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Appraisal of the Cinnabar Peak and Bow River Coal Properties in the Peace River District of British Columbia, Canada

1.0 Introduction

The objective of ths report is to provide concise data on the overall potential of these properties for the economic exploitation. An assessment is made of the geological reports produced to date by Halferdahl and Associates Ltd. and Paul Dyson and Associates Ltd. with particular attention to the relevance of the information for mining purposes. A description is given of a proposal to produce 500,000 long tons of saleable coal by mid 1979 together with the return on investment that can be expected from such an operation. The figures produced are reasonably accurate order of magnitude estimates, but as these will shortly be reassessed no financial analysis per medium of a computer model is included at this time.

2.0 Background Information

Cinnabar Peak Mines Ltd. began investigation of its Peace River Properties in 1969 shortly after their acquisition. This work included geological mapping, sampling of seam outcrops, trenching and drilling of exploratory boreholes. The work was continued in 1971, 1972, and 1973 by Halferdahl and Associates of Edmonton who prepared geological reports on their findings. Three holes were drilling in 1969 and four during the 1972 and 1973 exploration programme which indicated extensive reserves of metallurgical quality coal. After a period in which exploration was suspended, a further nine holes were drilled in 1976 under the management of a new company - Doug Ragan Construction Ltd.

This company in April 1976 acquired an exclusive right for the exploration, development, production and marketing of the coal from the property in return for certain payments. In essence these consist of royalty payments of $2.50 per long ton with some pre-payment of these royalties in the sum of $ 50,000 per year. A notice is required by Cinnabar Peak that the property will be put in production by June 1st, 1981.

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Bow River Resources Ltd. and Ranier Energy Inc., both of Vancouver, B.C. are the holders of a 40% and 60% equity, respectively, in certain coal licences in the Peace River District of B.C. adjacent to the Cinnabar Peak Property. By an Operating Agreement dated the 19th March, 1976, Bri Coal Mining Limited obtained the exclusive rights to explore for, develop, mine and market the coal from the property.

Bri Coal is a 100% Canadian company, incorporated in British Columbia, privately owned by three shareholders who are keen to put this property into production. So far approximately $ 400,000 has been expended on the property, including $ 150,000 in 1976.

In return for the concessions, Bri Coal will pay a royalty of $1.00 per ton and commit to a yearly expenditure of $ 150,000 per year. Bri Coal must bring the property into production within six years from the present time.

3.0 Location and Description of the Coal Licences

On Plans I and II the major coal licence groups are shown in relation to the town of Chetwynd, which itself is located on the Hart Highway, 200 miles N.E. of Prince George, British Columbia. The Cinnabar Peak and Bow River licences are conveniently situated in relation to the existing towns of Hudson's Hope and Chetwynd and are reached via excellent paved roads and a high grade forestry road. See Figs. 1 and 2.

In comparison with the other proposed coal development projects for the region, this area has many natural advantages both in its geographical location in the geological occurrence of the deposit. Infrastructure costs will be minimal due to the availability of labour from nearby townsites, the existence of roads in the area having easy grades, the availability of electric power and water and the British Columbia Railhead at Chetwynd within trucking distance from the minesite. Geographically, the coal seams occur in flat lieing strata with dips generally less than 15^{o}. See Fig.3 and 4.

The most important seam of coal, the TROJAN, outcrops to the surface in suitable locations for entries to be driven into the coal for underground mining. Some areas suitable for surface mining are also available with acceptable strip ratios to provide a hedge against any difficulties which may occur in the early years of underground development.

The Cinnibar Peak property comprises thirty-seven coal licences nos. 3407 to 3444 totalling 19,456 acres as well as 1600 acres of optioned freehold ground. Coal occurs on virtually every licence in multiple seams, the total reserves of which would exceed 500 million tons. However, in practical terms the proven reserves of the Trojan Seam are 115 million tons in those areas readily amendable to mining, this being sufficient to support a million tons per year operation over thirty years.

The Bow River property comprises twenty one licences totalling 12,007 acres with the Trojan Seam underlying all of these licences. In the area near the outcrops where the exploration has been concentrated twenty million tons of Trojan Seam coal are available for exploitation by underground mining in what appears to be very good mining conditions.

In my opinion these two properties together are the most potential areas in the Peace River District in terms of coal quality, location and infastructure, mining conditions and the relative ease with which they can be put into early production.

4.0 Geology

The geological structure of that part of the property south of the Peace River, which covers the mining areas of immediate interest, consists basically of a southerly plunging anticline and syncline with axes running in a north-south direction. Dips on the flanks of these structures are largely within the range of 8^{o} to 15^{o} which are conducive to the use of the continuous mining system. A parallel westerly dipping thrust fault occurs just to the east of the anticlinal axis which has a throw or displacement of 250 feet. While this constitutes a barrier to the eastern development of the underground mining plan, there are at least 70 million tons of Trojan Seam to the west of this fault which can be mined from the proposed entries into the seams on the western side of the fault.

Long term developments can be planned through the fault to exploit the reserves on the east which, in perspective, is not a difficult mining problem, having in mind the tunnelling machines available today at low capital cost.

Analyses conducted on the Trojan Seam gave the following average results from the areas west of the fault.

The samples were crushed to 1/4 inch maximum which resulted in an average size distribution of:

Plus	100 mesh -	93%
Minus	100 mesh -	7%

Analyses of the plus 100 mesh fractions when washed at an S.G. of 1.80 with a yield of 90% have the following average ranges:

Ash	5% - 7%
Volatile matter	24% - 25%
Residual moist.	0.4%
Fixed carbon	67% - 69%
Sulphur	0.5% -0.7%
B.T.U./lb.	Plus 14,000
FSI	6 - 8

Analyses of the minus 100 mesh after froth flotation with plus 80% yield:

Ash	6% (less than)
Volatile matter	26%
Residual moist.	0.6%
Fixed carbon	67%
Sulphur	0.5% - 0.7%
FSI	6 - 7

5.0 Reserves - Underground

The in-place proven underground reserves of the Trojan Seam south of the Peace River to a depth of 2,000 feet below the surface are conservatively estimated as follows:

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Part of Properties	Minimum Area (square miles)	Average Thickness	Millions of tons
a) East of major fault	6	7 ft.	42
b) West of major fault	6	8 ft.	48
c) Northwest section	9	6 ft.	54
		Total	144

In addition there are very substantial reserves of metallurgical and thermal coal in the Trojan and multiple other seams but these require additional drilling to evaluate.

Reserves - Surface

Halferdahl estimates these to be between 6.8 and 20.4 million long tons but a further shallow drilling programme is necessary to fully determine these quantities.

6.0 Conceptual Mining Development Plan

It is proposed to develop both licence areas under a joint management committee which will ensure the orderly management of the resource. This will avoid competition for labour and will provide, whenever possible, facilities for the mutual use of both operations. Two small underground mines will be commissioned, one on each property, and if necessary government approvals can be obtained under reasonable regulations, a surface mine will be established to supplement the underground production, especially in the early years. Each underground mine will be designed to deploy two continous miner units, resulting in a year production of 336,000 tons of raw coal from each mine on a very conservative unit productivity basis. (Note all tons in this report are 2,240 lbs.).

A major constraint on the development of any underground mining operation is the low availability of suitable labour from the surrounding districts. Our previous experience, however, indicates that it is possible to acquire up to 80 men without great difficulty which would be sufficient to operate two continuous miner units. The necessary supervisory staff and engineers are also available for an operation of this size. Labour must be recruited and trained to provide for the other units so it is proposed only to commission one continuous miner per year commencing in 1979.

In this appraisal two alternative schemes are evaluated to determine the limits of the operating and capital cost with and without surface mining. The first alternative assumes that satisfactory approvals for surface mining will be obtained before the scheduled production start up in 1979. This surface mining operation would be contracted out to a reputable operator who would mine and deliver the coal to the preparation plant for a total inclusive cost per ton. The second alternative is based on the premise that all mining is underground because the approvals for surface mining if granted would contain conditions too onerous to accept. It is becoming increasingly apparent that the costs of multi seam surface mining with strip ratios over 4:1 are increasing disproportionately and will shortly parallel those of underground mining so that the main advantages of surface mining may lie in the fact that production can be more consistent and that suitable labour is more readily available. These advantages are somewhat nullified when the underground mining conditions are favourable as is anticipated to be the case in this location. See Fig. 4 for the production schedules under both alternatives.

Fig. 4 Production Schedules (long tons of raw coal)

Year	Scheme No 1		Scheme No 2		
	No units underground	Total	Surface	No.units underground	Total
1979	1	168,000	336,000	1	504,000
1980	2	336,000	504,000	2	840,000
1981	3	504,000	504,000	2	840,000
1982	4	672,000	504,000	2	840,000

7.0 Description of Operations

7.1 Underground Mining

The physical mining conditions appear to be favourable to the use of continuous mining machines due to the relatively flat grades and good roof conditions as anticipated from observations or the nature of the strata in the area. Longwall or Shortwall mining is not considered to be applicable at this stage due to the high capital costs and the inexperience of available labour.

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In order to illustrate the proposed plan for development, reference is made to a typical small mine layout as reproduced in Plan 3 which will be used as a basis for the underground cost analysis. Initially the surface area along the outcrop of the seam would be cleared and levelled for erection of the surface support facilities. From this outcrop area the underground entries would be driven down dip by the first continous miner unit to a point approximately 2,000 feet from the surface.

From the roadway function at this point secondary entries would be driven along the strike of the seams to the lease boundary or to a predetermined limit. Pillar panels would be developed to the rise from these secondary entries and the seam totally extracted by a sequential system of pillar workings. Coal produced at the face would be carried by shuttle cars from thecontinuous miner to the conveyor panel belt and thence by trunk conveyors to the surface. At an appropriate time in the development schedule, the second unit would be commissioned and would use the same trunk conveying system as the first unit.

The coal emerging from the mine would be delivered into a storage bin for subsequent transportation to the preparation plant.

7.2 Surface Mining

It is proposed that the surface mine would be operated by a reputable contractor who would supply all equipment and labour required for the overburden removal and coal production. It is envisaged that front end loaders would be used extensively in this small scale operation and would load both overburden and coal into trucks for transportation The actual pit design and the surface restoration responsibilities would be agreed upon with the contractor during the negotiations to fix a contract price for the mining and delivery of the coal to the preparation plant.

8.0 Surface facilities

8.1 Power supply

The relative costs and merits of local power generation and connection to B.C. Hydro are currently being evaluated. Connection to B.C. Hydro is an obvious and very disuable source of supply but the capital cost of high voltage transmission lines and circuit breakers must be related to to overall costs of local generation. The use of the waste heat from local power souce could also be a cost saving factor. An estimate of $1.5 million has been used in the capital cost schedule to cover either systems up to a demand of 5,000 bilo watts which is sufficient for the projected level of production.

8.2 Preparation Plant

The alternatives here are:

a. To have the coal transported raw and processed in a large preparation plant located in Chetwynd to service more than one mining operation.

b. To wash the coal at the minesite. This is a viable alternative if the fine coal fraction has a low ash content and if the generation of fines by mining is below twenty percent. A simplified process could then be installed which would avoid the necessity of elaborate drying facilities for the whole production.

There are positive indications that the minesite preparation plant installation might be a viable proposition. The borehole cores when crushed to minus 1/4 inch have had less than 7% of product below 100 mesh. A full scale bulk sample will shortly be obtained for processing through a pilot washing plant after which more detailed information will be available. Prices have been obtained from manufacturers of pre fabricated units which are capable of washing 250 tons per hour of raw coal, including a simplified section for small coal processing. These investigations have indicated that an installed capital cost of $ 2.8 million can realistically be used in our present calculations to give a 7% ash product at 6% moisture.

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8.3 Mine Bathouse - Office - Camp cabin Complex

Each underground mine would require bathing facilities for 100 men so that two such complexes would be erected, one at each minesite. Each would be a concrete block and tile building estimated to cost $ 0.3 million.

8.4 Workshop and Store

A small workshop and store would be provided at each location for the day to day repair and maintenance of the machines and preparation plant. Major overhauls would be contracted out to the equipment supplier or to other local engineering firms having the required capabilities. Each mine facility would be provided with its own store and spares inventory covering the most frequently used machine parts. Estimated cost of a suitable building equipped with an overhead crane is $ 0.35 million (not including inventory).

8.5 Ventilation Fan, Mine Heators etc.

These are normal mining requirements and would be designed for this size of mine, estimated cost $0.1 million.

8.6 Surface Conveyors, Bins etc.

A simple storage bin of 300 tons capacity with truck loading capability would be required at each minesite. Although the first underground may feed its coal directly by conveyor into the preparation plant, provision is made for some storage at each mine to allow some flexibility in the final design. Estimated cost of each installation $0.15 million.

8.7 Mobile equipment

Front end loaders, grader, trucks, staff vehicles etc. would be required at an estimated cost of $1.0 million for both mines (allow $.5 million each).

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9.0 Production Costs

9.1 Assumptions

9.1.1 The costs developed below for underground mining would not be exceeded by the total cost of surface mining operations under a contract price for delivery of the coal to the preparation plant.

9.1.2 A two unit mine is the standard for the derivation of costs. The capital expenditures for power and preparation plant will be charged against the first underground mine only. The second mine when commissioned will carry its own capital for the additional facilities required.

9.1.3 The following statistics apply to the standard two unit mine:

a. Continuous mines productivity - 350 long tons/shift

b. " " " 700 long tons/day

c. Mine will produce on five days per week

d. " " " " 48 weeks per year

e. Weekly production (raw coal) - 7000 long tons

f. " " (clean coal) - 5250 long tons

g. Yearly production (raw coal) - 336,000 long tons

h. " " (clean coal) - 252,000 long tons

9.2 Labour requirements

In order to attract labour from the local reserve or from a greater distance which would necessitate the relocation of families, it is essential that a good working climate be created with better than average wage rates. As it is not proposed to provide a camp or housing, a housing subsidy would be paid to those workers owning their own houses in Hudson's Hope or Chetwynd.

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YES.

Classification of Labour Standard Two Unit Mine	No of men required D.S.	A.S.	N.S.
i. Underground Operation			
Continuous Mines Operators	2	2	-
Shuttle car operators	4	4	-
Roof bolters	4	4	4
Conveyor attendents	2	2	-
General (absentee replacement)	4	4	-
Supplies	2	2	4
ii. Surface Operations			
Preparation Plant Operators	3	3	3
Mobile Equipment Operators	2	2	1
Lamp Cabin/Bathouse Attendent	1	1	-
Timekeeper/storeman	1	1	1
First Aid/General	1	1	-
iii. Maintenance (surface and underground			
Mechanics	2	2	2
Electricians	1	1	1
Welders	1	1	-
Labourers	2	2	-
Total hourly paid employees	32	32	16
iv. Staff			
Mine Manager	1		
Overmen	1	1	-
Firebosses	2	2	1
Preparation Plant Super.	1	-	-
Mine Electrician/Engineer	1		
Assistant Engineers	1	1	1
Total staff	7	4	2

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9.3 Remuneration of Labour

a. Hourly Labour Rate - $ 10

b. Production Bonus - $100 per week

c. Housing Subsidy - $ 40 per week

d. Overtime at 15% at time plus one half

e. Fringe Benefits

Hourly employees	-	25% of base
Staff employees	-	15% of base

f. Staff salaries per year

Manager	-	$ 35,000
Overmen	-	$ 26,000
Firebosses	-	$ 22,000
Prep Plant Superintendent	-	$ 28,000
Mine Electrician/Engineer	-	$ 30,000
Assistant Engineers	-	$ 26,000

Note: The bonus will only be paid for production over the base rate of 350 tons per shift and is therefore not included in the following calculations.

9.4 Labour Costs - yearly production basis

	$	$
a. Hourly employees		
80 x 8 x 240 x 10	1,536,000	
Overtime at 15% at 1½T	346,600	
Fringe benefits at 25%	384,000	
		2,265,600
b. Staff employees		
Yearly salaries	330,000	
Fringe benefits	49,500	
		379,500
c. Total Labour Costs		2,645,100

Labour cost per long ton of clean coal is $ 10.50

9.5 Material Costs

Without historical costs it is difficult to precisely estimate material costs for a particular operation. The figures given below are based on experience and a general knowledge of the industry.

	Cost per long ton of clean coal	$
a.	Face materials Lumber, roof bolts, brattice, vent tubes, machine consumables picks, oils, greases etc.	1.90
b.	Repairs and Maintenance Machine parts, replacement of cables conveyor parts, belting etc.	1.45
c.	Major Overhauls Cost of major overhauls to all equipment on a two year basis	0.60
d.	Mine Services Rock dusting, re-timbering, bricks and concrete, general support	0.30
e.	Direct Shop charges Cost of materials and services to supply underground requirements	0.30
f.	Electric Power Estimates of total cost	0.50
g.	Mine Heating	0.15
h.	Preparation Plant Consumables and repairs	0.60

Material Cost per long ton of clean coal is $ 5.80

9.6 Total Operating Costs

	Cost per long ton of clean coal $
Labour	10.50
Materials	5.80
Transport to Railhead	3.60
Rail Freight to Vancouver	14.00
Neptune Loading charges	1.30
Labour recruitment	0.30
Sales and administration	1.50
Royalties - local	2.50
- gov't	1.50
	$ 41.00

10.0 Marketing

In the present state of world steel production there is an over supply of coking coal resulting in a buyers market. It is considered however, that the large reserves of high quality coal available from these properties are attractive to any steelmaker wanting to secure long term security of supply at a competitive price. The current export prices of Canadian coal range from $ 57 to $67 per long ton F.O.B. Vancouver depending on quality, although the latest McIntyre Porcupine Smokey River coal now sells at $ 70.50. Bearing in mind the need to attract buyers and pending the quality analyses expected from the proposed bulk sampling of test adits in the seam, it is reasonable at the present time to assume a sales price of $ 63 per long ton F.O.B. Vancouver.

11.0 Capital Costs - underground two unit mine

11.1 The basic coal face unit is a continuous miner, shuttle cars, roof bolter etc. complete with a panel conveyor and all electricals:

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Item	Unit Cost	No.	Total Cost
Continuous Miner	350,000	1	350,000
Shuttle Cars	85,000	2	170,000
Breaker Feeder	60,000	1	60,000
Roof Boller	50,000	1	50,000
Face Ventilation Fan - complete	15,000	1	15,000
Transformers 750 KVA	45,000	1	45,000
Mining Section Switchgear	72,000	1	72,000
Trailing cables per section	68,000	1	68,000
Panel Conveyor - complete	200,000	1	200,000
Supply Tractor & Trailers	80,000	1	80,000
Auxiliary equipment	35,000	1	35,000
Pipes - fire fighting equipment	25,000	1	25,000
Mine drainage equipment	15,000	1	15,000
Miscellaneous	65,000	1	65,000
			$1,250,000

11.2 Other equipment required in a small mine to support coal face units:-

Trunk Conveyors	400,000	2	800,000
H.T. Cable	35,000	1	35,000
Switchgear, Transformers	65,000	1	65,000
Miscellaneous	150,000	1	150,000
			$1,050,000

11.3 Surface Facilities

Power Supply	1,500,000
Preparation Plant	2,800,000
Bathhouse, Offices, etc.	300,000
Workshop, store, etc.	350,000
Ventilation	100,000
Surface Conveyors, bins, etc.	150,000
Mobile Equipment	500,000
Rail Car Loading at Chetwynd	300,000
Miscellaneous - contingencies	1,000,000
	$7,000,000

11.4 Pre-Production Costs

These would include final exploration expenditure, refined feasibility studies, engineering, site preparation, erection of facilities, surface mine development,

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underground mine development, labour recruitment costs, etc., estimated at $2.5 million. Although these expenditures are not all directly related to a two unit underground operation, they are included as being part of the overall development.

11.5 Capital Cost Schedules

These are based on the two alternatives previously described, depending on the viability of surface mining.

	RAW COAL PRODUCTION (1,000's long tons)					
	1977	1978	1979	1980	1981	1982
Scheme 1 - Surface and Underground Mining						
Underground Mine No. 1						
No. 1 Miner Unit	-	-	168	168	168	168
No. 2 Miner Unit	-	-	-	-	168	168
Surface Coal	-	-	336	504	504	504
			504	672	840	840
Saleable Coal			378	504	630	630
Scheme 2 - Underground Mining Only						
Underground Mine No. 1						
No. 1 Miner Unit	-	-	168	168	168	168
No. 2 Miner Unit	-	-	-	168	168	168
Underground Mine No. 2						
No. 3 Miner Unit	-	-	-	-	168	168
No. 4 Miner Unit	-	-	-	-	-	168
			168	336	504	672
Saleable Coal			126	252	378	504

CAPITAL COST SCHEDULE - SCHEME 1

1,000's of Dollars

Item	1977	1978	1979	1980	1981	1982
Pre-Production Expense	1,000	1,000	500	-	-	-
Surface Facilities						
Power Supply	500	1,000	-	-	-	-
Preparation Plant	200	1,600	1,000	-	-	-
Bathhouse, Offices	-	300	-	-	-	-
Workshop, Store	-	350	-	-	-	-
Ventilation	-	-	100	-	-	-
Surface Conveyors, Bins	-	150	-	-	-	-
Mobile Equipment	20	180	300	-	-	-
Rail Car Loader	-	150	150	-	-	-
Miscellaneous	-	500	500	-	-	-
Underground Equipment						
Underground Mine No. 1						
No. 1 Unit	-	-	1,250	-	1,250	-
No. 2 Unit	-	-	-	-	-	-
Other Equipment	-	-	200	400	250	200
	1,720	5,230	4,100	400	1,500	200

TOTAL CAPITAL (excluding interest) $13,150,000

CAPITAL COST SCHEDULE - SCHEME 2

1,000's of Dollars

Item	1977	1978	1979	1980	1981	1982
Pre-Production Expense	1,000	1,000	500	-	-	-
Surface Facilities						
Power Supply No. 1	500	1,000	-	-	-	-
Power Supply No. 2	-	-	500	1,000	-	-
Bathhouse, Offices - No. 1	-	300	-	-	-	-
Bathhouse, Offices - No. 2	-	-	-	300	-	-
Workshop, Store - No. 1	-	350	-	-	-	-
Workshop, Store - No. 2	-	-	-	350	-	-
Ventilation - No. 1	-	-	100	-	-	-
Ventilation - No. 2	-	-	-	-	100	-
Preparation Plant	200	1,600	1,000	-	-	-
Mobile Equipment	20	180	300	250	250	-
Rail Car Loader	-	150	150	-	-	-
Miscellaneous	-	500	500	500	500	-
Underground Equipment						
Underground Mine No. 1						
No. 1 Unit	-	-	1,250	-	-	-
No. 2 Unit	-	-	-	1,250	-	-
Other Equipment	-	-	200	850	-	-
Underground Mine No. 2						
No. 3 Unit	-	-	-	-	1,250	-
No. 4 Unit	-	-	-	-	-	1,250
Other Equipment	-	-	-	-	200	850
	1,720	5,080	4,500	4,500	2,300	2,100

TOTAL CAPITAL (excluding interest) $20,200

ECONOMIC SUMMARY OF PROJECT - SCHEME 1

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986 to 1994
Production - Long Tons x 1000	-	-	504	672	840	840	840	840	840	-
Sales - Long Tons x 1000	-	-	378	504	630	630	630	630	630	-
Revenue at $63 per Long Ton	-	-	23,814	31,752	39,690	39,690	39,690	39,690	39,690	-
Total Operating Costs at $41	-	-	15,498	20,664	25,830	25,830	25,830	25,830	25,830	-
Gross Profit	-	-	8,316	11,088	13,860	13,860	13,860	13,860	13,860	-
Pre-Production and Capital	1,720	5,230	4,100	400	1,500	200	-	-	1,250	1,250
Interest at 10%	172	712	1,193	-	-	-	-	-	-	-
Outstanding Debt	-1,892	-7,834	-4,811	-	-	-	-	-	-	-
Balance - Cash Flow Before Tax	-	-	-	+5,877	+18,237	+31,897	+45,757	+59,617	+72,227	181,857

ECONOMIC SUMMARY OF PROJECT - SCHEME 2

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986 to 1994
Production - Long Tons x 1000	-	-	168	336	504	672	672	672	672	-
Sales - Long Tons x 1000	-	-	126	252	378	504	504	504	504	-
Revenue at $63 per Long Ton	-	-	7,938	15,876	23,814	31,752	31,752	31,752	31,752	-
Total Operating Costs	-	-	5,166	10,332	15,498	20,664	20,664	20,664	20,664	-
Gross Profit	-	-	2,772	5,544	8,316	11,088	11,088	11,088	11,088	-
Pre-Production and Capital	1,720	5,080	4,500	4,500	2,300	2,100	-	-	-	-
Interest at 10%	172	-	-	-	-	-	-	-	-	-
Outstanding Debt	-1,892	-7,668	-10,886	-10,826	-5,291	-	-	-	-	5,000
Balance - Cash Flow Before Tax	-	-	-	-	-	3,697	14,785	25,873	36,961	120,665