

895012

ERICKSON CREEK PROJECT

PROSPECTUS

Erickson Gold Mining Corp.

Dr. J. M. Black, P. Eng

PREPARED FOR

DEPUTY MINISTER OF MINES

PROVINCE OF BRITISH COLUMBIA

BY

ERICKSON GOLD MINING CORP.

203-1209 East 4th Street, North Vancouver, B.C.
April, 1978

CONTENTS

	<u>Page</u>
SUMMARY	1
HISTORY	2
CURRENT SITUATION	3
LOCATION AND ACCESS	3
KEY MAP	4
TOPOGRAPHY	5
PROPERTY AND OWNERSHIP	5
RECENT EXPLORATION	6
GEOLOGY	7
JENNIE VEIN	8
ORE	9
RESERVES	10
POTENTIAL RESERVES	10
LIFE OF MINE	11
FUTURE WORK	12
MINING	12
ORE DRESSING AND MILLING	13
ROADS	16
TRANSPORTATION	16
ECOLOGY	16
POWER	17
FLORA AND FAUNA	17
BENEFITS TO ECONOMY	18
MAPS	
1:250,000	
1:5,000	
1:1,000	
PHOTOGRAPH	

SUMMARY

Exploration of the Jennie vein has been successful in indicating a substantial tonnage of high-grade ore running over 1 oz. gold per ton. Moreover it has been shown that this is a strong vein and much of it is ore. More exploration is expected to increase reserves because the vein continues beyond the section explored.

The exploration has been accomplished by a cross-cut to the vein and drifts along it and by many drill holes some from the surface and some from underground.

The ore will be mined underground and this will cause a minimum disturbance of the surface. Ore dressing tests show that a high recovery can be obtained by conventional milling procedures.

More than one half of the gold is free and after a comparatively coarse grind, can be recovered, with its alloyed silver, in a jig. This jig concentrate contains an appreciable proportion of coarse quartz etc. particles and it can be cleaned in a sluice. The superconcentrate so produced will be very small and it can be melted in a crucible furnace and the gold and silver recovered directly. No cyanide or mercury is to be used.

The remainder of the gold together with the rest of the silver and some copper will be recovered in a flotation concentrate. Minor chemicals used in this process will be moderately alkaline and the tailings will be slightly alkaline. This will have a buffering effect on the swamp that is to become the tailings disposal area.

The area used for the tailings disposal will amount to about 2.2 hectares or 5.5 acres.

A somewhat narrower vein, the Agnes, near the Jennie, also of good grade, has been intersected near the surface. Also a sulphide bearing volcanic occurrence containing commercial amounts of gold has been found.

HISTORY

The Jennie vein is exposed near Erickson Creek. It was found in 1935 and at that time the Agnes and Jennie claims were located. In the next two years the vein was explored by trenches and in 1937 by drilling. Most of the holes did not reach the vein. A cross-cut driven towards the vein also did not reach it. About 130 tons were mined from trenches and milled.

The F.G. #1 and F.G. #2 claims were acquired in 1974 by The Agnes and Jennie Mining Co. Ltd. and exploration was started by sampling, trenching and soil sampling. In 1975 seven percussion holes were drilled and three diamond drill holes with encouraging results. Exploration continued in 1976, with eighteen closely spaced diamond drill holes which indicated a high grade ore-shoot running 1.8 oz. gold per ton and 1.6 oz. silver per ton across an average thickness of 2.17 metres.

In 1977 a cross-cut was driven to the vein and drifts were driven along it. From the workings an additional twenty-six holes were drilled. These outlined the lower edge of the shoot found by the surface drilling. Following this an extensive drill program from the surface, found three more ore shoots and showed that the vein continued westward and downward.

Late in 1977 and continuing into early 1978 the western drift was advanced. It exposed six lengths of ore and demonstrated that a high proportion of the vein is ore. Length of the workings is 416 metres or over $\frac{1}{4}$ mile.

From time to time additional claims have been located, purchased and optioned and the property is now extensive.

CURRENT SITUATION

A mill with a capacity of 120 - 150 tons per day is being purchased. Planning for mining and milling is underway.

Prior to completion of the mill, development work will be resumed in order to have stopes ready for mining.

Stoping will start in the No. 1 shoot. This is exposed at the surface and in the drift and has been intersected by 22 drill holes between these exposures. It has a large enough reserve of drill indicated and proven ore to repay the capital costs and working capital required to bring the mine into production and provide a surplus.

LOCATION AND ACCESS

The property is south of McDame Lake. It is about twelve kilometres southeast of the mining community of Cassiar, N.T.S. map # 104 P/4/5.

It is accessible from the Stewart - Cassiar highway which passes just north of McDame Lake. By road from the highway to the proposed mill site is about two kilometers and to the Jennie vein about another five kilometres.

p4 ~~Location~~ Map

TOPOGRAPHY

The Jennie vein outcrops at 1450 metres elevation on a steep slope. This is covered except near Erickson Creek, by boulder clay to a depth of as much as ten metres. Into the boulder clay minor gullies have been eroded. However these are not deep enough to expose bed rock.

About 1500 metres north of the vein, at about 1000 metres elevation, the slope abruptly lessens. The lower part of the property is on the floor of McDame Valley. This has a subdued topography with only a few low rock ridges and fluvioglacial deposits rising above the general level. Much of the valley floor is poorly drained and extensive areas are swampy. This partly drained area is cut off from McDame Creek by a line of rock ridges and fluvioglacial deposits.

PROPERTY AND OWNERSHIP

The property including optioned ground is extensive and covers approximately eight square miles.

In 1976 Nu-Energy Development Corp. acquired from The Agnes & Jennie Mining Co. Ltd. the right to earn a one-half interest in the property, and has done so. The property is now managed by Erickson Gold Mining Corp. which is owned equally by The Agnes & Jennie Mining Co. Ltd. and Nu-Energy Development Corp.

RECENT EXPLORATION

About \$700,000.00 has been spent in the last few years on the exploration and development of the property.

Early in 1977 a cross-cut was driven southwards about sixty metres below the vein outcrops. It reached the vein 193 metres from the portal, at which point the vein carries free gold. The cross-cut was advanced an additional thirty-six metres. At that time the vein was followed eastward and westward. These drifts plus a series of drill holes from these underground workings outlined the lower-edge of the shoot found higher up. One intersection much farther west contained free gold. This ore shoot No. 1 including the lower grade section in the drift runs 1.31 oz. gold per ton and 1.33 oz. silver per ton across 1.43 metres.

In the summer of 1977 surface drilling was resumed. Five drill holes cored a western occurrence found by an underground drill hole, called shoot No. 2. In addition two more shoots called No.'s 3 and 4 were found farther west. This drilling showed that the Jennie is a major vein that continues westward and downward. The grade of the shoots based only on drill intersection is as follows:

No. 2 : 1.39 oz. gold per ton and 0.66 oz. silver per ton,
across 1.15 metres.

No.'s 3 & 4 : (combined) 1.82 oz. gold per ton and 2.53 oz. silver
per ton, across 0.68 metres.

At the same time one claim group was purchased and another one optioned. Both are near McDame Lake. Magnetometer and E.M. surveys were made over this newly acquired ground and much of the rest of the property.

An E.M. conductor near a magnetic anomaly was explored by drilling. A sulphide bearing zone in volcanics was cored which runs 0.31 oz. gold per ton and 0.2 oz. silver per ton across 2.7 metres. Exploration of

this was not continued, because the drill had to be used in the exploration of the Jennie vein. Another zone cored in an earlier hole ran 0.532 oz. gold per ton and 0.2 oz. silver per ton across 80 centimetres.

Other veins were sampled and drilled and selected areas were soil sampled.

In the latter part of 1977 and for the first two weeks of 1978, drifting westward on the Jennie vein was resumed. The total length of the drifts is now 188 metres or 617 feet. This westward drift exposed six new lengths of ore, of which two appear to be part of the No. 2 shoot. The average grade of these six lengths is 1.05 oz. gold per ton and 0.703 oz. silver per ton across an average width of 1 metre. This drift shows that about forty-five per cent of the vein is ore at this level.

GEOLOGY

The area is underlain by interbedded sedimentary and volcanic rocks. Near the vein these are mostly argillites and tuffs. They are mostly thin bedded. They grade into each other. However they also tend to be in groups separate from each other. In addition there are a few quartzites and flows. Some of the sediments are silicious and some of the volcanics are talcose.

These rocks are cut by gabbroic and andesitic dykes. These strike westward about parallel to the Jennie vein. One fine-grained andesitic dyke, about 60 centimetres wide occurs alongside the Jennie vein for most of its explored length. In places it splits the vein. Towards the west it diverges from the vein and several dykes are present.

Locally the structure is complex. Generally groups of beds appear to dip gently northwards.

JENNIE VEIN

The vein is comprised mostly of white and grey quartz, which are of different ages, and minor carbonate. Within the vein are dark films or septa, probably composed of particles of black argillite. These septa are parallel to the walls and give a ribboned appearance to the vein.

The vein strikes westward. Near Erickson Creek it dips steeply northward. Towards the west it dips less steeply and in the extreme west about 35°.

The ore minerals are pyrite, tetrahedrite, chalcopyrite and minor sphalerite, galena and free gold. Small amounts of malachite and native copper occur.

The vein ranges in thickness from a few centimetres to as much as 9 metres. In places it splits and encloses wall rock. Some of the walls are smooth fault surfaces, and in places the vein is sliced by late faults parallel to the walls. Locally the vein curves. It is persistent throughout its explored length and is not disrupted by any major breaks. The walls stand up well without support.

For much of its exposed length, the vein and accompanying dyke occur at the contact between a predominantly argillaceous group of beds and a predominantly tuffaceous group. In the east both walls are argillite and in the west both walls are tuffaceous.

The vein averages about 1 metre in width. It has been explored along strike for 275 metres and continues beyond this length in both directions. It has not been explored to the surface in the west. If it extends to the surface, as it is likely to do, it has a dip length of 300 metres and as far as is known continues downward below the deepest drill intersection.

ORE

The drifts along the vein have exposed 7 lengths of ore. They show that these ore sections occur fairly regularly. These lengths comprise about 45% of the length of the drift. This is a high proportion. The average grade in the 7 sections is 1.066 oz. gold per ton and 0.653 oz. silver per ton across a width of 97.8 centimetres.

The level was driven because of ease of access and not for any consideration of favourable geology. Therefore the drifts can be considered a random sample along the vein. If so it may be expected that elsewhere in the vein an equally high proportion of ore may be found.

Exploration of most of the ore exposed in the drifts has not been completed and the shape, rake and extent of the several ore shoots has not been determined.

Three core intersections exposed by the west drift, each ran appreciably lower than samples from the face of the drift nearest them. This is an indication that results from the cores are low. The tetrahedrite is friable, and it is likely that some of the fine tetrahedrite particles separate during drilling and are not recovered with the core. In the tetrahedrite and closely associated with it are fine gold particles and probably some of these are also not recovered. Therefore it appears probable that the vein, at some of the other intersections which reported below ore grade, actually is of ore grade.

RESERVES

The No. 1 shoot is known best. It is exposed at the surface and in the drifts and it has been cored in 24 holes though its lateral extent has not been determined. (The reserve is partly proven and partly drill indicated). Within the partial limits it contains about 17,200 tons of grade 1.31 oz. gold per ton and 1.33 oz. silver per ton.

Near the surface the Agnes vein was cored. It is close to the Jennie and parallel to it. Within present limits it contains about 1,500 tons of drill indicated ore with grade as follows, 0.534 oz. gold per ton and 1.72 oz. silver per ton across a width of 0.84 metres.

No. 2 shoot is also partly outlined. It has been cored in 5 holes and is exposed in 2 separate sections in the drift. It is partly proven and partly drill indicated and is estimated to contain 4,200 tons of grade 1.42 oz. gold per ton and 0.8 oz. silver per ton.

On surface dumps there is about 1,000 tons of development muck. This comprises vein and wall material from ore grade sections. This surface reserve probably runs about 1/3 of the grade of ore in the drift, probably 0.35 oz. gold per ton.

The total ore reserve in the vein is 22,900 tons, containing 1.29 oz. gold per ton and 1.25 oz. silver per ton or a total of 29,500 oz. gold and 28,750 oz. silver.

POTENTIAL RESERVES

In the west, No.'s 3 and 4 shoots are known only from widely spaced drill holes and not enough data is available on their shape and extent to calculate indicated reserve. Likewise the several lengths of ore in

the drift, cannot be used to outline ore shoots until more data is available.

The grade and width of drill and drift samples are comparable to those in the eastern shoots. The lengths of ore in the drift and the distribution of the core intersections are also comparable and this suggests that the potential ore in the west is roughly equal to that in the east, that is about 22,000 tons. Therefore the total ore, in that section of the vein explored thus far, including potential ore, is about 45,000 tons.

This total is not the ultimate tonnage that may be developed in the known length of the vein. The upper part of the vein, for $2/3$ of the length has not been explored. Also the part of the vein below the creek outcrops and the vein generally at depth has not been explored.

About 45% of the vein exposed in the drift is of ore grade. If this proportion prevails throughout the vein to the limits so far explored, the potential additional tonnage will be substantial.

The vein is expected to continue beyond presently known limits, possibly as far as the geology is favourable. If any extensions comprise a similar high proportion of ore the ultimate reserve may be very substantial.

LIFE OF MINE

The present reserves can be mined in about half a year. The potential reserves probably can be proven and mined for the rest of the first year. The possibility for finding additional ore within the known length of the vein is good. And so it is within any extension of the Jennie vein. This also applies to any similar veins that are found in unexplored parts of the property.

In addition a gold occurrence found last year, as noted before, is of a different type, and has not been explored. It may also prove to contain ore.

Mining can be expected to continue for some years.

FUTURE WORK

Exploration along the strike and down the dip of the Jennie vein has a high priority. This work will include drilling as well as exploration and development from the present level. As a result of this work it will be possible to determine where other levels need to be established. Probably one will be needed at a higher level and probably more than one at lower levels.

MINING

Present workings comprise a cross-cut to the vein and drifts along it. The vein here is nearly vertical. The lower edge of No. 1 shoot is exposed in these drifts and it is planned to mine it first in shrinkage stopes. A development raise will be driven. This will be followed by production raises and a sub level.

LHD equipment has been used so far. Careful consideration is now being given to laying rails and using mucking machines and cars pulled by a battery driven locomotive.

ORE DRESSING AND MILLING

A complete flotation mill with a capacity of 120 - 150 tons per day is being purchased. In addition a jig and a sluice are being added.

Ore dressing tests have been carried out by Bacon and Donaldson. Most of this work was done on a sample comprising rejects from 27 face samples taken from the west drift. This composite sample was calculated to run slightly over 1 oz. gold per ton, about the same as the predicted mill feed.

Similar tests are now being run at Lakefield Research.

Over $\frac{1}{2}$ of the gold is recovered in a jig concentrate. This is accompanied by about 30% of the silver, which presumably is naturally alloyed with the gold, in a ratio of about 4 gold to 1 silver.

This jig concentrate contains coarse particles of quartz and rock and it is planned to remove much of this lighter material by running the concentrate over a sluice. This will recover most of the gold (and its alloyed silver) as a superconcentrate. This will be small and can be melted in a crucible furnace. No mercury or cyanide will be used. The gold (and silver) will melt and sink and the remainder of the charge will form a slag which will float on top.

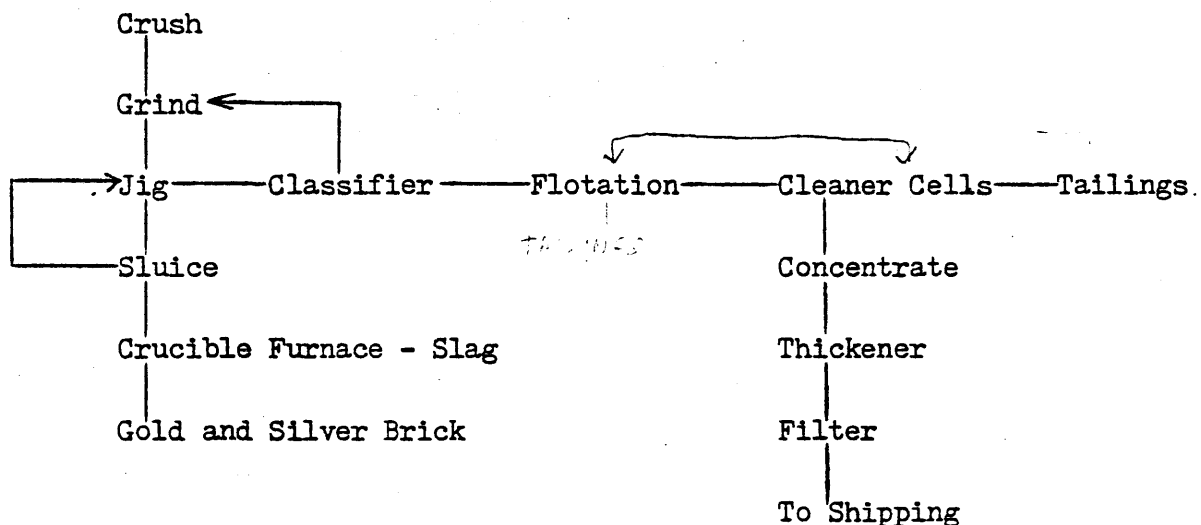
The overflow from the sluice will be returned to the jig.

The tailings from the jig run about $\frac{1}{2}$ oz. gold per ton. This gold comprises very fine particles of native gold and gold associated with sulphides. One test, in which the sample was 22.3% minus 200 mesh and 45.6% plus 100 mesh produced a high grade concentrate that weighed only 1.1% of the weight of the original feed. This is a high ratio of concentration,

that is about 90:1 and makes possible low transportation charges. In this test the overall gold recovery was 97%. In other tests, with a somewhat lower concentration ratio, a recovery of 98.6% of the gold was achieved.

The flow sheet is as follows:

Chemicals: Soda ash and lime,
#3477 and Aerofroth 65
or Dowfroth 250



Water will come from a well in the swamp. Heat will be from oil burners.

Tailings will be pumped to the disposal area, located as shown on map and photograph. This is an area which is poorly drained and is a natural swamp. This will be adequate for the tailings from all the ore that may be expected to be found in the part of the vein so far explored. A low section of the road will be built up.

A short section of a very small stream, some of whose water gets into the swamp will be diverted to keep it all west of the road.

The swamp is in a slight natural depression in a gentle slope. The ground water level is close to the surface most of the year. This is because the overburden is almost impermeable and does not permit the absorption of much water.

The area, the margin of which has been explored by exploration trenches, is underlain by boulder clay. This area is separated from McDame Creek by low rock ridges and some fluvioglacial deposits so the natural drainage is eastward rather than northeastward. Water from this area does not reach McDame Creek till it reaches a point over 2,000 metres (or about $1\frac{1}{4}$ miles) to the east.

The area is covered with brush, a few small trees and moss and has a very gentle gradient. Any of the tailings liquid that seeps into the swamp will be completely clarified and neutralised long before it passes through this great length of moss.

The site at the location shown for the tailings dam will be cleared of organic matter, to expose the fresh overburden. Boulder clay will be pushed up to a height of 2 metres to make the dam.

The ore is hard and will not form much slime. It is expected that the tailings will separate readily. This will permit the water to be recycled.

Because the floor of the pond is largely impermeable, little seepage will take place. Any that does will have no adverse affect on the environment. The tailings will be slightly alkaline and the effect of this will be to neutralize the natural acidity of the swamp.

ROADS

Most of the area in the vicinity of the Jennie vein is accessible from the present network of roads. About 200 metres needs to be relocated. A short road will be built from the present road to a point below the portal, where ore can be loaded from a storage bin. Another short road will be needed to reach the top of the hill where the mill is to be put. These total about another 200 metres.

TRANSPORTATION

From the portal ore bin, ore will be trucked over present roads about five kilometres to the mill. The sulphide concentrate will be accumulated until a truck load is made up. This will be trucked via the Cassiar - Stewart highway to Stewart or to Terrace, depending upon the location of the smelter to which the concentrate is destined.

Tailings will be piped to the nearby disposal area.

ECOLOGY

Plans for protecting the environment ensures that it will not be damaged.

It is proposed to have sampling points in the water courses below the mine and below the mill and camp. At these points water will be sampled periodically, starting before the operation begins. These samples will be assayed for anything that may affect the environment adversely.

Fuel tanks will be on raised ground surrounded by a dry moat.

The camp and mill will have a septic tank and cess pool and waste from these sources will be broken down by bacterial action and the effluent will be dispersed in an extensive gravel bed.

The tailings will fill a natural depression which is now a swamp. It is believed that to the extent that the level is raised and the drainage improved, that the tailings will have a beneficial effect on the flora, and that this site will support later a fair stand of trees.

POWER

Power will be developed from a diesel generator plus a standby unit. Possibility of developing power from a wind mill on top of Table Mountain is to be investigated in the future.

The crucible to melt the superconcentrate will be heated with propane.

FLORA AND FAUNA

The entire property is on the north slope of Table Mountain. The upper part is above timberline. The central part is covered with scrub timber and brush. The lower part is on the valley floor. Much of it is swampy and is covered with moss, grass, brush and a few small trees. Elsewhere there are fair stands of small trees.

In numerous trips to the area, including one thirty years ago, no game animals have been seen. A few chipmunks, squirrels and rabbits have been seen. Since it is on the north slope of a high mountain, it gets very limited sunshine and is not a good feeding ground.

BENEFITS TO ECONOMYa) EMPLOYMENT

A total of 25 will be employed at the property and one at the office. In addition, consultants will be required re exploration, mining and ore dressing. According to a report referred to in the Vancouver Sun, March 18, 1978, the northwest part of British Columbia has particularly high unemployment and more employment is largely dependent on the mineral industry. The secondary effect will be typical of such an industry inasmuch as service and supply industries will benefit and will also increase employment.

b) PURCHASES

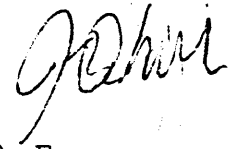
Since no supplier of power is available it will need to be generated. This will require large purchases of diesel oil. In addition all the other requirements of the mine, mill and camp will be bought.

c) Large capital purchases will be made for the mine, mill and camp.

d) The concentrate will be hauled by commercial transport, providing more employment.

e) The production of gold and silver, which are in strong demand will return to Canada much needed foreign exchange that is required to pay for many manufactured imports. Production therefore will help reduce Canada's trade deficit.

f) The area is abundantly mineralized. Many mineral occurrences are known. Some have been explored intermittently. Others almost certainly exist and will be found. This process of discovery probably will be speeded up by the presence of a metal mine in the area. Prospectors will be able to bring in specimens for examination and this will encourage them.



J. M. Black, P. Eng.

Consulting Geologist

April 12, 1978