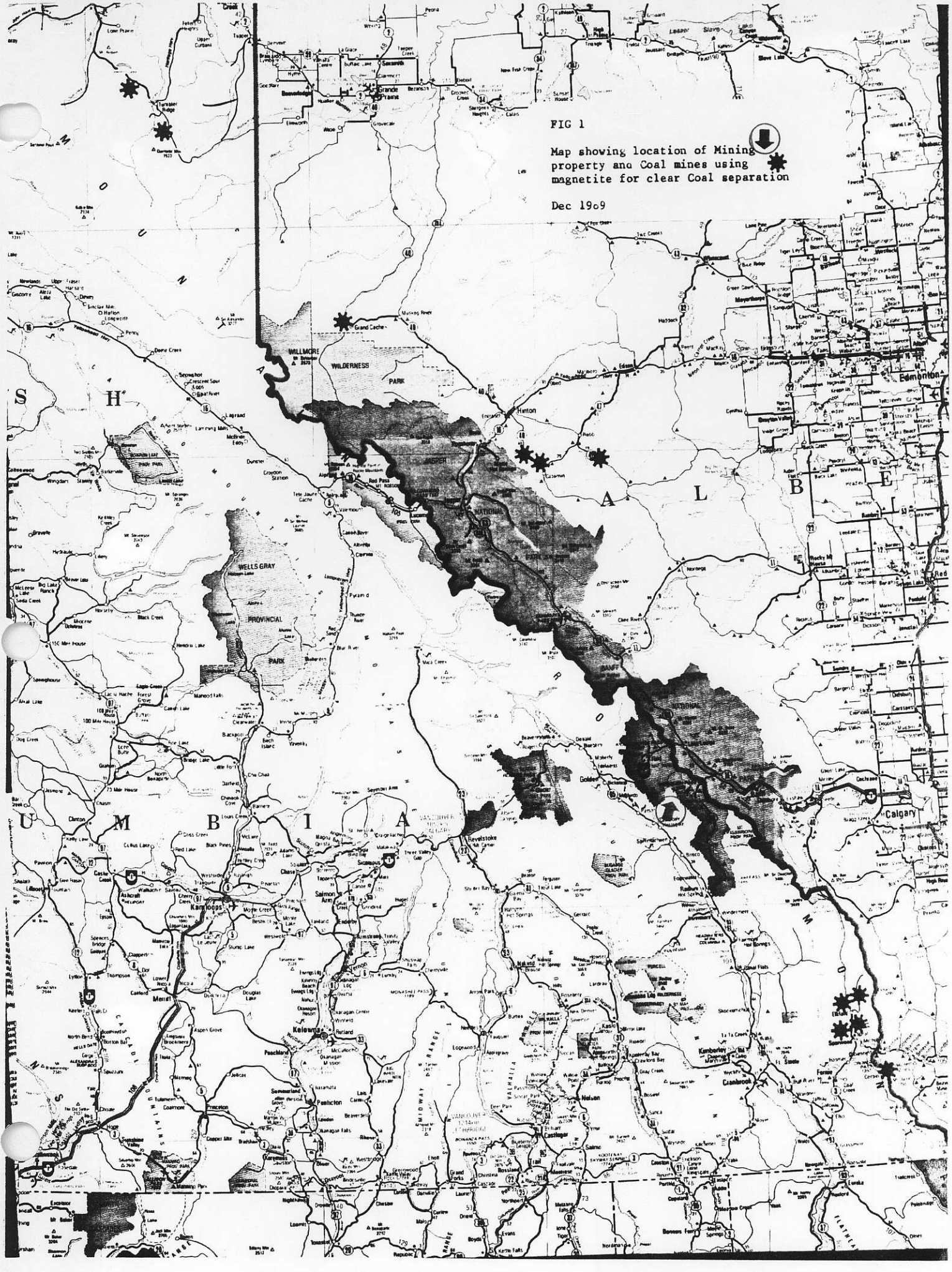


FIG 1

Map showing location of Mining property and Coal mines using magnetite for clear Coal separation

Dec 1909

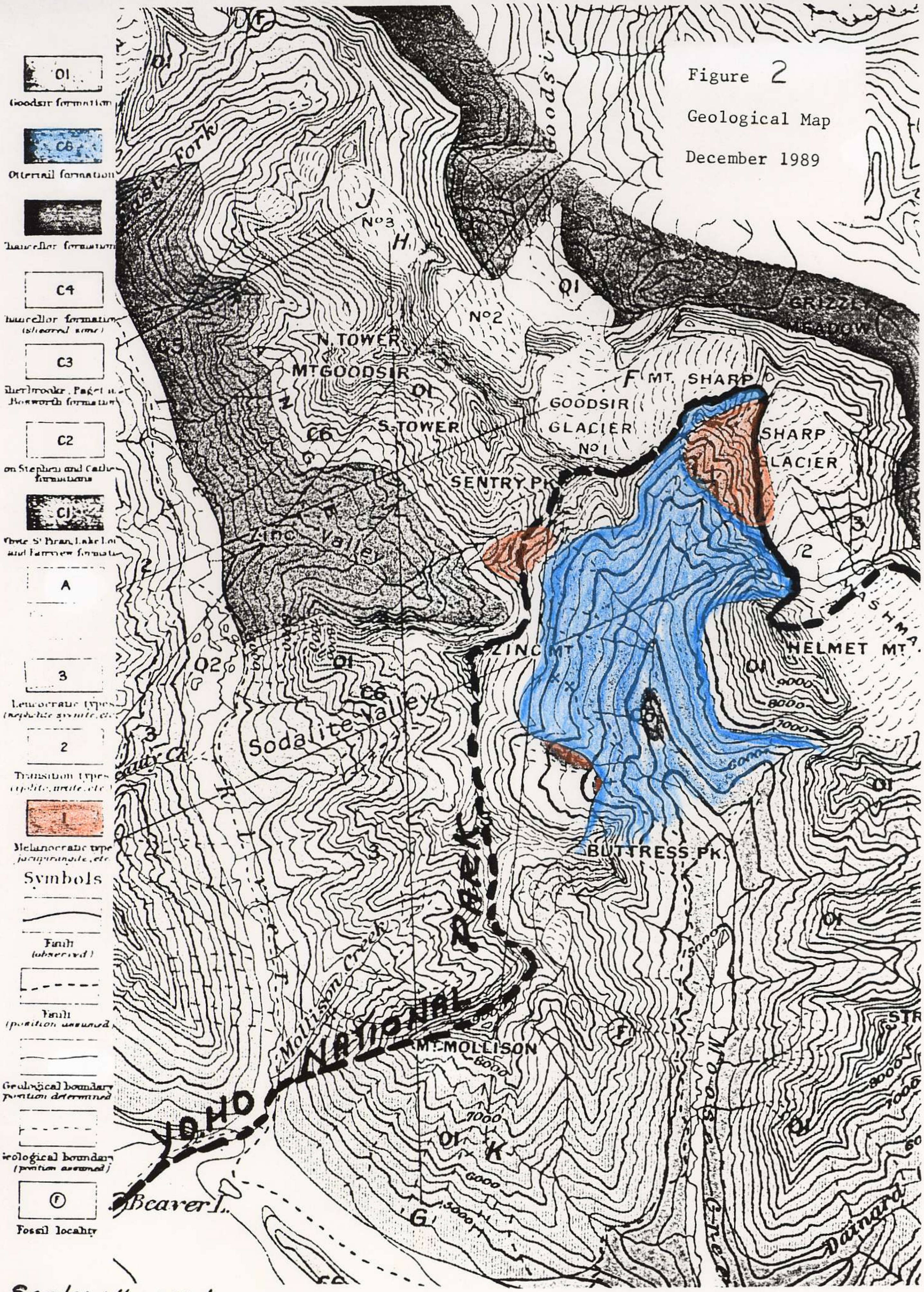


Figure 2
Geological Map
December 1989

Scale: 1" = 1 Mile

Results from a bulk sampling and analysis program have demonstrated reserves of magnetite contained in the broken, talus material as follows:

Proved reserves:	205,000 tonnes
Indicated reserves:	365,000 tonnes
Resources:	1,900,000 tonnes
TOTAL	**2,500,000 tonnes**

(Please refer to the small scale (1:2500) map in the attached pouch.)

Present consumption of magnetite in British Columbia and Alberta by the coal industry is approximately 60,000 tonnes per year. At this rate of production, total indicated reserves/resources are sufficient for over 40 years.

PROPOSED PILOT MINING AND ORE PROCESSING:

The mining method proposed is an earth moving operation utilizing bulldozers and front end loaders. Because of its simplicity, no pilot mining activity is contemplated.

The ore processing procedure is also fundamentally simple in nature. The high specific gravity and magnetic characteristics of magnetite allow simple proven procedures for its concentration from the waste materials.

PROPOSED PRODUCTION LEVELS:

Full production of 60,000 tonnes per year of magnetite will supply the present requirements of the western Canadian coal industry. Because of the elevation of the deposit, snow conditions limit mining operations to between 3 and 3 1/2 months per year. Scheduled production anticipates a three shift operation essentially during the months of July, August and September. Magnetite production of 20,000 tonnes per month will require processing 360,000 tonnes of talus or about 14,000 tonnes per day. Talus reserves/resources alone without consideration of the magnetic content within the intrusive rock mass is projected to exceed forty years of production at current consumption levels.

MINING AND EXTRACTION:

There is no overburden or ground cover in the central part of the talus deposit because it is an active avalanche area. The volume of talus in this part of the deposit alone is sufficient to sustain 9 to 10 years of mining operations. Elsewhere on the deposit there is little ground cover (See pictures and panoramic composite).

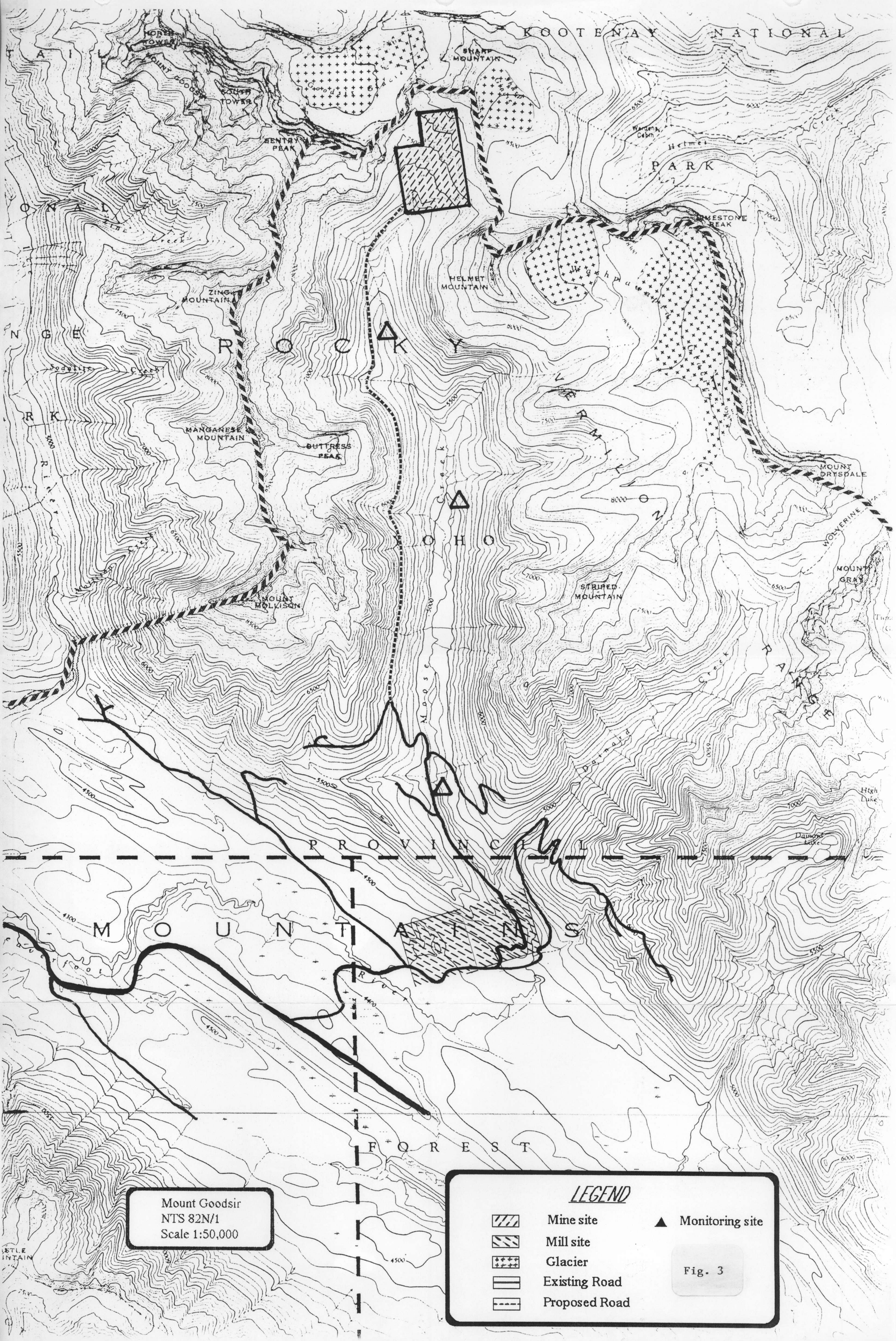

KOOTENAY NATIONAL PARK
ROCKY MOUNTAINS
PROVINCIAL FOREST
VERMILION RANGE
NORTH TOWER
MOUNT GOODSIR
SOUTH TOWER
SENTRY PEAK
SHARP MOUNTAIN
Goodsir Glacier
Helmet Creek
Wardens Cabin
LIMESTONE PEAK
HELMET MOUNTAIN
Washmawapta Glacier
ZINC MOUNTAIN
Sodalite Creek
MANGANESE MOUNTAIN
BUTTRESS PEAK
MOUNT MOLLISON
Moose Creek
STRIPED MOUNTAIN
MOUNT DRYSDALE
WOLVERINE PASS
MOUNT GRAY
Dainard Creek
High Lake
Dainard Lake
Beaverfoot River
Mount Goodsir
NTS 82N/1
Scale 1:50,000
LEGEND
Mine site
Mill site
Glacier
Existing Road
Proposed Road
Monitoring site

Fig. 3

Mining operations will be basic earth moving activities. A bulldozer will push talus to a feeder hopper equipped with a grizzly to eliminate over size rocks. The hopper will be fed by a front end loader. Extraction (See flow sheet 5A Figure 5) will be a wet screening operation with a magnetic drum collecting the magnetic material from the fine screened fraction.

Waste rock and stripped fines will be delivered by a portable conveyor belt to a disposal area where it will be contoured to a stable slope angle. Initially, waste disposal will be carried out on an existing low profile barren talus slope west of the mining area (lower end of line C-C_1). When a slot of suitable size has been developed to bedrock, waste rock will be spoiled in the mined out area.

Waste water from the screens will be pumped to a tailings pond off drainage channels. Settled water will be returned to the extraction unit for reuse. Seepage losses will be made up from slope runoff and groundwater.

It can be seen from the brief description given above that the mine site operation is a simple dozing/screening operation requiring no drilling or blasting and no overburden removal.

The mineral concentrate will be delivered to a storage bin or a surge stockpile and will be hauled to the mill site stockpile at the mouth of Moose Creek, eleven kilometres downstream (See Figure 3).

MILLING AND TAILINGS SYSTEMS:

The mine concentrate will be hauled to the mill site stockpile on an ongoing basis during the 3 to 3.5 months of mine operations. Stockpile capacity will be about 100,000 tonnes. A tentative site has been chosen (See Figure 3) which will permit a gravity flow mill design. Mill capacity will be designed for 325-350 tonnes of product per day operating during the months of May through November. The mill circuit (See flow sheet 5B, Figure 5) will accept mine concentrate which will be wet ground in a first stage ball mill to reduce the particle size sufficiently to liberate gangue particles attached to the magnetite. Gangue will be removed by wet cyclones.

Cleaned magnetite will be dewatered and dried. Secondary dry grinding in a ball mill with air classification will produce minus 325 mesh product suitable for heavy media and coal cleaning circuits. The product will be transported pneumatically to the product storage bins.

Fig 5 Mine/Mill Flowsheet

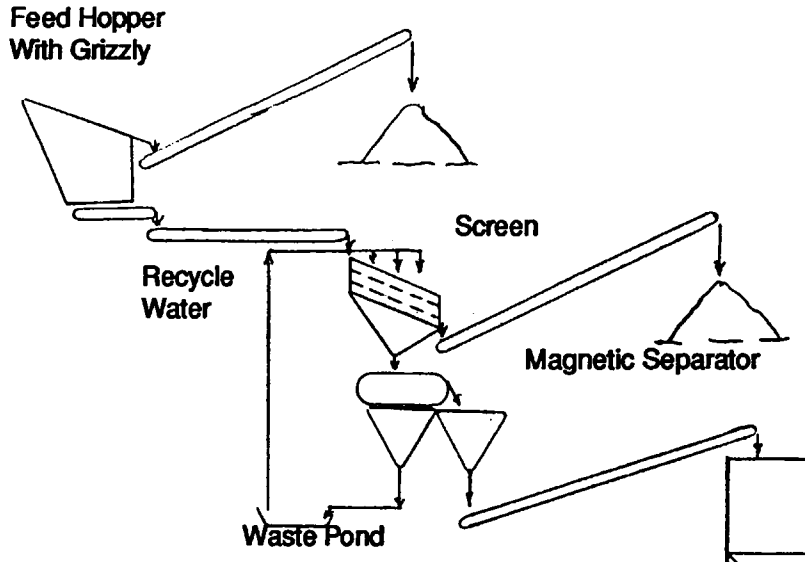


Fig 5A Mine FlowSheet

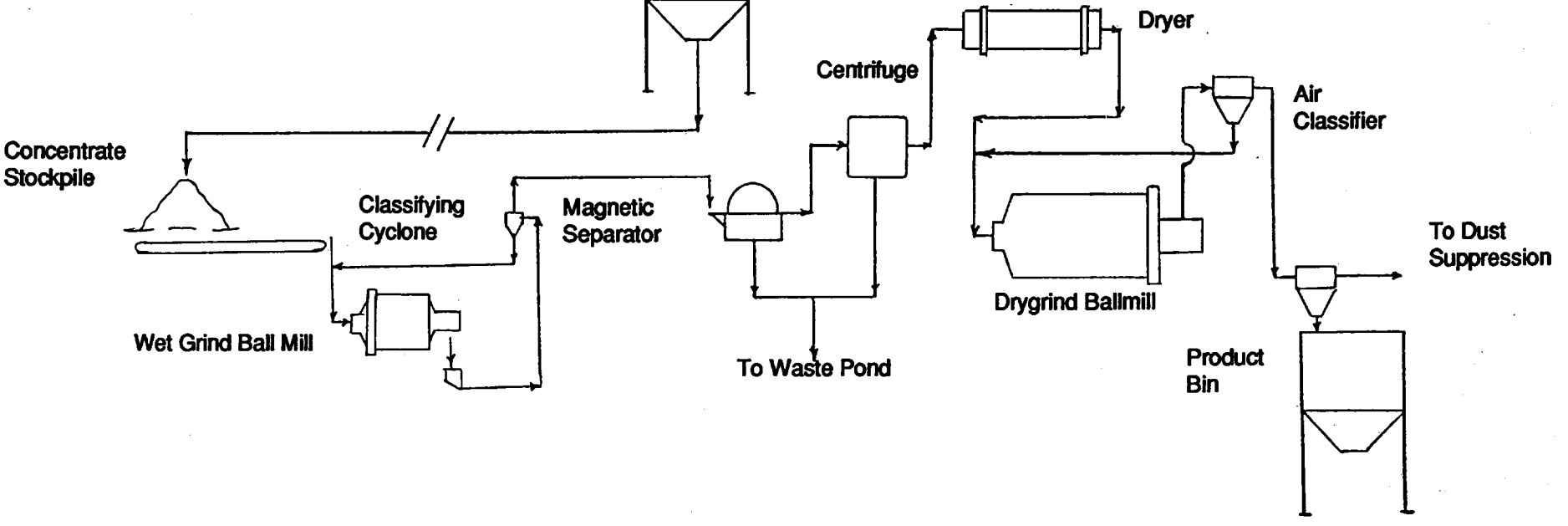


Fig 5B Mill FlowSheet

February 1991

Gangue from the wet classification circuit will be piped to a tailings pond tentatively sited in a marshy area below the mill site (See Figure 3). Dust emanating from the dry classification system will be controlled by water sprays and the sludge will join the wet classifier effluent for transport to the tailings pond. Tailings pond design will allow for settlement of 10,000 tonnes of solids per month. The area of the marsh is sufficient to allow water residence time to be calculated in multiples of months or seasons.

POWER SUPPLY:

Electrical power supply to the mine is projected to be 250 kw, which will be supplied by a portable generator set.

The mill site power requirements will be about 1 mw of electricity supplied by a stationary plant which may be fuelled by diesel or fuel oil.

OTHER ON-SITE FACILITIES:

A maintenance shop, a field office with a first aid room, lunch room and a field test laboratory will complete the mill site facilities.

PROPERTY ACCESS:

The proposed Moose Creek mine site is accessed by means of a gravel road running south for 30 kilometres up the broad valley of the Beaverfoot River from a point 26 kilometres along the TransCanada Highway east of Golden. Five kilometres of logging road leads up to the mouth of Moose Creek and the proposed mill site. The mine site is a further distance of 11 kilometres up Moose Creek Valley, three of which is traversed by an existing logging trail. The remaining 8 kilometres is accessed by a horse trail which cannot be negotiated by truck. Therefore, 8 kilometres will require improvement and 8 kilometres of new logging road will be required. The proposed roading plan is shown on Figure 3.

PRODUCT HAULAGE:

Product will be hauled by truck via the access road described above. Approximately one half of the production will be delivered through Golden via Highway #95 to the Sparwood area coal mines in south eastern British Columbia. Another quarter will be destined to north east B.C., while the remaining quarter will be delivered to Alberta coal mines in the general vicinity of Hinton.

SIZE AND SOURCE OF WORK FORCE:

At a production level of 60,000 tonnes per season, the following work force will be required:

1)	Mine	18	3.0-3.5 months (July - September)
2)	Mill	12	6-7 months (May - November)
3)	Haul	12	6 months (May - November)
4)	Support	12	7-8 months (April - November)
	TOTAL	**54**	

To the extent that this is practicable, the work force will be hired locally.

HOUSING OF WORK FORCE:

Most of the work force will come from the town of Golden and environs and will commute to and from the mine or mill. There will be a portion of the work force that will need camp or alternative housing near the mill/mine site.

At the appropriate time in the project schedule, discussions will be held with the principals of Beaverfoot Lodge with respect to supplying catering and camp services for the project. The alternative will be to establish a summer camp facility at or near the mill site to meet the demand.

PROPOSED DEVELOPMENT TIME TABLE:

Present market projections require mill start up in early May, 1992. This would require a mill feed stockpile of 40,000 tonnes. Mining will have to begin before August, 1991 in order to generate the stockpile by the first week in October. Site preparation, concrete storage structures and footings for the mill will require completion in the fall of 1991. Mill site construction will be completed in April and early May, 1991.

ENVIRONMENTAL STRATEGY:

The Moose Creek basin is used by wildlife in both the subalpine and alpine zones. Magnetite extraction operations will be conducted in a manner which will minimize

interference with wildlife populations and reclamation will focus on establishment or enhancement of habitat.

Recent work sponsored by the permitted outfitters for the region have established ecozones inhabited by ungulates and fur bearers, together with estimated population numbers. Field reconnaissance conducted by St. Paul Minerals has identified summer ranges for elk, mountain goat and grizzly populations. The Company intends to confirm the extent of these zone to ensure field and mill operations will be compatible with wildlife values. In addition, the Company is prepared to assist wildlife authorities with observation of animal movements. The Company will maintain a presence in the valley year round which will discourage poachers.

Baseline water quality surveys will be conducted to establish pre-project conditions and criteria for monitoring the effectiveness of water management structures associated with extraction and mill operations. A continuing environmental quality monitoring program will be planned and conducted based on data and information derived from the baseline surveys as a frame of reference for measuring the effectiveness of protection works. Figure 3 shows the instrumentation plan for baseline data acquisition. The plan will include whatever additional instrumentation the baseline surveys indicate will be needed to adequately monitor key hydrological and water quality parameters.

Bioengineering techniques will be used for erosion control whorever the land surface must be disturbed by mining or milling operations. Locally derived natural materials such as willow, alder and native grasses planted immediately following road construction have been shown to be effective in Europe and elsewhere in North America. These same techniques will be used for extraction site and mill surface disturbance reclamation.

A "reclaim as you go" mine plan will be used. As disturbed areas are abandoned, they will be reclaimed as wildlife or fisheries habitat.

Process waters associated with the mill site will be treated to remove suspended solids before release to the environment. Chemical water quality will be equal to or better than the receiving waters and will comply with all British Columbia water use regulations and permit requirements. Settling ponds will be reclaimed as wetlands and will be sited in zones that were wetlands before the project was built. Other stormwater management structures will be designed so as to avoid fisheries disturbance. Stream reclamation will be conducted to optimize salmonoid habitat.

SOCIO ECONOMIC CONSIDERATIONS:

Magnetite is used as the heavy media in the coal cleaning circuits of eastern British Columbia's coal mines. It is also used for the same purpose by those Alberta coal mines which are located in the mountains and foothills of the province. Existing reserves, from the Merritt area of the province, are critically limited. British Columbia Geological Survey Open File Report 1988-28 entitled "Magnetite Occurrences in British Columbia" compiled by Kirk D. Hancock notes that of the 640 known magnetite occurrences in the province only 81 are significant and none are commercially viable. The Moose Creek project will be called upon to supply the coal mines requirements within two years. The alternative supply sources presently being contemplated by the mines are in Minnesota or Western Washington, U.S.A. In either case, jobs would be lost and foreign currency would be required for purchases. Indirect earnings would also be lost.

The Moose Creek project will be a significant employer, with over 50 stable long term jobs resulting from project operations. The project will also purchase its supplies and services locally whenever possible. More than $3 million per year will be injected into the local economy.

No social dislocation is expected as the valley is uninhabited. Workers will be recruited from the regional workforce and little, if any, net migration to the region is expected.

Patented traplines are known to be present in the basin. Since mining operations will be restricted to three to three and one half months of the summer season, little effect on trapping is expected.

No additional infrastructure will be required and no government financial support will be required to ensure the viability of this project.

FIGURES

#1 Location Map

#2 Geology Map and Legend

#3 1:50,000 Location Map

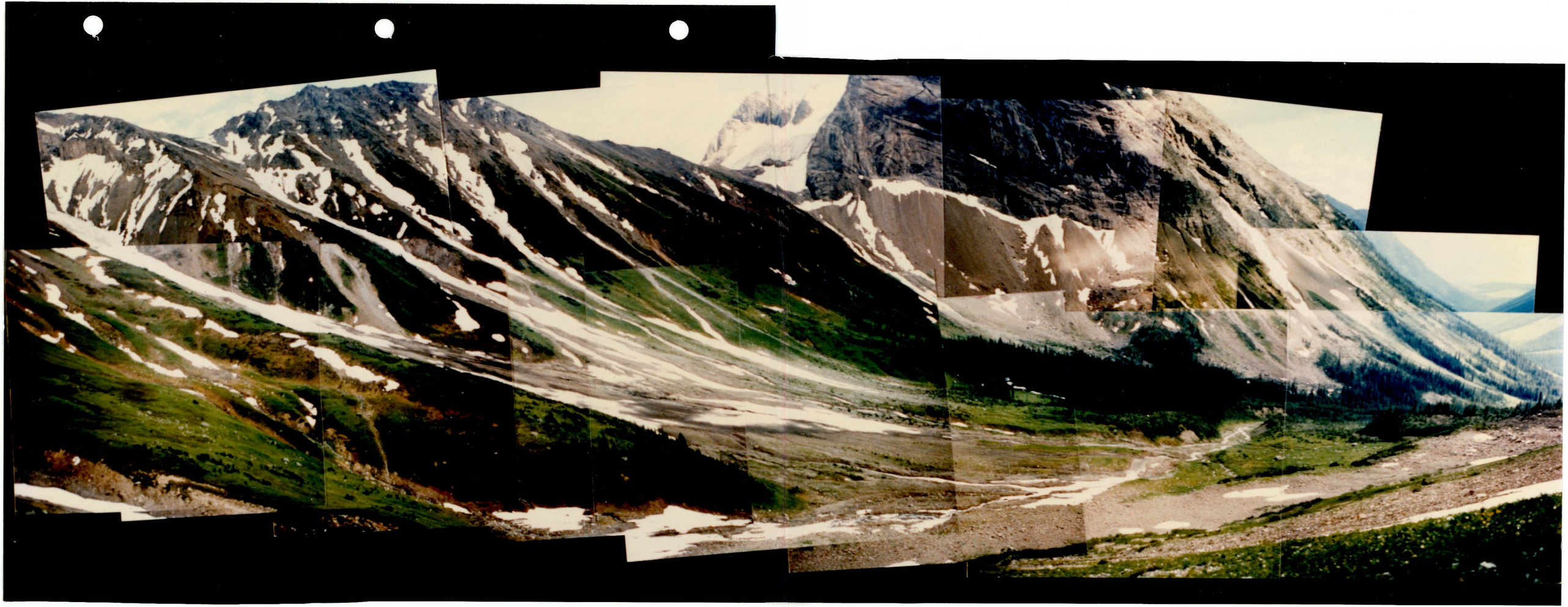
#4 1:2,500 Reserves Map

#5 Mine/Mill Flow Sheet

PHOTOGRAPHS

#1 Panoramic View (In Pouch)

#2 Close up views showing characteristics of the talus slope and washout gullies



N

2850
2700
2500
2400
2350
2300
2200
2150
2100
2050
2450
2250

SAMPLE BATCH NO.4
SAMPLE BATCH NO.3
SAMPLE BATCH NO.2
SAMPLE BATCH NO.1

1
2
3
4
5

a
b
c

LEGEND

RESERVES AREA:

- CLAIM (NO. 1-5)
- INDICATED
- RESOURCE
- PROVED
- LINES OF SECTIONS

NTS 82 N/1

scale 1:2500

FIGURE #4