Banbury Gold Mines Ltd.
302-540 Burrard Street, Vancouver B.C. V6C 2K1 (604) 688-0601

Gentlemen:

This report has been prepared by the Management of Banbury Gold Mines Ltd. The Company has drawn freely from the advice of several professionals, and has used papers and written opinions authored as far back as the turn of the century.

Charles Camsell	-	Geologist
Victor Dolmage	-	Geologist and Engineer
Arthur Lakes	-	Mining Engineer
James E. McCloskey	-	Geologist
B.W.W. McDougall	-	Mining Engineer

had all written reports about the Company's property, and while these gentlemen are all now deceased, much of this report has been derived from their efforts.

The sections of this report dealing with the chemistry of cyanidation were taken verbatim from a report called, "Processing Gold Ores using Heap Leach Carbon Adsorption Methods".

This report was authored by:

H.J. Heinen	-	Metallurgist
D.G. Peterson	-	Metallurgist
R.E. Lindstrom	-	Chemical Engineer

In addition, the Company is indebted for the advice given by W.L. Puckering, P. ENG. (Chemical) and a director, of the Company,

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Respectfully Submitted,

Douglas A. Dewar
President

BANBURY GOLDMINES LTD.

STAGE I SUBMISSION

TO

The Chairman of the Steering Committee

of the

Environment and Land Use Technical Committee

Dated: Jan 26th 1982

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OVERVIEW

Banbury Gold Mines was incorporated in 1978. After three years of diamond drilling and exploration of their gold property near Hedley, the company now wishes to proceed with the mining and processing of ore at the rate of one hundred to three hundred tonnes per day.

The process presently contemplated will consist of crushing the ore to a coarse size + 1/4" followed by percolation leaching. Process liquids will be recycled for zero or minimum discharge of treated liquid effluent. Solids after washing may be marketed as "clean" aggregate or returned to mine workings.

This report addresses all of the operating and environmental variables for your consideration.

THE COMPANY:

Banbury Gold Mines Ltd. was incorporated under the British Columbia Companies Act in 1978. Five million shares of no par value common stock were authorized, and one million seven hundred and sixty-five thousand shares are presently issued and outstanding. The Company enjoys a Resource Listing on the Vancouver Stock Exchange. "Banbury" is a Canadian Company in every sense of the word. The Officers of the Company are:

DOUGLAS A. DEWAR	-	PRESIDENT
KENNETH A. GRACEY	-	SECRETARY

The Directors of the Company are:

RONALD S. DEANS	-	WEST VANCOUVER, B.C.
DOUGLAS A. DEWAR	-	WEST VANCOUVER, B.C.
KENNETH A. GRACEY	-	VANCOUVER, B.C.
WILLIAM L. PUCKERING P. Eng.	-	VANCOUVER, B.C.

The Company was formed with the intention of taking over and reviving the "Gold Mountain" Claims near Hedley, British Columbia (see site location map page A1).
At the turn of the century these claims had been worked as the Pollock Mines. In the period 1932 to 1937 they had been worked as "Gold Mountain Mines Ltd.". No work had been done between 1937 and 1978 of any consequence.
A sixty ton per day flotation mill was constructed on the property in 1936. This mill was closed down in 1937 for economic reasons.

1. MINE SITE LOCATION:

Hedley is the centre of the once famous "Hedley Gold Camp" which boasted two of British Columbia's most prolific gold mines. These were the Nickel Plate and the Hedley Mascot Mines. Today the town's population of about 500 is made up of a high percentage of retired people. Two cafes, one service station, one auto court and one general store, represent the industrial, commercial base. A small saw mill operates intermittently as well.

2. DESCRIPTION OF CLAIMS:

Banbury Gold Mines Ltd. hold contiguous properties as follows:

1. Six (6) Crown Grant Claims;
2. Sixteen (16) located claims;
3. One (1) six (6) Unit grid claim.

These claims are located about two miles south west of Hedley, British Columbia and are on the south side of the Similkameen River. The mining claim area covers part of the valley floor elevation 1,800 feet, (548.6 M) to the 4,200 foot, (1,280.1 M) level in the mountains. The Crown grant claims have record numbers as follows:

L - 43S, L - 44S, L - 45S, L - 46S, L - 3356, L - 3551.

The located claims are recorded as:

Pine Knot 601 (12)	Gene - 1597
Pine Knot 602 (12)	Bert - 1596
Pine Knot 3 - (831) (9)	Kev - 1485

Pine Knot 4 - (832) (9)	Tony - 1484
Pine Knot 9112P	Chas - 1599
Pine Knot 9113P	Sam - 1600
Pine Knot 9114P	Sid - 1598
Pine Knot 9115P	
MAC 1 B-30894	

The six (6) unit grid claim is recorded as Mike - 353 (8). All claims not yet legally surveyed, will be surveyed during 1982.

3. PROJECT DESCRIPTION:

Banbury Gold Mines Ltd. would like to open a gold mine in the production range of one hundred to three hundred tons per day. Mining plans would include driving a tunnel of about 2,000 feet (609 M) from the valley floor (see site plan page A2). This tunnel would be drilled in a southerly direction with the intention of intersecting the Pine Knot and Maple Leaf Veins at depth. Mining would be accomplished by raising and shrinkage stoping. The existing workings on the Pine Knot and Maple Leaf Veins would be used for additional access and egress, as well as flow through ventilation. Present plans are for the recovery of the gold from the ore by coarse grinding and percolation leaching. To do this, a coarse ore bin would be constructed. The coarse ore would be fed to a jaw crusher which in turn would feed a short head cone crusher. At this point the ore would have been reduced to a half inch (1.27 cm) minus or less, and would be directed to a fine ore surge bin. The fine ore bin would be elevated in a manner permitting gravity loading of a dump truck. The truck in turn would transport the ore a short distance to one of the leach pads. Prior to dumping its load, the truck would be weighed so that accurate measurement of mine tonnage could be obtained. The percolation leach pads would be constructed of asphalt and designed to facilitate the leaching of at least a thousand tons of ore at one time.

4. PROJECT SCHEDULE:

The schedule Banbury Gold would like to follow would see a full start by August, 1983. Subject only to financing, the tunnel could be finished in the latter part of 1982 and the leaching facilities made operational by June of 1983.

PHYSIOGRAPY:

Hedley lies in the Similkameen Valley, approximately equidistant between the towns of Princeton and Keremeos. The mountains of this area are part of the Okanagan Range which may be more generally known as the "Cascade Mountain System". To the west of the Similkameen Valley lies the Hozameen and Skagit Mountain system. Between the Okanagan Mountains on the east, the Hozameen, and Skagit Mountains on the west lies the southern end of the great interior plateau region of southern British Columbia.

The latitude of the Hedley area, is about forty nine degrees, twenty five minutes. The plateau has a width of about 50 miles, (80.4 Km) quickly increasing, however, to the north. Almost exactly half way between these two ranges, in this latitude, lies the Princeton Depression, toward which all slopes from the east, south and west converge downward. In this depression, the two main streams of the district unite, the Similkameen River flowing in from the south, and the Tulameen River flowing in from the west. The united streams then turn eastward and slightly southward toward the Okanagan Mountains, flowing on a rather steep down-grade against what is, on the higher surface level, an up-grade, and cutting a deeper and deeper valley through these mountains, until they join the Okanagan River just at the international boundary line.

Northward of the Similkameen River and the Princeton Depression, the interior plateau region stretches away for hundreds of miles into the northern part of British Columbia, entirely unbroken by any notable mountain ranges.

LOCAL:

The Hedley area lies on the western flank of the Okanagan Range, and only about six or seven miles (9.6 or 11 km) from its crest line. Its topography is neither that which is characteristic of a mountain region, nor is it typical of the plateau region as a whole, but it unites features which are found in both. Its higher levels are somewhat above the average of the plateau region, yet these upper levels simulate in a general way the upper levels of the plateau. The streams, however, cut deeply into this surface, giving a vertical relief of about 5,000 feet (1,524 M), that, from the valley bottoms, an impression of mountain topography is conveyed.

DRAINAGE:

The general slope of the whole country in and adjacent to the Hedley District, is towards the west, that is to say, towards the Princeton Depression and away from the crest line of the Okanagan Range. In spite of this, the Similkameen River flows in an exactly opposite direction, or towards the east, and cuts directly through the whole Okanagan Range. If one follows down the course of the stream eastward from the basin-like depression at Princeton, it is noticed that the banks of the valley rise higher and higher, and become proportionately steeper, until the axis of the range is passed through; then there is a sharp descent of the uplands to the valley of the Okanagan River. There is no reason to believe that the origin of the Okanagan Range is different from that of the rest of the Cascade System, and it is very probable that the separate ranges which make up the Cascade System acted as a unit, and have a like history.

It appears that there must have been a valley existing on the present line of the Similkameen Valley, previous to the uplift of the Okanagan Range, otherwise it is difficult to account for the way in which the stream now flows eastward through this range out of the low lying Princeton Depression, and against what is, on the higher levels of the country, a strong upgrade. The general level of the Princeton Depression is not more than 3,000 feet (914.4 M) above sea level, while the notches in the Okanagan Range are generally somewhat over 6,000 feet (1,828.8 M). It is believed therefore, that the Similkameen Valley existed in its present course previously to the uplift of the Okanagan Range, and that this uplift was of such a slow and gradual nature that the erosive forces of the stream were strong enough to keep pace with it, and never at any time rapid enough to dam back the stream or affect its course. There is no evidence to prove that the uplift was so rapid as to materially change the course of pre-existing streams, except perhaps those of small volume. If such were the case, the waters of the Similkameen and Tulameen Rivers could readily have found an outlet north from the Princeton Basin into the Nicola River system, for the divides here are very much lower than those of the Okanagan Range. It is concluded therefore, that the formation of the Similkameen Valley antedates the Pliocene uplift of the Okanagan Range, and the stream is consequently an antecedent stream.

GRADES:

The grade of the Similkameen River is fairly uniform throughout the portion of its length in and adjoining the Hedley District. The difference in elevation of the bed of the stream between Hedley and Princeton is 440 feet (131.1 M). This is a distance of 25 miles (40.2 km) and gives an average grade of almost 19 feet (5.79 M) to the mile. Below Hedley, if there was any variation in this grade, it is not noticeable to the eye.

A characteristic of all the tributaries of the Similkameen River in the neighborhood of Hedley, is the sudden steepening of the grades, shortly before entering the main valley. Henry Creek which cuts through the mineral claims held by Banbury Gold Mines is very typical in this sense. The creek appears to follow a fault zone and at times becomes entirely subterranean only to reappear again in a few hundred yards (meters). The overall volume of the creek is small. Henry Creek contains no fish at all because of its natural intermittent form.

RELIEF:

The elevation of the highest point of the Hedley District is 6,600 feet (2,029.9 M) above sea level, that of the lowest point is 1,560 feet (475.4 M), so that there is a total vertical relief of 5,100 feet (1,554.4 M). The rounded outline of the higher levels represents an older cycle of erosion, antedating the late Pliocene uplift and probably to be referred to the Eocene Peneplanation; while the lower levels are the result of a second cycle, when increased power of the erosion had been given to the stream by uplift of the interior plateau region, and warping of the Okanagan Range.

CLIMATE:

The climate of that portion of the Similkameen District in which Hedley is situated is a very pleasant one. As the region, however, is one of rather strong relief, the variations of temperature and precipitation between the bottoms of the valleys and the higher portions are very marked even at points not far separated from each other. Tests done between 1904 and 1908 at the top of Nickel Plate Mountain indicate that the annual precipitation at the top of the mountain was twice that of Hedley itself which is in the valley. The actual annual rain fall at the top of the mountains was 21.82 inches verses 10.79 inches at Hedley. The records produced by the Canadian Department of Transport for the year 1967 verify these earlier figures. The greatest precipitation in the Hedley area comes in the months of May and June, while no particular month can be said to be markedly drier than the other. Very little snow ever falls in the bottom of the Similkameen Valley from Hedley eastwards, so that the total precipitation there must mostly be charged to rain. On Nickel Plate Mountain, snow is known to fall every month of the year.

The climate of Hedley is distinctly a dry one, and the town must be considered to form part of the dry belt of British Columbia which lies along the eastern flank of the Coast Range of Mountains. The cause of this dry character is found in the fact that the high and wide coast range intercepts all the moisture carried eastward from the Pacific Ocean by the prevailing westerly winds.

Temperatures at Hedley have a wide range, though the mean for the whole year is about 45 degrees fahrenheit (7.2 C). The summer mean is about 60 degrees fahrenheit (15.5 C). The months of July and August are very hot, and the temperature occasionally goes up to 100 degrees (37.7 C) in the shade. The winters are never very cold, although it sometimes reaches 15 degrees F. below zero (-9.4 C). The average barometric pressure for the year for the elevation of 1,600 feet (487.6 M) above sea level is about 29.95 inches.

<u>VEGETATION</u>:

Taken as a whole, the country is well wooded though not thickly. The southern slopes of the hills are frequently quite open and grassey, and when wooded have an open and parklike appearance. The northern slopes are always timbered, and the eastern and western generally so. The common trees are the yellow pine, fir, blackpine, the aspen, the spruce and balsam with some cedar and birch. The range land of the area consists primarily of bunch grass (agropyron spicatum) and pine grass (Koeleria Cristata). The land surface of the claims of Banbury Gold Mines Ltd. are fairly lightly treed primarily with fir, except along the bank of Henry Creek where vegetation is thicker. The area remains unlogged and generally unused because of its steep topography.

FISHERIES:

The head waters of the Similkameen River are in the coast range approximately equidistant between Hope and Princeton. The river flows generally easterly and is joined by the Tulameen River at Princeton. The river then follows a south-easterly course flowing down through Hedley, then past Keremeos, and eventually joining the Okanogan River in Washington State. The Okanogan River continues southward and ultimately joins the Columbia River. The major species of fish that enter the Similkameen and Okanogan water sheds from the Columbia River System are:

1. the rainbow trout
2. the kokanee
3. the northern squaw fish
4. the large mouth bass
5. the red side shiner
6. the yellow perch
7. the prickly sculpin
8. the lake chub

The carp is also a resident in this water shed but was introduced to the area about 1917. Of these nine species of fish the Similkameen River around Hedley primarily has only three types. The most abundant of these is believed to be a sculpin more commonly known as the "bullhead", with the kokanee and the rainbow trout rounding out the trio. It may safely be said that the Similkameen River is not an important fishing river, neither recreationally or commercially.

WATER QUALITY:

The Similkameen River around the Hedley area is generally a source of high quality water. This water is used extensively for irrigation purposes. Hedley itself draws its water from a well. Many hundreds of people are dependent upon the Similkameen River downstream from Hedley as a source of irrigation and drinking water. It is believed that most people do not use the Similkameen water directly for drinking purposes but rather pump it from shallow wells in the valley.

WILD LIFE:

The wildlife common in the Hedley area is limited to four main types:

1. The mule deer
2. The black bear
3. The mountain goat
4. The mountain sheep

Because these four main types are not in any great abundance in the area, predators are also few and far between. One hears only of the occasional cougar. A small population of jack rabbits and coyotes are also occasionally seen.

LAND CAPABILITY AND USE:

AGRICULTURE

Agriculture around the Hedley area of the Similkameen Valley is restricted to beef production and the raising of hay. The high level plateaus on both sides of the Similkameen River are used as summer grazing lands for the local ranchers' cattle. The properties that Banbury Gold Mines occupy are not normally used for the grazing of cattle. Most of the cattle on our side of the river are driven up the Sterling Creek Road, and by a system of high level feeder roads, eventually reach their summer grazing area. This summer range is generally at a minimum of 4,000 feet (1,219.2 M). The top of our property barely touches this altitude.

FORESTRY

Forestry is an important industry in the Similkameen Valley area. Weyerhaeuser Timber Company have a major saw mill at Princeton. This saw mill is supplied from timber which grows mainly on the higher plateaus. The land above Banbury Gold Mines has already been logged off. The land on the valley floor at the base of our claims was also logged off some years ago. The only timber of merit lies on our Crown Crant Claims. We use this timber for pit props and tunnel timbering.

RECREATION:

The land on which Banbury Gold Mines has its claims has very little use for recreational purposes with the possible exception of hunting. In that most hunters are loathe to walk up steep hills, we have never seen a hunter on our mining claims.

TRAPPING:

There is no trapping in the area where the Company's claims are situated.

GUIDING:

There is no guiding in our area.

HISTORIC AND ARCHAEOLOGICAL SITES:

There are no historic or archaeologically important sites on the mining claims of Banbury Gold Mines. Nor are there any in the immediate vicinity.

EXISTING SOCIAL ENVIRONMENT:

The population of the Hedley area is approximately 500 people. Ranching and the logging industry are the main sources of work in this area. The basic population of Hedley contains a large percentage of retired people. There are only a few service industries which have been previously mentioned. Employment opportunities are generally lacking in the Hedley area. Most young people are forced to leave the area when they become of working age. Housing in the vicinity is generally old and was built at the time the Nickel Plate and Hedley Mascot Mines were producing. Very little new construction has taken place in the last twenty years. Hedley boasts one elementary school. There are no community colleges in the area and anybody seeking an education beyond grade 12 level must leave. Commercial services are generally restricted to the cafes, service stations and a general store. Truck and bus service is, of course, available as Hedley is on the main regional highway.

PROJECT DESCRIPTION:

MILL

We have previously explained that we intend to employ a jaw crusher and a cone crusher to reduce the ore to about a half inch minus. At this point in time the ore would be trucked to impervious asphalt pads each capable of holding approximately a thousand tons of crushed ore. We intend to have four such pads. The approximate overall area involved would be 125 feet times 480 feet (38.1 M x 146.3 M). Contained in the asphalt would be electrical heating coils so that freezing of the percolation solutions could be avoided in the winter time. These pads would have about a one degree slope to them so that all percolated fluids would drain to a sump in the lower end. This sump would lead to the so called pregnant solution tank. With simple filtration we may be able to electrowin the pregnant solution directly. If this proves not to be so, then the pregnant solution would be directed into a battery of four activated carbon tanks. The gold and silver contained in the pregnant solution will deposit out on the activated carbon. A caustic and ethanol wash will be then used to move the gold into solution for subsequent electro winning. After electrowinning, the solution will be pumped to the barren solution tank. The barren solution will then be recirculated to the leach pads and the process repeated.

CHEMISTRY OF CYANIDATION

The basic principle of the cyanidation process is that weak alkaline cyanide solutions have a preferential dissolving action on the gold and silver contained in an ore. The reaction (Elsner's Equation) generally accepted for several decades as representing the dissolution of gold by cyanide solution is:

$$4Au + 8CN^- + O_2 + 2H_2O \rightarrow 4Au(CN)_2^- + 4\ OH^-.$$

Recent research on the mechanism of cyanidation, however, indicates this reaction proceeds in two stages. Most of the gold dissolves by the reaction:

$$2Au + 4CN^- + O_2 + 2H_2O \rightarrow 2Au(CN)_2^- + H_2O_2 + 2\ OH^-,$$

and a small but significant proportion dissolves by reaction(1). The gold dissolution rate is dependent on the concentration of NaCN and the alkalinity of the solution, the optimum pH being 10.3. For efficient leaching, the gold should occur as free, fine sized, clean particles in an ore that contains no "cyanicides" or impurities that might destroy cyanide or otherwise inhibit the dissolution reaction. An adequate supply of dissolved oxygen must be present in the cyanide solution throughout the reaction period.

The chemistry involved in the dissolution of gold in the heap-leach cyanidation treatment is the same as that for the agitation cyanidation process. In heap leaching, the oxygen, essential for the dissolution of gold, is introduced into the cyanide solution as it is being sprinkled upon the ore heap. The absorbed oxygen and carbon dioxide from the air may also cause chemical losses of cyanide according to the following reaction:

$$2NaCN + O_2 + 4H_2O \rightarrow Na_2CO_3 + (NH_4)_2CO_3,$$

$$NaCN + CO_2 + H_2O \rightarrow HCN + NaHCO_3.$$

In heap leaching highly oxidized ores, the decomposition of cyanide by carbon dioxide may be as great as that caused by the acid constituents of the ore. The decomposition of cyanide by carbon dioxide, as well as by ground acids, is minimized by using sufficient alkaline such as lime (CaO) or caustic soda (NaOH) in the leach solution to maintain the alkalinity at a pH range of 9 to 11.

CYANIDE HANDLING AND DISPOSAL

The precious metals mining industry for many years has promoted the health and safety of its employees regarding the handling and use of cyanide. The industry has demonstrated that, with proper training and instructions, cyanide can be used routinely in leaching gold-silver ores with little risk to the worker. However, growing concern about occupational hazards and environmental pollution has resulted in the promulgation of regulations that require industry to comply with standards and guidelines as established by Federal and Provincial regulatory bodies.

Employees working in a heap leach cyanidation installation may be exposed to cyanide in the form of dust and solutions, especially during mixing of concentrated stock cyanide solutions. Ingestion of a little as 0.2 grams of sodium cyanide is considered to be lethal for human beings. The heap leach operation itself is considerably less hazardous because the leach is conducted in an open area with maximum ventilation. By maintaining the alkalinity of the leach solution at pH 10 to 11, the possibility of generating hydrogen cyanide gas (HCN) is minimized, and only trace amounts of HCN can be released by interaction of HCN and CO_2 in the enviroment. Measurements made by Mining Enforcement and Safety Administration (MESA) Inspectors show that the HCN concentration in the air close to a working heap is consistently only 2 to 3 parts per million. This is significantly less than the limit of ten parts per million established by OSHA for sustained breathing of gaseous cyanide. In a well designed heap leach installation the pregnant cyanide solution settling pond, which catches the draining from the heap, should be designed so that the capacity of the pond is sufficient to accommodate the maximum rainfall and runoff that can be expected for that particular locality, thus preventing the discharge of cyanide solution to the water shed during operation and after abandonment of the leached ore heap. The settling ponds are generally earth filled structures that are lined with water tight polyvinyl chloride or polyethylene sheeting. Ponds holding cyanide solution should be adequately posted and fenced to restrict access to the area. Because of the appreciable evaporation losses that occur during heap leaching, most operators are able to maintain complete recycling of the leach and wash solution. Thus the need to discharge potentially hazardous solutions to maintain the water balance for the leach operations is circumvented. If a bleed off system is required, in the event of an abnormally heavy rainfall, cyanide removal techniques must be considered. The most widely used method for reducing free cyanide and heavy metal cyanide concentrations in waste streams involves chemical treatment with chlorine or hypochlorite. The reaction mechanism is believed to be as follows:

$$NaCN + 2NaOH + Cl_2 \rightarrow NaCNO + 2NaCl + H_2O,$$

$$2NaCNO + 4NaOH + 3Cl_2 \rightarrow 2CO_2 + 6NaCl + N_2 + 2H_2O.$$

The available chlorine may be furnished as chlorine gas or as a hypochlorite solution. Approximately one pound of calcium hypochlorite Ca $(OCl)_2$ will oxidize one pound of free cyanide.

It is clearly advantageous from an economic standpoint for the mine operator to lower the valuable gold losses in the heap to a minimum by thorough washing of the leached ore with fresh water. The washing step results in the recovery of most of the dissolved gold and large portion of other cyanides remaining in the heap as free cyanide or complexed with heavy metals. Heavy metal cyanide salts are known to persist for several years, but residual free cyanide in abandoned heaps is believed to exist for no more than one month, depending on climatic conditions; however, scientific data to support this contention is lacking. The retention and fate of residual cyanide in heap leached residues is being scrutinized to an increasing extent by regulatory agencies. Abandoned heaps are less susceptible to wind and water erosion than finely ground tailings impounded behind a dam. In the the semi arid regions of the Western United States, where most of the heap leach cyanidation is being practised, invasion of the abandoned heaps by native desert flora has been observed to occur within one or two years.

The loading and unloading of Banbury leach pads will be done by truck and front end loader. Our tailings will likely be trucked to a stacking conveyor which would pile our tailings on another large impervious asphaltic surface for storage and further treatment if required. These tailings may become saleable as a crushed aggregate. With very little screening and grading or perhaps the addition of slightly larger segments to make the tailings into a three quarter minus (48mm), these tailings would become useful for highway paving jobs or similar work. Water supply in this cyanide leaching process is not very demanding. Two thousand imperial gallons (9,092 liters) of water with ten pounds (4.5 kg) of sodium cyanide and sufficient lime added to bring the pH to 10.3 constitutes the basic barren solution. As previously stated, most heap leach operators have no trouble with too much water, simply because these operations are mostly carried out in the arid states of the U.S. While Hedley is in an arid area we feel that it might be more practical to provide our leach pads with portable roofs. The portable roofs while guarding against the addition of too much water by way of rain or snow fall, would probably be necessary in this area to facilitate a twelve month operation. It is felt that in the colder months freezing and poor, or lack of percolation as a result of freezing, might be too big a problem. Mobile roofs would then be utilized together with canvas sides to contain minimum heating sufficient to prevent freezing. These mobile roofs could also be useful in the event of heavy downpours. The object in our operation would be zero discharge of solutions containing cyanide. Any solutions released in an emergency would be first put through the cyanide killer tank and chlorinated. A small percentage of slimes would be created from the crushing process. These slimes would be captured in the settling pond on route to the pregnant tank. After chlorination and drying, these slimes would be transported to one of the higher workings of the Maple Leaf Mine which are bone dry. Here they could be safely impounded indefinitely. The major ingredient of these slimes would be various metallic salts. The volume of slimes would be minimal. Water supply for our mill site would come from a deep well. For safety sake, the well would be located well away from the leach pads. On Banbury Gold Mines side of the river there are no neighbours and hence no wells within two miles.

SUMMARY OF THE MILL PROCESS

As previously stated our objective is the release of zero cyanide. The worse case scenario that we can imagine would be the loss of two thousand gallons (9,092 L) of pregnant or barren cyanide solution to the Similkameen

River. Although the river would be at least 800 feet (243.8 M) from these tanks and leaching pads, this worse scenario would see ten pounds of sodium cyanide enter the river. From the historical stream flow summary already introduced as an exhibit, we can see that the lowest flow in the Similkameen River takes place in the month of September when a mean average of 313 cubic feet (8.86 cubic meters) per second flow down the river. This flow rate is in excess of 19,000 imperial gallons (86,374 L) per second. The British Columbia Pollution Control Board has indicated that their objectives for the discharge of final effluents to fresh waters for cyanide are 0.1 to 0.5 milligrams per litre. Mathematical calculations indicate that using the lowest mean average flow rate of the Similkameen, which is approximately 19,400 imperial gallons (88,192 L) per second and using a pregnant or barren solution of 2,000 imperial gallons (9,092 L) containing 10 pounds (4.047 kg) of sodium cyanide that the river polution rate would cut the cyanide concentration to the pollution control standards in a time of approximately 52 seconds. We point out that our objective is for zero discharge into the Similkameen System. This worse case scenario could surely only be caused by a massive earthquake. The sodium cyanide at that point would probably be the least of the Similkameen River Valley's troubles.

GEOLOGY:

The gold mountain area is underlain by Mesozoic sedimentaries including argillite and limestone with minor beds of volcanic tuffs and breccias.

These have been intruded by a very irregularly shaped body of diorite. This intrusive series is considered to be late Jurassic age and in general, more or less contemperaneous with the great masses of batholitic rock with which most of the ore mineralization of the province is associated. Both the sedimentary and igneous formations are intruded by later dykes most of which are andesitic in character, more or less similar in general composition to the main diorite mass, but much finer grained in character due to quicker cooling.

Auriferous sulphide mineralization occurs at and near the margins of the diorite. Fissuring has occurred both in the diorite and in the adjoining sedimentary rocks. Sulphide bearing hydrothermal solutions have percolated up through these fissures, depositing quartz-calcite gangue, with the sulphides arsenopyrite, pyrite, and to a much lesser extent sphalerite, chalcopyrite, and galena. Silver and gold values appear to be related to these sulphides. The hydrothermal solutions are properly to be considered as the final siliceous calcic sulphide-bearing magmatic differentiate from the underlying dioritic magma. They evidently came into place through zones of shearing of lines of weakness that developed subsequent to the consolidation of the upper portions of the intruding or batholitic rocks. It is reasonable to infer that aside from the rather superficial zone of oxidation, that ore conditions exposed at and near the surface may be expected to extend to substantial depths without material alteration or variation in general metal content. One may expect that in addition to the fissure vein or shear zone mineralization, there may be occasional erratic replacement zones where siliceous solutions and emanations from the main channels have penetrated favourable limestone beds, though such deposits have not yet been observed on the Henry Creek property. The area is on the trend of a well recognized auriferous belt. The general geological conditions insofar as these are recognized and understood, are properly considered favourable for the occurrence of ore bodies. While values according to assays of vein lengths already opened are erractic at times, they have been shown to be continuous over considerable strike and dip lengths, and will prove to be commercial in a mining and economic sense.

EXPLORATION

Exploration work on Banbury Gold Mines properties fall into four headings:

ITEM 1

Diamond drilling

ITEM 2

Road building and trenching

ITEM 3

Soil sampling

ITEM 4

Tunnel and underground reclamation work

The Company at this point has drilled 44 diamond drill holes. Most of these holes have been concentrated on the Pine Knot Vein system. Indicated tonnage at this point on the Pine Knot is approximately 166,200 tons grading 0.32 ounces of gold per short ton. The Maple Leaf Vein has received some core drilling attention and indicated reserves on our books at this point in time indicate an ore body of 19,500 tons grading .15 ounces of gold per short ton. A new horizon was discovered by core drilling this past season at a depth of 160 feet beneath the previous lowest working. Three core drill holes have established that the Maple Leaf Vein picks up strength and heads deeper into the mountain. We have planned some deep drilling on the Maple Leaf in the coming season. Percussion drilling holes also discovered some attractive looking structures on the Number 5 level. Six percussion holes were done and the average assay of the sludge obtained ran 0.5 ounces of gold per ton. Under Item 2 the Company has now constructed approximately two and one half miles (4.02 Km) of roads or trails. Extensive work on the main access road was done during the past season, where some $80,000.00 was expended in upgrading the road. In the course of this construction, a new vein structure previously unknown was exposed. This makes five vein structures besides the two main ones that we now know about on the property. No work has been done of any consequence on these five veins as yet. Under Item 3 - Our property at this point in time has been about one-third covered by soil sampling and geochemical analysis. It is expected that this work will be completed by June 1982. As might be expected some very interesting anomalies have been shown by the work done so far. Under Item 4 - We have spent in the past season about $85,000.00 in rehabilitating the Maple Leaf Mine. This mine had six levels in it and it is possible to walk into the tunnel on one level, walk through the mine, and come out the tunnel on level six. The entire mine has new ladders and chutes and in actual fact we did some test mining on one level during the 1981 season. Thirteen hundred tons of marginal grade material were mined and stockpiled from this level. We were able to identify and establish some mining costs as the result of this work, and it would appear that mining costs will be in the neighbourhood of $30.00 per ton. An old adit on the Pine Knot Vein was also rehabilitated during the past season. This adit proceeds westerly about 100 feet (30.48 M) and then drifts along the vein for a total distance of about 120 feet (36.57 M). We may do some core drilling from this adit during the 1982 season.

MINE DEVELOPMENT

The logical method of development for this property appears to be best achieved by driving a tunnel approximately 2,000 feet (609.6 M) due south into Gold Mountain from the valley floor. The purpose of this tunnel would be to position itself underneath both the Pine Knot Vein and Maple Leaf Veins. We have determined by core drilling that the Pine Knot Vein extends at least to within one hundred and fifty feet (45.7 M) of this proposed tunnel. Once the tunnel is driven, extensive underground core drilling would be commenced. If conditions warrant, a raise would also be started with the intention of connecting the tunnel with the Pine Knot and Maple Leaf workings. A tunnel of the magnitude just described would contain approximately 11,000 tons of rock. Ample room at the base of the mountain is available for the storage of rock. Much of this area is already covered by talus slides. The underground experience that we have developed to date indicates that any underground working would probably be dry and hence water disposal or seepage should pose no problem.

EMPLOYMENT:

Banbury Gold Mines management envisions a start-up complement of people totalling 35. In this list would be the Mine Manager, the Mill Manager, the Geologist, an Assayer, a Store Keeper, a First Aid and Time Keeper person, an

Accountant, a Secretary, two Crushermen, a Truck driver, a Front End Loader Operator, a Mechanic, a Trammer, a Shift Boss, 6 Development Miners, 2 Core Drillers and 12 Stope Miners.

HOUSING:

For security reason it will be necessary to have one family resident on our property at the bottom of the hill. However, the towns of Osoyoos, Keremeos, Hedley and Princeton will be the domicile of all other employees. Besides the house for the family mentioned we will need to provide an office, a first aid facility, an assay office, an electrowinning building, a warehouse, a mechanical shop, and a changing, washing and locker room complex.

SEWAGE, GARBAGE DISPOSAL:

Because of the small number of people actually resident on the property, we believe that sewage can be safely controlled by a septic tank system. Noncombustible garbage will be trucked to the Hedley dump.

UTILITIES:

West Kootenay Power and Light Company have a main transmission line just across the Similkameen River from our proposed building site. It is the Company's intention to string a 13 Kv line onto the property and proceed with the utilization of electrical facilities where possible by means of step down transformers. West Kootenay Power and

Light Company have already indicated a willingness to provide us with this service. As mentioned previously, fresh water will be pumped from a shallow well.

DEVELOPMENT SCHEDULE:

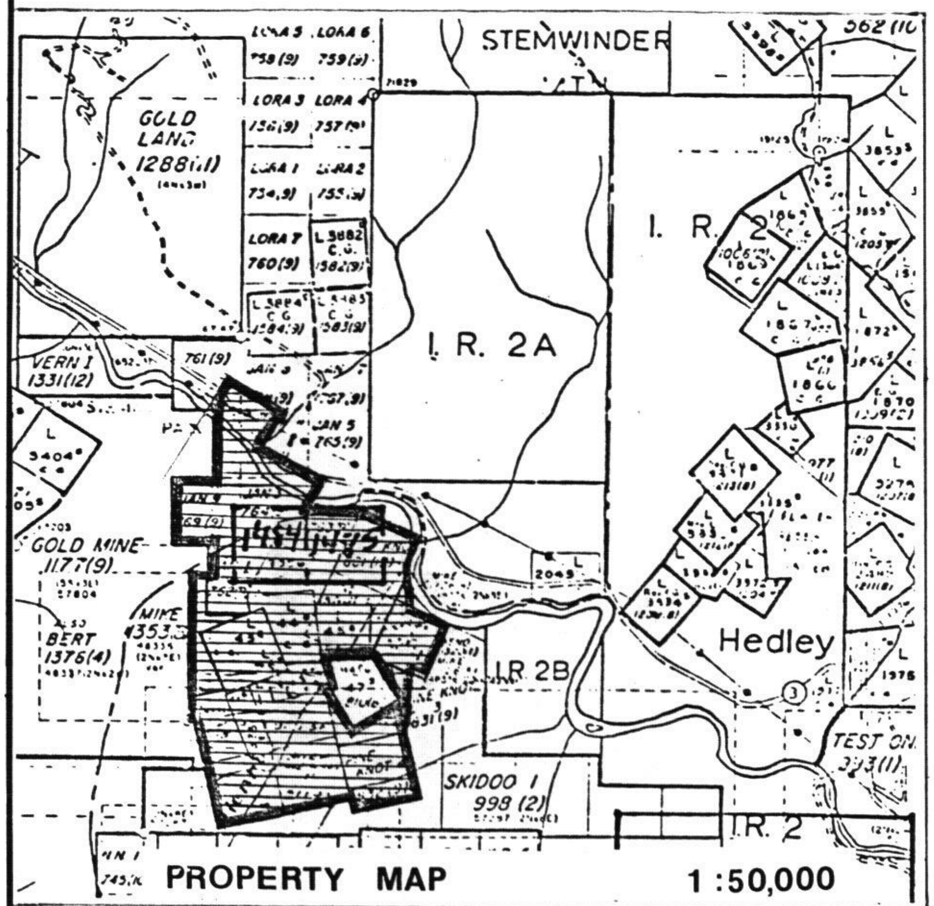
Banbury Gold Mines Ltd., hopes to drive a 2,000 foot (609.6 M) long tunnel, as previously mentioned, during 1982. It is hoped that a considerable amount of diamond core drilling can be done during 1982 as well. During the Spring of 1983, mill site preparation should take place with the crushing facilities being installed during the month of May, together with the asphaltic leaching pads and other facilities. June 1983, we believe, to be a realistic target date for start-up.

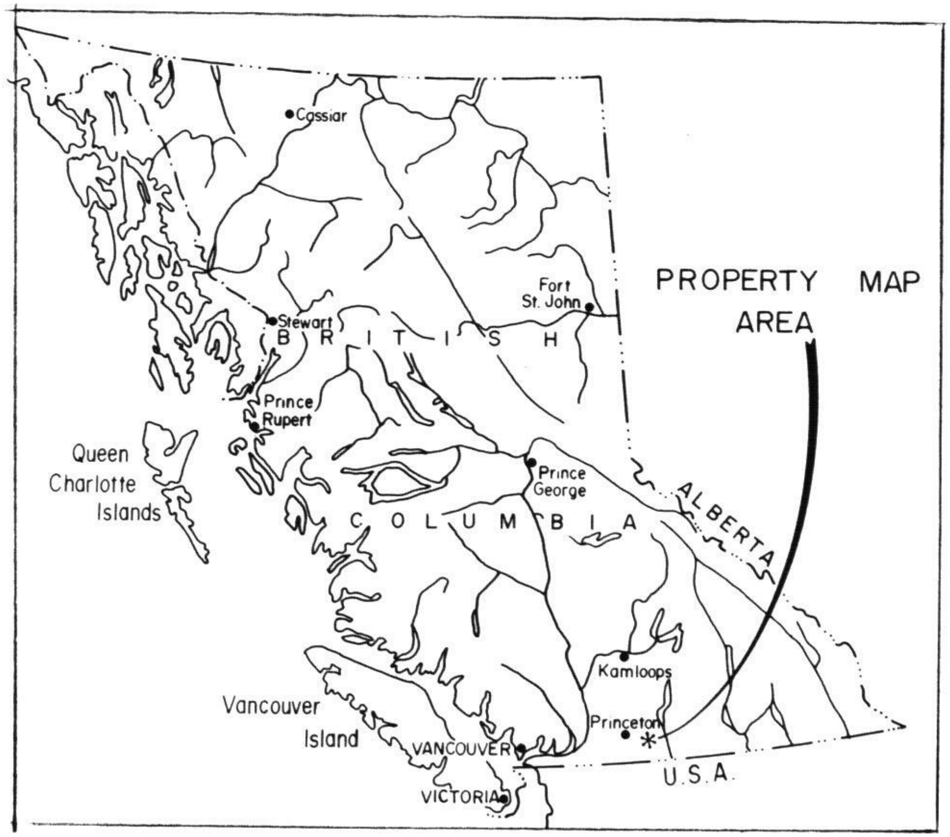
SUMMARY

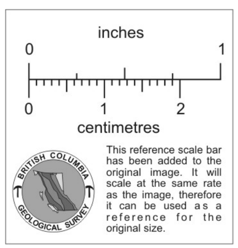
Banbury Gold Mines Ltd., owns a promising looking gold property which we believe can be put into production at the rate of 100 - 300 tons per day by mid 1983.

The highlights of our application for approval of our stage one report are:

1. Employment of at least thirty-five persons at the mine site.
2. Distribution of these employees for residential purposes between the towns of Osoyoos, Keremeos, Hedley and Princeton.
3. No consequential demand for services as supplied by the various levels of Government.
4. No request to Government for any grants, assistance or handouts.
5. Zero pollution to soil and water as a stated aim, minimal pollution to the atmosphere by NaCN, but well within Pollution Control Board posted limits.
6. No residual tailing ponds, as our product should prove saleable as a crushed aggregate and be absorbed into the area over time.
7. Garbage and sewage handled and treated in a similar manner to everybody else in the area.
8. The land we plan to use for the mill is not in the A.L.R.







BANBURY GOLD MINES LTD.

302-540 BURRARD STREET

VANCOUVER, B.C.

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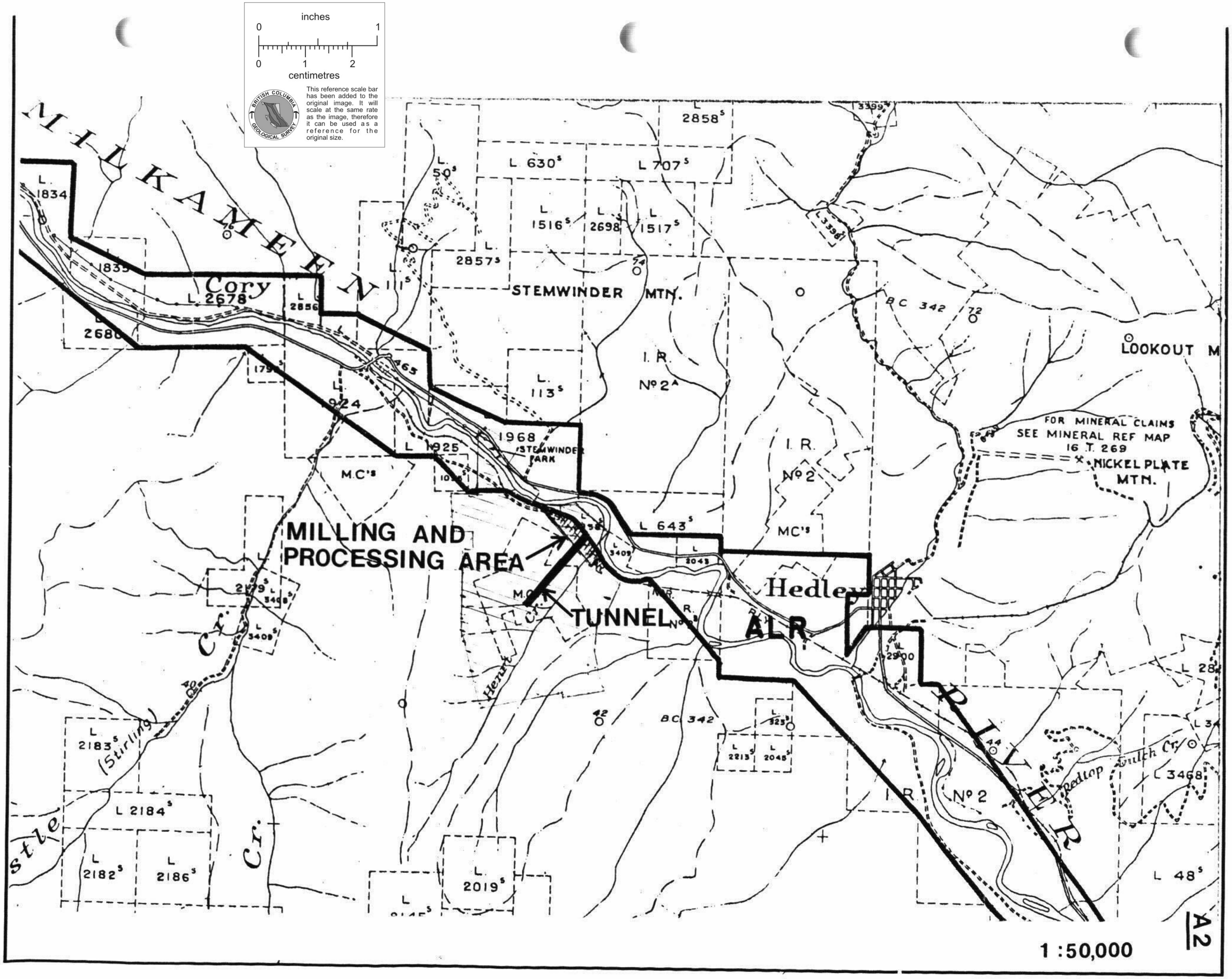

inches
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BRITISH COLUMBIA GEOLOGICAL SURVEY
This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.
MILKAMEEN
Cory
STEMWINDER MTN.
I.R. Nº 2A
I.R. Nº 2
STEMWINDER PARK
MILLING AND PROCESSING AREA
TUNNEL
ALR
Hedley
LOOKOUT M
FOR MINERAL CLAIMS SEE MINERAL REF MAP 16 T. 269
NICKEL PLATE MTN.
Redtop Gulch Cr.
RIVER
(Stirling)
Cr.
Cr.
Henri
BC 342
1:50,000
A2

EXHIBIT I

Similkameen River near Hedley - Station No. 08NL038

Monthly and Annual Mean Discharges in Cubic Feet per Second for the period of Record

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
1965	----	----	----	----	5990	6810	1530	570	415	510	734	552	----
1966	310	315	421	1720	5200	4040	1670	418	247	500	499	798	1350
1967	485	418	362	541	5970	11700	2030	450	246	581	1110	710	2050
1968	1030	1170	1540	1100	6350	7490	2180	520	436	439	483	316	1920
1969	347	319	329	1290	7810	4220	951	299	283	491	477	307	1430
1970	223	232	274	400	4130	5450	682	211	251	307	206	159	1040
Mean	479	491	585	1010	5910	6620	1510	411	313	471	585	474	1560

Similkameen River Near Hedley - Station No. 08NL038

Annual Extremes of Discharge in CFS and Annual Total Discharge in AC-FT

YEAR	MAXIMUM INSTANTANEOUS DISCHARGE	MAXIMUM DAILY DISCHARGE	MINIMUM DAILY DISCHARGE	YEAR	TOTAL DISCHARGE
1965	14600 CFS At 0500 PST on May 29	----	----	1965	------
1966	10300 CFS At 0400 PST on May 10	9340 CFS on May 10	204 CFS on Sep 10	1966	977000 AC-FT
1967	17000 CFS At 0300 PST on Jun 4	15900 CFS on Jun 22	204 CFS on Sep 28	1967	1480000 AC-FT
1968	16200 CFS At 0300 PST on May 21	14200 CFS on May 21	200 CFS on Dec 31	1968	1390000 AC-FT
1969	13600 CFS At 0524 PST on May 24	12700 CFS on May 24	197 CFS on Sep 13	1969	1040000 AC-FT
1970	15100 CFS At 0433 PST on Jun 4	13400 CFS on Jun 4	103 CFS on Sep 1	1970	756000 AC-FT
				MEAN	1130000 AC-FT

EXTREMES OF DISCHARGE FOR THE PERIOD OF RECORD

MAX. INST. DISCHARGE LS 17000 CFS ON JUN 4 1967 AT 0300 PST
MAX. DAILY DISCHARGE IS 15900 CFS ON JUN 22 1967
MIN. DAILY DISCHARGE IS 103 CFS ON SEP 1 1970

HISTORICAL STREAMFLOW SUMMARY - BRITISH COLUMBIA DEPT. OF THE ENVIROMENT TO 1970, OTTAWA

EXHIBIT II

HEDLEY — LATITUDE 49 21 N LONGITUDE 120 05 W ELEVATION 1720 FT ASL

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	YEAR	TYPE OF NORMAL
Mean Daily Temperature (Deg F)	23.1	28.4	37.2	46.6	55.2	60.7	67.3	65.6	58.3	46.6	34.0	26.9	45.8	1
Mean Daily Maximum Temperature	29.7	36.4	47.4	59.5	68.2	73.0	82.0	79.7	71.3	57.2	40.9	33.0	56.5	1
Mean Daily Minimum Temperature	16.4	20.3	26.9	33.6	42.1	48.4	52.6	51.4	45.3	36.0	27.1	20.8	35.1	1
Maximum Temperature	52	60	75	89	100	100	106	102	95	88	72	58	106	5
Minimum Temperature	-27	-26	-15	10	17	28	28	32	22	6	-10	-24	-27	5
Mean Rainfall (inches)	0.15	0.16	0.31	0.54	1.11	1.36	0.91	0.92	0.83	0.79	0.58	0.20	7.86	1
Mean Snowfall	9.7	6.5	3.4	0.4	0.1	0.0	T	0.0	T	0.3	3.7	8.2	32.3	1
Mean Total Precipitation	1.12	0.81	0.65	0.58	1.12	1.36	0.91	0.92	0.83	0.82	0.95	1.02	11.09	1
No. of days with measurable rain	1	2	4	6	10	11	7	7	7	9	5	2	71	1
No. of days with measurable snow	8	4	3	1	*				*	*	3	8	25	1
No. of days with meas. precipitation	9	7	7	6	10	11	7	7	7	9	8	9	97	1
Max. Precipitation in 24 Hrs.	2.00	1.25	1.10	0.70	1.85	1.50	1.08	1.70	1.30	1.65	0.95	1.10	2.00	1

TEMPERATURE AND PRECIPITATION TABLES FOR B.C. 1967 CANADIAN DEPT. OF TRANSPORT