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Strathcona Mineral Services Limited
12th Floor, 20 Toronto Street, Toronto, Ontario, Canada M5C 2B8

January 8, 2001

Fred Privett
Indian Affairs and Northern Development
#345 - 300 Main Street
Whitehorse, Yukon Y1A 2B5

Dear Fred:

Mt. Nansen Property

The Mt. Nansen report has now been completed and will be assembled tomorrow for shipment by courier. Included in the package will be five bound copies of the report, one unbound copy and one electronic version as originally requested.

The report has become somewhat larger than originally anticipated and we hope that it will be of assistance despite the late delivery.

We do have a number of drawings and other documentation primarily of a geological nature that should be included with the Mt. Nansen final accumulation of files wherever that may be and we will retain this documentation until we hear further from you as to where it will be delivered.

Now that the report has been completed we remain available to assist in any way in cleaning up the unfortunate story of Mt. Nansen and again thank you for your patience and tolerance.

Yours sincerely,

Graham Farquharson

Graham Farquharson

GF:jm

Telephone: (416) 869-0772
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January 8, 2001

Fred Privett
Mineral Resources Directorate
Indian and Northern Affairs Canada
Suite 345
300 Main Street
Whitehorse, Yukon Y1A 2B5

David Sherstone
Water Resources Division
Indian and Northern Affairs Canada
Suite 310
300 Main Street
Whitehorse, Yukon Y1A 2B5

Gentlemen:

Mt. Nansen Property

Enclosed is our report with our observations on the economic potential of the Mt. Nansen property based upon the available data and past performance, and our review of the principal outstanding environmental and reclamation issues. As we do not foresee any possibility of resumption of mining activities based upon the known mineral resources we would recommend that all existing mining infrastructure be removed and the property be reopened to mineral exploration once the environmental deficiences resulting from past mining operations have been rectified.

Thank you very much for the opportunity to have been involved in this assignment and we apologize for the late delivery of this report.

We remain available to respond to any enquiries and provide any further assistance that may be required.

Yours sincerely,

Graham Farquharson

GF:jm
Enc.

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SUMMARY

The information and data available on the Mt. Nansen property near Carmacks, Yukon Territory, has been reviewed following a site visit in March 2000. The basic objective of the mandate from the Department of Indian Affairs and Northern Development (DIAND) was to express an opinion on the economic potential of the Mt. Nansen property as indicated from the presently known mineral resources and the potential for finding other resources that might be economic under currently foreseeable conditions in precious metal markets.

Mt. Nansen has had an unfortunate history as mining on the property has commenced on three separate occasions and has shut down after short periods of operation in all three cases. This has been partially due to factors beyond the control of those involved in the operation of the property, such as a decline in metal prices, but also because those involved with developing and operating the property have not done well in their assessment of some of the key technical and cost factors involved with the mining operation. For whatever reasons, the failure of the Mt. Nansen property during the most recent period of activity from 1996 to February 1999 while BYG Natural Resources Inc. (BYG) was the owner and operator has left the property with limited indicated underground mineral resources that require treatment by a complex flowsheet involving both leaching and flotation, and a tailings impoundment facility on the property with structural and environmental concerns.

From this review we had no difficulty concluding for the reasons that are given in the report that there is no prospect for a resumption of mining activity based upon the known mineral resources and current precious metal markets. Those resources are too low grade, are of limited quantity and involve difficult metallurgy all of which mitigate against consideration for mining for the foreseeable future. With prices for both gold and silver having been on the decline since 1995 and with no expectations

for any major improvement in the near-term future none of the factors necessary to improve operating margins appear to offer much reason for optimism for improvement.

There is exploration potential on the property but it would be difficult to anticipate that better success in terms of resource grades and larger tonnages would be found than have been identified to date. Unless there is a major improvement in metal prices there is unlikely to be a resumption of serious exploration on the property. Consequently, we would make the following recommendations:

3. The Mt. Nansen property should be permanently closed and deactivated. All of the process plant and buildings on site should be removed and any equipment with value sold with the two large grinding units having the best prospects for recovery of some value.

4. The existing tailings impoundment area should be stabilized and the long-term reclamation plan finalized which would include not allowing for any water storage behind the existing dam. If necessary the tailings could be moved into the Brown-McDade open pit without any major adverse consequences on any possible future mining activity but this movement of tailings should not be necessary.

5. All of the geological information on the property should be collected, organized and filed in an orderly manner so that it would be available for interested parties that might be considering exploration on the property in future.

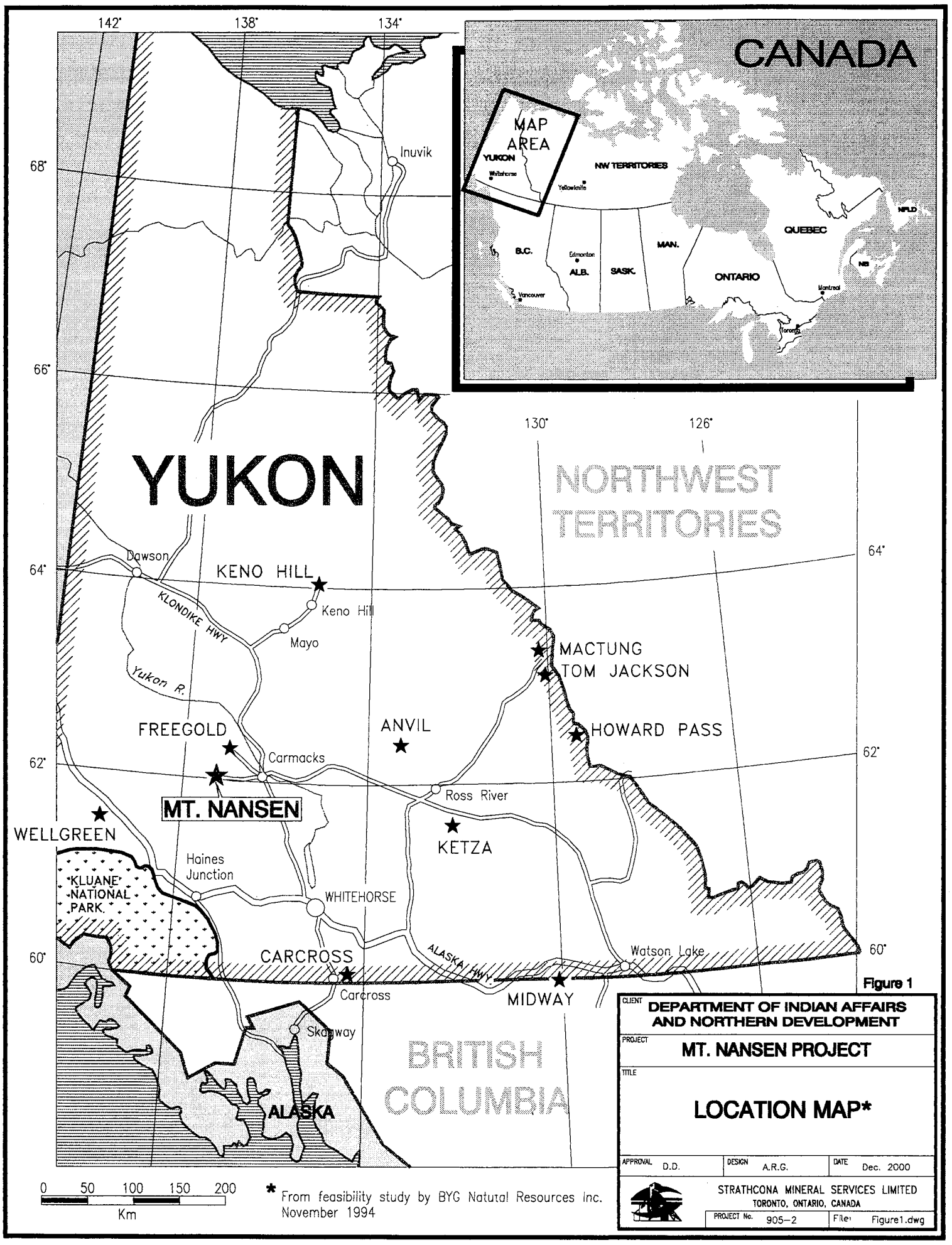
6. Once the foregoing has been completed the Mt. Nansen property should become open and available for mineral exploration.

INTRODUCTION

The Mt. Nansen gold-silver property, located 60 kilometres west of Carmacks in the Yukon Territory, came into production during its most recent period of activity in November 1996 with mining operations conducted over a period of 28 months through to February 1999 although no processing of ore occurred from December 1997 to February 1998. BYG Natural Resources Inc. (BYG) was the owner of the property during this period and responsible for the development and operation of the project prior to its being put into receivership in March 1999. Subsequently, the receiver-manager that had been appointed abandoned the project in September 1999 and the property has now reverted to the Department of Indian Affairs and Northern Development (DIAND), the federal government agency responsible both for environmental protection in the Yukon and for administering title to mineral claims and mining leases.

DIAND moved to control the environmental consequences of the abandonment of mining activities at Mt. Nansen and particularly with respect to the tailings storage area. Prior to taking further decisions on what should be done with the property, including the possible removal of buildings and equipment, DIAND undertook to have a review compiled of the economic potential of the property based upon either resuming operations and developing the known mineral resources and/or carrying out further exploration on the property. Strathcona Mineral Services (Strathcona) was requested to provide assistance in the assessment of the economic potential and the terms of reference issued by DIAND are enclosed in Appendix I.

A visit was made to the property on March 12-13, 2000 by Doug Dumka and Graham Farquharson of Strathcona together with Eric Denholm, formerly with Anvil Range Mining Corporation for whom he was responsible for all environmental matters and was thus quite familiar with environmental legislation in the Yukon and requirements



* From feasibility study by BYG Natural Resources Inc. November 1994

Figure 1

CLIENT	DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
PROJECT	MT. NANSEN PROJECT
TITLE	LOCATION MAP*
APPROVAL D.D.	DESIGN A.R.G. / DATE Dec. 2000
	STRATHCONA MINERAL SERVICES LIMITED, TORONTO, ONTARIO, CANADA
PROJECT No. 905-2	File: Figure1.dwg

595N

562N

529N

496N

463N

430N

88–104
2.9,6.5
2.5

88–109
3.9, 8.5
2.5

98–210
0.7, 5.0
2.5

88–79
0.4, 10.4
2.5

FW 3

88–107
0.1,2.3
2.5

88–70
12.4, 33.6
3.4

88–69
0.4, 12.5
2.5

1200m Elevation

88–125
1.0,25.3
2.5

88–128
0.3, 12.3
2.5

94–143
NSV

88–122
7.0,77.7
2.5

94–148
2.0, 67.1
2.5

88–115

88–108
0.6, 2.5
2.5

88–126
0.4, 6.0
2.5

88–116
0.4, 2.5
2.5

94–144
4.5, 28.6
4.8

94–147
2.3, 86.5
2.5
0.4, 12.4
2.5

88–127
4.5, 217.3
2.8

88–134
0.2, 1.0
2.5

88–129
0.7, 16.9
2.5

94–145
0.1, 2.4
2.5

94–146
0.4, 12.0
2.5

88–135
2.7, 158.3
2.5

88–132
10.7, 37.4
2.5

88–2A
NV

LEGEND

Original surface

Off section

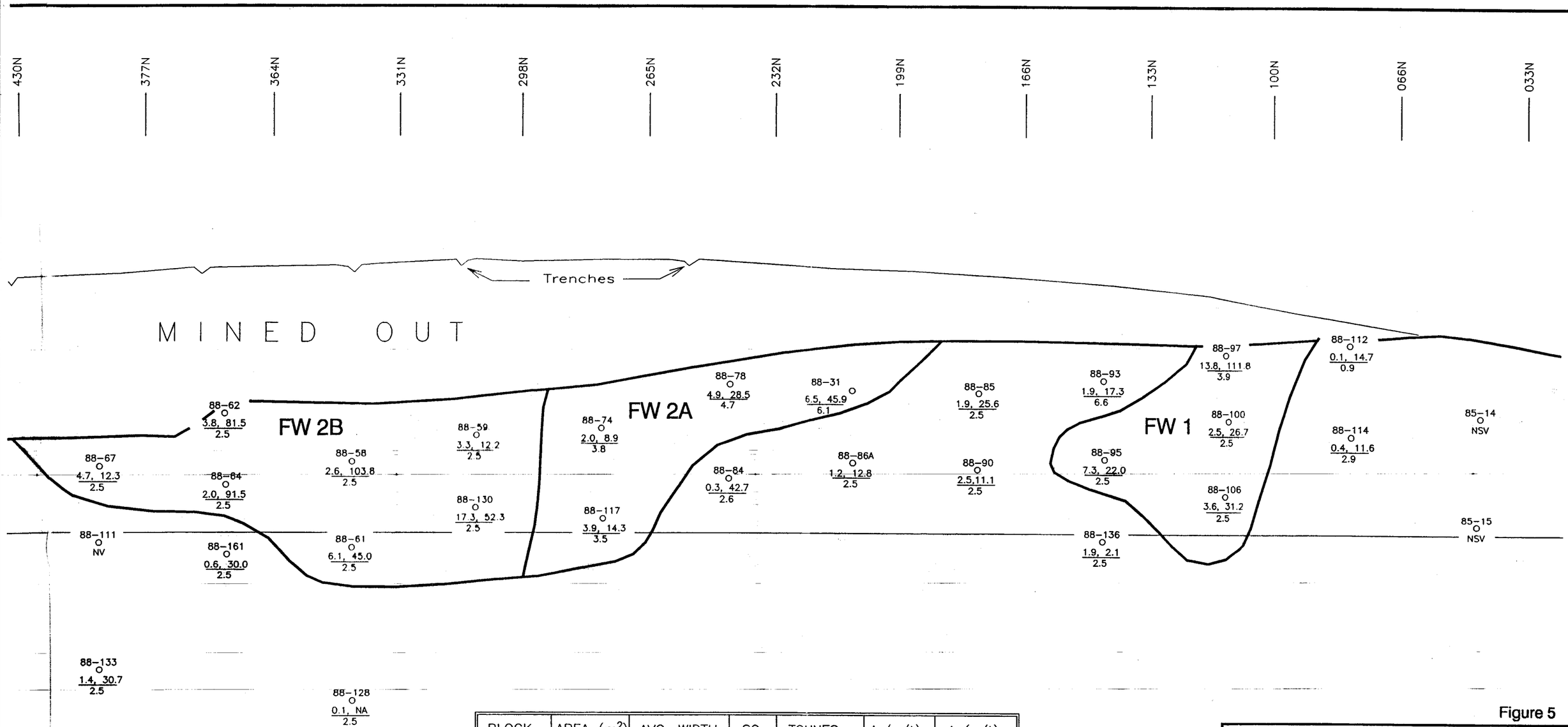
88–115 — DDH number

0.3, 2.0 / 2.5 — Pierce point of centre of intersection; Au(g/t), Ag(g/t) / metres true thickness

cut* — Indicates individual high gold assay >28g/t cut to 28g/t

HW 2 — Block number

NSV — No significant value



BLOCK	AREA (m^2)	AVG. WIDTH	SG	TONNES	Au(g/t)	Ag(g/t)
FW 1	2350	2.9m	2.5	16700	7.7	56
FW 2A	2920	4.6m	2.5	33600	4.6	30
FW 2B	4630	2.5m	2.5	29000	5.7	57
FW 3	3660	2.9m	2.5	26000	5.0	71
TOTAL				105400	5.5	52

SCALE 1 : 1000

0 10 20 30 40 50

metres

Figure 5

CLIENT: DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

PROJECT: MT. NANSEN PROJECT

TITLE: BROWN - McDADE DEPOSIT LONGITUDINAL SECTION FOOTWALL VEIN

APPROVAL	DESIGN	DATE
D.D.	A.R.G.	Dec. 2000

STRATHCONA MINERAL SERVICES LIMITED
TORONTO, ONTARIO, CANADA

PROJECT No. 905-2 | File: Figure5.dwg

for maintaining water licences and other environmental permits in good standing. Robert Stroshein, formerly Vice-President Exploration for BYG, acted as our guide and principal contact in locating sources of information and providing historical background on the operations at Mt. Nansen.

On March 14 meetings were held in Whitehorse with DIAND officials and principally with Fred Privett, David Sherstone and Hugh Copland to discuss the work that DIAND had done to date and possible future options for the property. Subsequently, we provided our initial observations on the economic prospects for the Mt. Nansen property and on the environmental status of the property in our letter of March 24, 2000, a copy of which is also enclosed in Appendix I.

PROPERTY HISTORY

As with most mineral discoveries in the Yukon Territory the original reports of mineralization on the property were related to placer gold and originated at the time of the Klondike gold rush at the turn of the century. Small placer gold operations have been carried out since that time on the property. The first hardrock gold discovery was made by prospectors Brown and McDade in 1943 and subsequently the Webber and Huestis Zones were identified.

During the period 1963 to 1967 a concerted program of exploration and underground development was carried out which led to the construction of a small flotation mill that treated approximately 10 000 tonnes of material from the Huestis and Webber deposits during 1968 and 1969. However, gold recoveries into a sulphide flotation concentrate were only about 60% and the operation was not viable.

During 1975-76 a further 5 000 tonnes of material from the Huestis Zone was

processed but again encountered poor gold recovery in the sulphide flotation circuit and ceased to operate with the realization that a cyanide leaching circuit was required to recover the free gold in the ore as was the case during the previous period of operation.

In the period 1985-87 a further substantial exploration program was carried out by Chevron Minerals in a joint venture with BYG which included surface trenching and diamond drilling. BYG subsequently continued this exploration program in 1988 but with the focus on the Brown-McDade deposit and particularly the upper portions of the deposit where the mineralization was oxidized and would be susceptible to treatment in a cyanide leaching circuit with much better gold recoveries than had been experienced with the flotation of a sulphide concentrate.

In 1994 the exploration program resumed under new management in BYG which led to a feasibility study in November 1994. Expenditures during the period 1985-94 amounted to about $5.5 million. At the end of 1995 BYG received clearance from DIAND and other agencies involved in the regional environmental review committee and a water licence for a mining operation was granted in early 1996.

The plan in 1996 for the Mt. Nansen mining operation was to mine ore from the Brown-McDade open pit initially at a rate of 500 tonnes per day and then increasing to 700 tonnes per day with some supplemental feed from other zones on the property. The ore reserve base at that time was estimated at 650 000 tonnes with an average grade of 6.7 grams per tonne (g/t) gold. It was expected that an average of 50 000 ounces of gold would be produced per year with a minimum mine life of four years and at an average cost of US$215 per ounce. Capital expenditures were estimated at $7.5 million. The feasibility study indicated the project would be very profitable at a gold price of US$300 per ounce and a Canadian dollar exchange rate of US$0.74.

Production started in November 1996 and continued through to November 1997 when it was apparent that an additional investment would be required in the grinding circuit in the process plant to handle a clay content greater than had been expected in the ore and which had limited production through the crushing plant. Operations resumed in March 1998 and continued through until closure in February 1999.

During the combined operating period a total of 269 000 tonnes of material was processed with an average grade of 6.2 g/t gold. Only in seven months during that time-frame did the average daily production approach 500 tonnes per day over a full month because of handling problems caused by the clay content in the material mined. Total capital investment appears to have been of the order of $14 million, substantially more than was originally anticipated.

Average gold recovery over the entire period was 67% with recovery during the last eight months of operations having dropped to about 50% due to the nature of the ore changing from that of an oxide to a mixture of oxides and sulphides. Total gold production during the period was 35 700 ounces. The project generated operating profits in only two quarters, those ending March 1997 and June 1997 when higher grades with good gold recovery of 82-90% in the upper levels of the Brown-McDade pit were being achieved where the ore was fully oxidized. After installation of additional grinding capacity the tonnage throughput was increased but recovery declined due to the increasing level of refractory sulphide material.

Operations ceased on February 17, 1999 following a directive by DIAND as the operation was not in compliance with its water licence. Cyanide and arsenic levels in the tailings pond had become elevated and proper arrangements for treating the effluent had not been put in place. There was also concern about the stability of the

tailings pond dam and BYG was unable to meet the requirements for an environmental liability bond.

In reviewing the files in the Mt. Nansen mine office at the time of our visit in March 2000 we would note that there appeared to be an absence of the usual production records, monthly reports, cost reports etc. that one would expect with a well-managed operation. It is possible that these reports and information had been removed but we also had the impression that they were not being compiled in a manner that would be expected for most mining operations. Consequently, it has not been possible to obtain detailed historical cost information and other data that we would normally expect when reviewing the files for an operating mine.

On March 22, 1999 a receiver-manager for BYG, D. Manning and Associates from Vancouver, was appointed but subsequently apparently resigned in September 1999. As the principal creditor with a first mortgage on the property DIAND assumed responsibility and incurred expenditures in ensuring environmental compliance in 1999 and subsequently commissioned this review of the economic potential of the property prior to making further decisions to minimize the current and long-term costs to the Government of Canada and, therefore, the Canadian taxpayer.

For reference we have enclosed in Appendix II audited financial statements for BYG Natural Resources Inc. as of their fiscal year-end of September 30 for the years 1996 to 1998. Statements could not be found for the period October 1998 to February 1999. However, the balance sheet as of September 30, 1998 indicates that the liabilities at that time substantially exceeded the realizable value of the assets which together with the virtual depletion of the treatable oxide ore in the Brown-McDade pit meant that BYG would be unable to meet its financial obligations and, therefore, the decision to put the company into receivership, or declare bankruptcy, was inevitable.

GEOLOGY

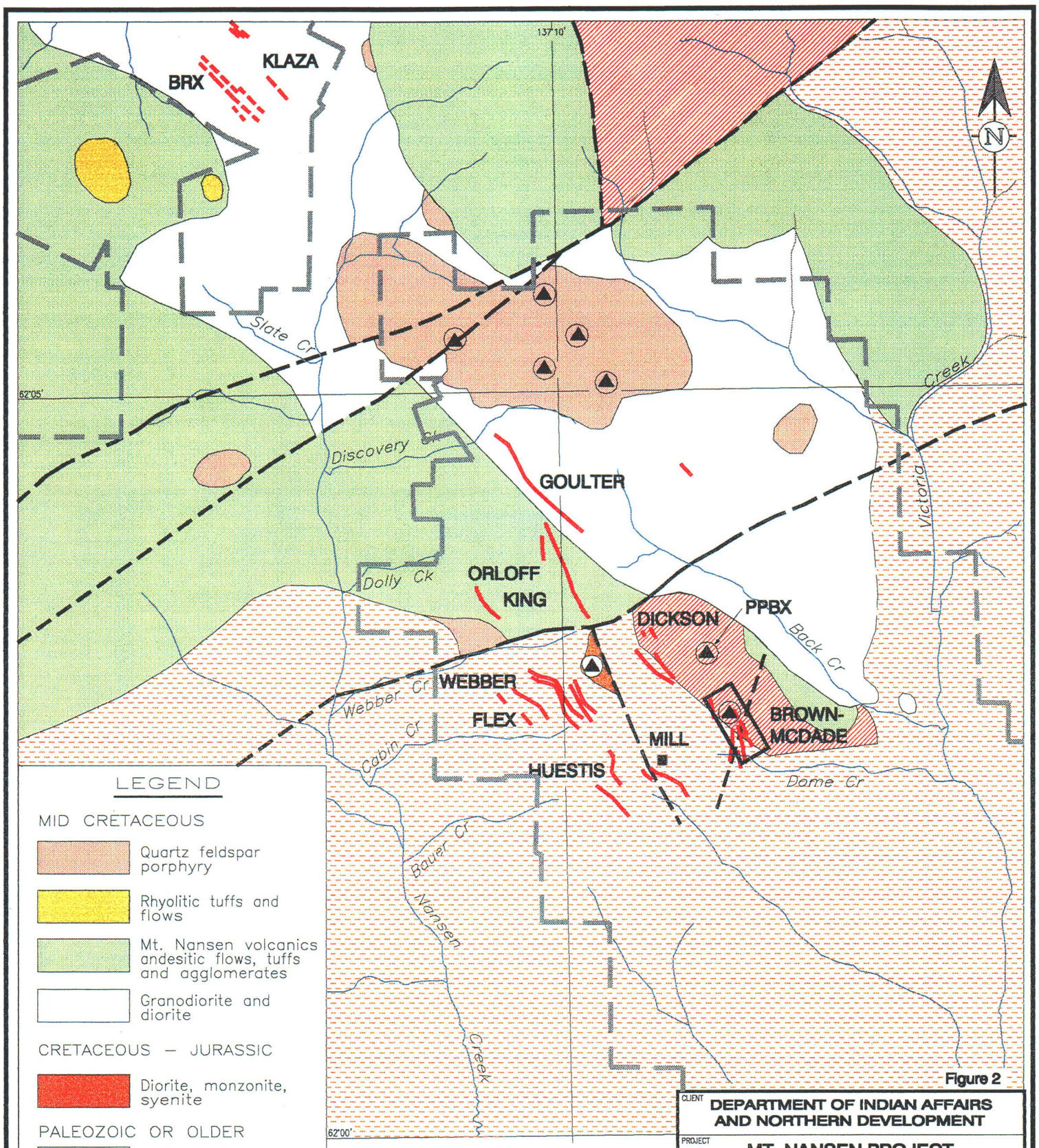
The following summary description of the geology of the Mt. Nansen property was compiled from reports prepared by BYG Natural Resources and by Robert Stroshein, which in turn relies upon the prior work done by others including Archer Cathro and Associates and the Geological Survey of Canada.

Property Geology

The Mt. Nansen property is situated within the eastern part of the Yukon Crystalline Terrane between the Coast Plutonic Complex to the southwest and the Yukon Cataclastic Terrane to the northeast.

The oldest rocks in the area are strongly metamorphosed meta-sedimentary schists and gneisses of Paleozoic (early Mississippian) age. This assemblage was then intruded by early Cretaceous felsic plutonic rocks consisting of diorites, monzonites and syenites which in turn were intruded by younger mid-Cretaceous mafic to intermediate volcanic rocks of the Mount Nansen Volcanic Suite.

On the Mt. Nansen property the older Paleozoic rocks cover the lower third of the mineral claim group and are dominated by interlayered quartz feldspar-chlorite gneiss, quartzite, amphibole and augen gneiss (see Figure 2). These rocks, which host three of the main mineralized zones, the Webber, Huestis and Flex, have strong foliations which strike northeast and dip steeply to the northwest. To the northeast, locally foliated mid-Cretaceous granodiorite, quartz-diorite and quartz-monzonite rocks predominate and are host to the other main mineralized zone, the Brown-McDade deposit. In the north of the Mt. Nansen claim group there is a large quartz-feldspar porphyry intrusive complex with flanking extrusive andesitic flow and tuff units which



LEGEND

MID CRETACEOUS

- Quartz feldspar porphyry
- Rhyolitic tuffs and flows
- Mt. Nansen volcanics andesitic flows, tuffs and agglomerates
- Granodiorite and diorite

CRETACEOUS – JURASSIC

- Diorite, monzonite, syenite

PALEOZOIC OR OLDER

- Gneiss and schist with lesser amphibole, quartzite and marble
- Silicified breccia gold showing
- Fault
- Vein, inferred
- Vein, known

* Compiled from reports prepared by BYG Natural Resources Inc.

Figure 2

CLIENT: DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

PROJECT: MT. NANSEN PROJECT

TITLE: PROPERTY GEOLOGY AND MINERAL OCCURRENCES*

APPROVAL	DESIGN	DATE
D.D.	A.R.G.	Dec. 2000

STRATHCONA MINERAL SERVICES LIMITED
TORONTO, ONTARIO, CANADA

PROJECT No. 905-2 | File: Mtnansen

unconformably cuts earlier units. Within this intrusive complex are small silicified breccia pipe zones which have local associated gold values. The intrusive complex has a copper, molybdenum and bismuth geochemical signature which may be indicative of porphyry style mineralization.

Propylitic alteration consisting of epidote, calcite, pyrite and magnetite replacement of hornblende is widespread. Local argillic alteration of host rocks occurs along vein contacts near surface and has led to the accumulation of clay that caused severe handling problems when mining the upper levels of the Brown-McDade deposit.

Faulting is the main structural feature with two main fault sets occurring on the property. A north-northwest trending set which dips from 50 to 70 degrees to the southwest parallels the main vein direction and is locally mineralized. A second southeast trending set is subvertical and locally cuts some of the mineralized zones. These faults form part of a larger regional structural corridor known as the Mt. Nansen Trend.

As the property was unaffected by recent glacial activity, weathering can reach depths in excess of 70 metres from the topographic surface altering sulphides in some of the mineralized zones to limonite.

Mineralization

There are two forms of mineralization presently known on the property and both cut and are therefore younger than the enclosing host rocks.

The most common form of mineralization is found within planar structurally controlled vein systems consisting of quartz, carbonate and varying amounts of

sulphide. The vein systems can occur as simple quartz veins, such as the Huestis and Webber, or as a complex anastomosing series of veins and veinlets such as the Brown-McDade. The individual vein systems can range up to 600 metres in length, from two to eight metres in width and are open to depth. The better gold values within these systems are restricted to steeply plunging shoots with stronger vertical rather than horizontal continuity which may indicate some structural control.

A less common type of mineralization observed is in siliceous pipe-like breccia zones which may be sulphide-rich such as at the north end of the Brown-McDade open pit or sulphide- poor such as at the PPBX showing. Both types of breccia pipes are relatively narrow steeply plunging bodies with complex structural controls which are poorly understood.

The main sulphides present are pyrite and arsenopyrite with lesser amounts of galena, sphalerite, chalcopyrite, stibnite and various sulphosalts. The depth of oxidation is variable as has been shown with the experience in processing material from the Brown-McDade pit where the oxide tonnage was found to be less than estimated.

Gold occurs as fine-grained (5 to 40 micron) inclusions in an early pyrite as well as in arsenopyrite, as peripheral infiltrations in a number of sulphide minerals, and as "free gold" forming an intergrowth with galena, freibergite and sulphosalts. The "free gold" is relatively easy to recover either by gravity or by cyanide leaching. However, the primary inclusions in pyrite and arsenopyrite and the peripheral infiltrations in sulphide minerals present a processing challenge. In the past such ores would have been treated with very fine grinding, sulphide flotation, roasting and cyanidation whereas currently the pressure-oxidation treatment of a flotation concentrate would be used for those deposits where the resource tonnage is large enough to justify the capital expenditure of such a process route.

Silver occurs mostly as inclusions in galena and sphalerite although freibergite and miargyrite have been reported. Silver to gold ratios vary from 7 to 1 in the planar vein mineralization to 3 to 1 in the breccia pipe mineralization. This variation can be explained solely by the difference in base metal values between the two types.

The potential for disseminated copper-molybdenum-gold-silver mineralization also does exist and is discussed under the section dealing with exploration potential.

RESOURCE INVENTORY

An important component of this review of the economic potential of the Mt. Nansen property was to assess the four known deposits to determine if any potentially economic mineralization remains on the property. Resources were re-calculated for the material below the present Brown-McDade pit as well as for the Flex Zone. Selected resource blocks were examined in the Webber deposit and grades from chip sampling of the drifts were compared to the quoted "reserve" grades. For the Huestis deposit, previous calculations were examined and the reserve numbers carried forward but as resources.

In all the zones examined, none of the tonnage that has been classified as a resource would meet the current standards for acceptance as a reserve which would imply being economic to mine.

Data Base

A large amount of work has been done and data collected on the Mt. Nansen property over a long period of time by various operators. Unfortunately the data available at the Mt. Nansen site for this review was somewhat disorganized and not easily accessible.

The data used in this review of the resource estimates primarily consisted of digital geological sections, digital assay logs and chip sample plans for some of the older underground workings. Data on previous resource calculations was taken from the 1994 Feasibility Study done by BYG Natural Resources Inc. During the course of our review certain concerns about the data base were raised and they have been noted below.

From late 1996 till closure of the mine in February 1999, assaying of both production blast hole and drill core samples was done at the Little Salmon Analytical Laboratory in Carmacks which was operated by BYG. No organized quality control and assurance procedures with independent checking at outside laboratories on a regular basis appeared to be in place and so there was no way to check on the quality of the assay information. Results of several duplicate samples assayed at the lab indicate there may have been problems with repeatability, especially for gold. There are indications from previous reports that some check sampling was done on drill core assays from earlier drilling campaigns but no actual comparative data was available to check the quality of that assaying.

No reports describing the metallurgical test work done on samples from the various deposits and the results of that work were available. Verbal communication with Robert Stroshein suggested that BYG did not fully understand the metallurgy of the Brown-McDade open pit ore they were processing as was evidenced by the generally poor recoveries in the mill during the last eight months of operation.

No information on how capping levels for high gold and silver values were determined, if used at all, was available.

Specific gravity information for material from the different deposits was available only for the Flex Zone.

A brief description of the of the data available, parameters used , and procedure for calculation of the remaining resources for each deposit follows.

Brown-McDade Open Pit

For the purpose of this review it was assumed that any remaining ore in the bottom of the pit would be mined in conjunction with the underground resource. It is unlikely that the cost of further waste stripping to access the mixed sulphide/oxide mineralization exposed in the bottom of the pit would be warranted. In addition as the results for gold recovery over the last several months of operation have indicated, the mill flowsheet was not appropriate for treating the Mt. Nansen sulphide material.

Brown-McDade Underground

There are two types of mineralization present in the unmined portion of the Brown-McDade deposit. The more prevalent type consists of anastomosing veins and veinlets of quartz with minor carbonate and varying amounts of sulphides, mostly fine-grained pyrite, arsenopyrite, galena, sphalerite and chalcopyrite. This mineralization occurs in structurally controlled fractures cutting coarse-grained granodiorite and are associated with a series of quartz porphyry dykes injected along a major fault. This fault, known as the Footwall Fault, limits the mineralization to the northeast. Drilling to date has outlined a series of variably continuous steeply dipping structures over an area 500 metres long by 50 metres thick which in some cases are open to depth. Two of the structures, designated No. 1 (hanging wall) and No. 2 (footwall) were considered geologically continuous enough to warrant examination for potential resources.

A second type of mineralization, a sulphide-rich siliceous breccia, was uncovered in the north end of the pit during mining. Bench plans created by combining bench face mapping and assaying of blast holes show this breccia pipe to be approximately 30 metres long by 12 metres wide in planar cross section with a different plunge than the mineralized ore shoots within the vein quartz structures. Subsequent re-logging of diamond holes in the area of this pipe by BYG personnel indicate that it is strongly chopped up by faulting which may reflect a different timing of emplacement.

The data used in the Strathcona calculation of the Brown-McDade underground resource was taken from 18 computer-generated cross sections at a scale of 1:250 spaced 33 metres apart over the length of the existing pit. These sections represented the most up-to-date information available on the deposit but were somewhat stylized as they showed only what were considered the most significant assays and generalized geology. They did, however, show the current depth of mining in the pit. Digital assay logs were available for most but not all of the drilling, however, no digital geological logs were found.

No specific gravity information was available for the area below the pit bottom, therefore an arbitrary value of 2.5 from previous calculations was used.

A rough calculation by BYG of a cut-off grade for an underground operation indicated that 3.5 g/t gold equivalent was a reasonable number to use and was similar to the cut-off used in previous resource calculation exercises. While we have continued to use this cut-off grade simply to provide continuity with past reserve estimates, a more appropriate cut-off grade with the current gold price, operating costs and more likely metallurgical recoveries would result in a much higher cut-off grade.

Individual high gold and silver assays were capped at 28 g/t and 260 g/t respectively based on a statistical examination of the assay population for the Brown-McDade deposit (Figures 3,4).

The choice of mining method will have a large influence on the tonnage and grade for the Brown-McDade underground resource estimate. The uncertainty about ground conditions and the dip of 40 to 50° for the hanging wall vein will make any bulk mining method somewhat questionable although that was what BYG had proposed in their feasibility study. We have simply allowed for a minimum mining width of 2.0 metres and intersections less than 2.0 metres were expanded using the surrounding assays. Then 0.25 metres of external dilution was applied to each side of the intersection to produce the diluted geological grade for that intersection.

Mineralized structures were correlated on section based on geometry and position relative to the Footwall Fault. Individual intersections for each of the two main structures were expanded to the 2.5-metre minimum true width and the pierce points along with cut gold and silver values were plotted on vertical long sections.

A gold equivalent was created for each intersection using a ratio of 60 g/t silver equal to 1 g/t gold. While this ratio reflects the price ratio between the two commodities it does not take into account the usual lower metal recovery for silver. Intersections with a gold equivalent of greater than 3.5 g/t were grouped. In some instances lower intersections were included in order to mimic the realities of potential mining.

Grades were calculated by taking the length-weighted average of the intersections within an outlined shoot. As the drill spacing was roughly equidistant no de-clustering of pierce points was required. No additional external dilution on the shoot edges was added to this procedure.

Mt. Nansen Property

BMD Zone - Gold Frequency Distribution

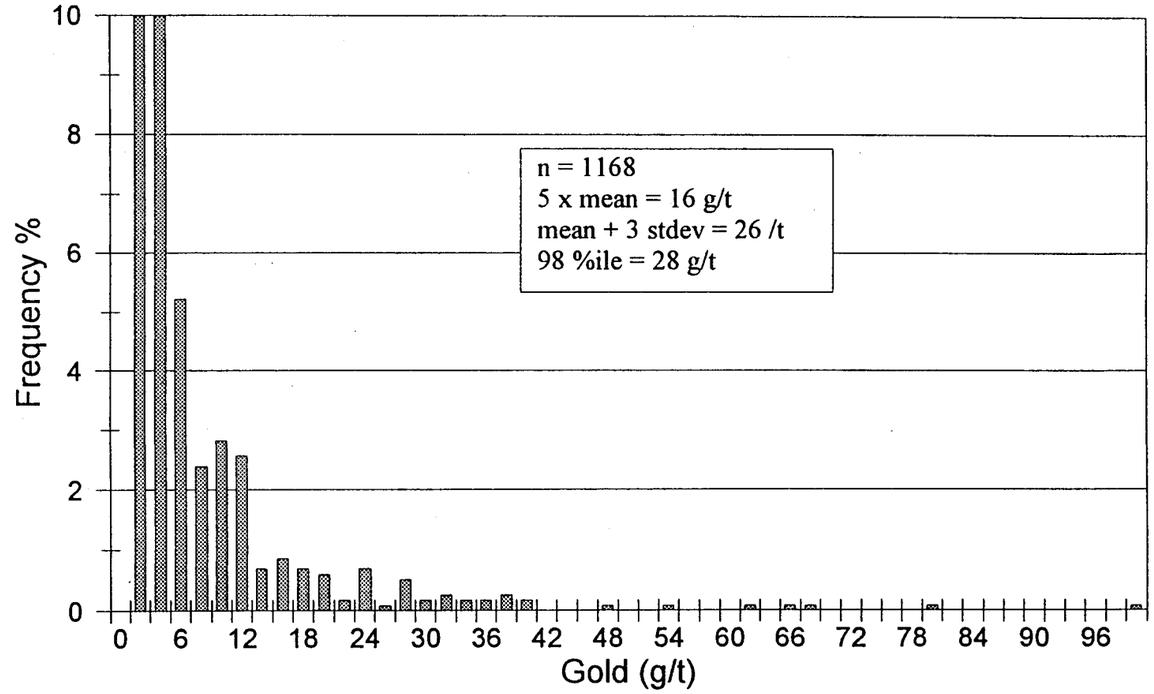


Figure 3

Mt. Nansen Property

BMD Zone - Silver Frequency Distribution

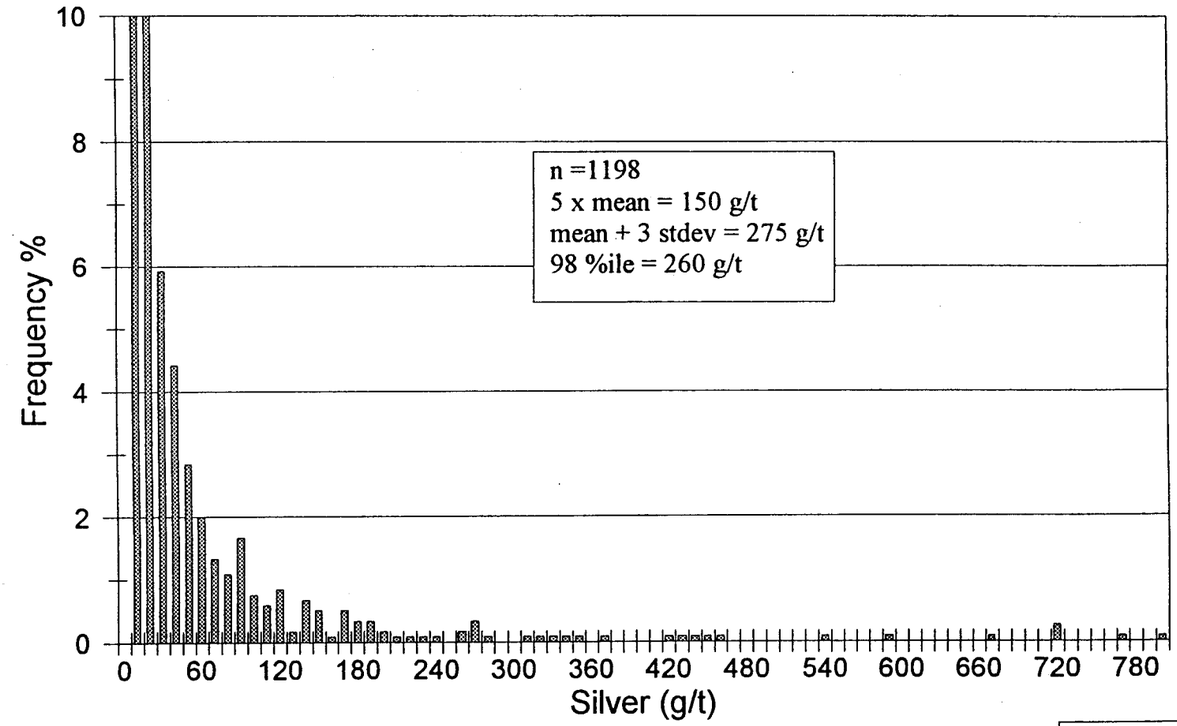


Figure 4

Tonnages for individual shoots were determined by calculating the area of each shoot on longitudinal section and multiplying it by the average thickness of the individual intersections within it. No allowance was made for crown pillars between the pit bottom and the top of the proposed underground mining blocks.

No diamond drill hole geological data was available which would enable one to properly distinguish breccia-pipe mineralized intersections from quartz-carbonate vein intersections as well as unravel the complex structural shape of the Breccia Pipe Zone. Therefore the tonnage and grade for this part of the Brown-McDade underground resource was carried forward from the work done by BYG geologists but categorized as a diluted inferred geological resource.

The outlined resource blocks in the No. 1 and No. 2 structures have been categorized as indicated geological resources (Figures 5,6) and are summarized in Table 1.

Table 1 - Brown-McDade Underground Geological Resource

Zone	Tonnes	Au (g/t)	Ag (g/t)	Category
No. 2 (FW)	105 400	5.5	52	indicated
No. 1 (HW)	20 700	9.8	50	indicated
Total indicated	**126 100**	**6.2**	**51**	indicated
Breccia Pipe	25 000	10.7	158	inferred

595N

562N

529N

496N

463N

430N

88–104
2.9,6.5
2.5

88–109
3.9, 8.5
2.5

98–210
0.7, 5.0
2.5

88–79
0.4, 10.4
2.5

FW 3

88–70
12.4, 33.6
3.4

88–69
0.4, 12.5
2.5

88–107
0.1,2.3
2.5

1200m Elevation

88–125
1.0,25.3
2.5

88–128
0.3, 12.3
2.5

94–143
NSV

88–122
7.0,77.7
2.5

94–148
2.0, 67.1
2.5

88–115

88–108
0.6, 2.5
2.5

94–147
0.4, 12.4
2.5

2.3, 86.5
2.5

88–126
0.4, 6.0
2.5

88–116
0.4, 2.5
2.5

94–144
4.5, 28.6
4.8

88–127
4.5, 217.3
2.8

88–134
0.2, 1.0
2.5

88–129
0.7, 16.9
2.5

94–145
0.1, 2.4
2.5

94–146
0.4, 12.0
2.5

88–2A
NV

88–135
2.7, 158.3
2.5

88–132
10.7, 37.4
2.5

LEGEND

Original surface

Off section

88–115 — DDH number

0.3, 2.0 / 2.5 — Pierce point of centre of intersection; Au(g/t), Ag(g/t) / metres true thickness

cut* — Indicates individual high gold assay >28g/t cut to 28g/t

HW 2 — Block number

NSV — No significant value

377N | 364N | 331N | 298N | 265N | 232N | 199N | 166N | 133N | 100N | 066N | 033N

Trenches

MINED OUT

FW 2B

FW 2A

FW 1

88-62 3.8, 81.5 / 2.5
88-67 4.7, 12.3 / 2.5
88-64 2.0, 91.5 / 2.5
88-58 2.6, 103.8 / 2.5
88-59 3.3, 12.2 / 2.5
88-130 17.3, 52.3 / 2.5
88-61 6.1, 45.0 / 2.5
88-161 0.6, 30.0 / 2.5
88-111 NV
88-133 1.4, 30.7 / 2.5
88-74 2.0, 8.9 / 3.8
88-78 4.9, 28.5 / 4.7
88-31 6.5, 45.9 / 6.1
88-84 0.3, 42.7 / 2.6
88-86A 1.2, 12.8 / 2.5
88-117 3.9, 14.3 / 3.5
88-85 1.9, 25.6 / 2.5
88-90 2.5,11.1 / 2.5
88-93 1.9, 17.3 / 6.6
88-95 7.3, 22.0 / 2.5
88-97 13.8, 111.8 / 3.9
88-100 2.5, 26.7 / 2.5
88-106 3.6, 31.2 / 2.5
88-136 1.9, 2.1 / 2.5
88-112 0.1, 14.7 / 0.9
88-114 0.4, 11.6 / 2.9
85-14 NSV
85-15 NSV

	WIDTH	SG	TONNES	Au(g/t)	Ag(g/t)
		2.5	700	7.7	56
		2.5	800	4.6	30
		2.5	000	5.7	57
		2.5	900	5.0	71
			400	5.5	52

Figure 5

CLIENT: DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

PROJECT: MT. NANSEN PROJECT

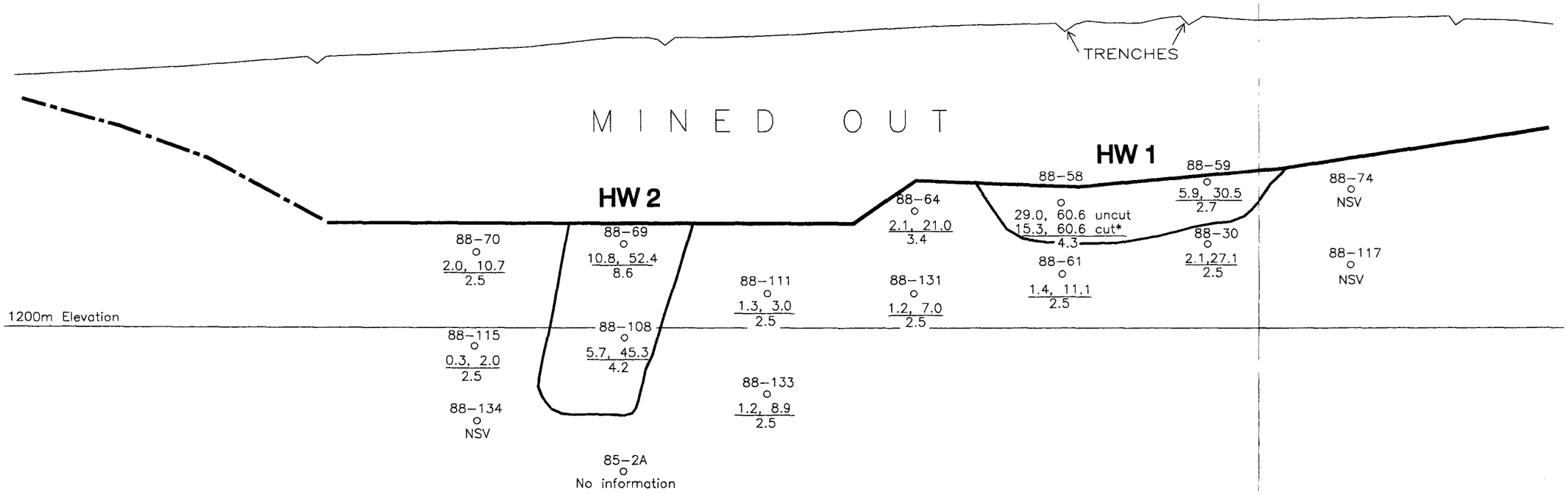
TITLE: BROWN - McDADE DEPOSIT LONGITUDINAL SECTION FOOTWALL VEIN

APPROVAL	DESIGN	DATE
D.D.	A.R.G.	Dec. 2000

STRATHCONA MINERAL SERVICES LIMITED
TORONTO, ONTARIO, CANADA

PROJECT No. 905-2 | File: Figure5.dwg

595N | 562N | 529N | 496N | 463N | 430N | 377N | 364N | 331N | 298N | 265N



LEGEND

- Original surface
- Off section
- 88-115 — DDH number
- 0.3, 2.0 / 2.5 — Pierce point of centre of intersection; Au(g/t), Ag(g/t); metres true thickness
- cut* — Indicates individual high gold assay >28g/t cut to 28g/t
- **HW 2** — Block number
- NSV — No significant value

BLOCK	AREA (m^2)	AVG. WIDTH	SG	TONNES	Au(g/t)	Ag(g/t)
HW 1	720	3.5m	2.5	6300	5.5	49
HW 2	900	6.4m	2.5	14400	9.1	50
TOTAL				20700	8.0	50

SCALE 1 : 1000

0 10 20 30 40 50

metres

Figure 6

CLIENT **DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT**

PROJECT **MT. NANSEN PROJECT**

TITLE **BROWN - McDADE DEPOSIT LONGITUDINAL SECTION HANGINGWALL VEIN**

APPROVAL	DESIGN	DATE
D.D.	A.R.G.	Dec. 2000

STRATHCONA MINERAL SERVICES LIMITED
TORONTO, ONTARIO, CANADA

PROJECT No. 905-2 | File: Figure6.dwg

Flex Zone

The Flex Zone consists of a complex and convoluted series of anastomosing narrow quartz veins filling fractures in the Paleozoic metamorphic rocks on strike and between the Huestis and Webber vein systems. The zone has been defined by surface trenching and diamond drilling over an area 550 metres long by 65 metres wide and is open to depth. Sulphide minerals within the veins have been oxidized in the top 15 to 40 metres of the deposit.

The data used in the re-calculation of the resource consists solely of 20 sections at scale of 1:250 spaced 25 metres apart along the strike of the zone. These sections show mainly assay information on drill hole traces and surface trenches with little in the way of geology. Digital assay data was available for most of the holes.

Some recent specific gravity determinations were found indicating an average value of 2.5 tonnes per cubic metre for the Flex material and this was used in the calculations.

Individual high gold and silver assays were capped at 15 g/t and 350 g/t respectively based on a statistical examination of the assay population for the Flex Zone (Figures 7,8).

The same cut-off grades and minimum widths as applied to the Brown-McDade deposit were applied to the Flex. A mining reserve calculated by BYG engineers using an open- pit method resulted in a 16 to 1 waste-to-ore strip ratio. Given the narrow size of the veins and discontinuous nature of the gold values within the structures, this approach may not have been the correct one.

Mt. Nansen Property

Flex Zone Gold Frequency Distribution

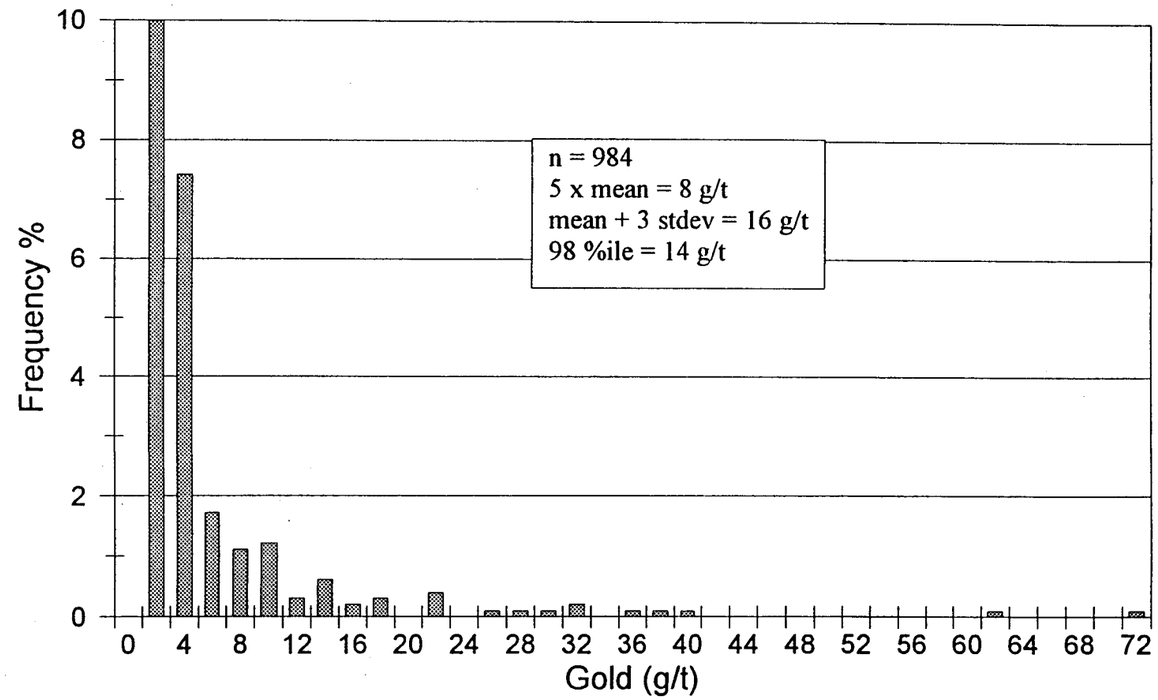


Figure 7

Mt. Nansen Property

Flex Silver Frequency Distribution

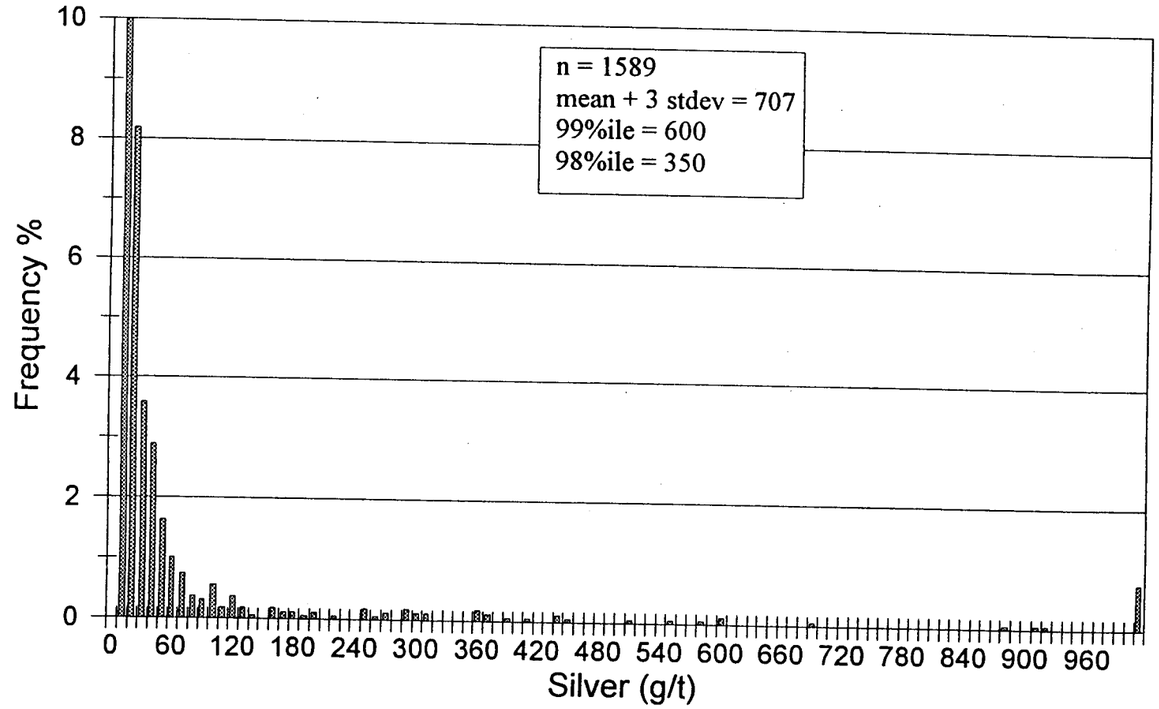


Figure 8

The lack of geological information for the drill holes and the trenching has made correlation of the various individual vein structures difficult. It is obvious from the sections there is a great deal of structural control on the direction and dip of the individual veins as well as the grade distribution within them. Therefore no attempt has been made to link intersections. Instead each mineralized intersection was expanded to the minimum 2.5-metre diluted true width. Gold equivalencies were calculated using the same ratio of 60 g/t silver equating to 1 g/t gold as used for the Brown-McDade. Each diluted intersection with grade equivalencies above the incremental 3.5 g/t gold cut-off was given a minimum tonnage. The intersections were taken 6 metres either side of the section and given a minimum height of 10 metres. If there was another identifiable intersection within the same structure on the same section which graded above the 3.5 g/t gold cut-off then the block was taken half-way to that intersection.

Tonnages and grades were calculated for each block resulting in 35 blocks totalling 40 000 tonnes at 5.0 g/t gold and 116 g/t silver. Given the lack of geological data available for this review, this tonnage has been categorized as an inferred resource. Details of the calculations for the resource estimates for the Brown-McDade and Flex deposits are provided in Appendix III.

Webber Zone

The Webber deposit consists of a west-northwest striking quartz-vein network which dips steeply to the west. The veins , which individually vary from 0.3 to 2.0 metres in width, occupy shear-controlled fractures in metamorphic rocks and have been traced over 500 metres along strike by both underground development and surface trenching. Two main vein structures have been recognized, the No. 1 (Footwall) and the No. 2 (Hanging wall), and they have been developed and extensively chip sampled

on one level, the 4300, over distances of 200 and 250 metres respectively. Individual mineralized shoots within each vein are typically 50 metres in strike length and 100 metres along the steep plunge direction with the main shoots open to depth (Figures 9,10).

Better grade gold and silver mineralization is associated with fine-grained sulphides with the highest values associated with the presence of arsenopyrite. Shoot boundaries between gold-rich and barren vein are sharp and correlate well between the surface exposures and underground development.

Although some of the ores are oxidized in the surface trenches, no metallurgical data was available to determine the oxide/ sulphide boundary. The presence of significant amounts of arsenopyrite associated with better gold and silver values could indicate that the Webber ores are at least in part refractory.

Other than seven surface diamond drill holes drilled in 1985 and three in 1987, no additional work has been performed on the Webber deposit since a tonnage and grade estimate was calculated by H.W. Ranspot in 1983. A slight modification was made to the estimate by David Melling for a feasibility study done by BYG in 1994 which incorporated this drilling.

The data available for review consisted of the underground chip sample plan of the 4260 level and an incomplete set of chip sample maps for some of the stoping lifts when mining was briefly carried out in 1968-69. No information on underground diamond drill holes or chip samples from the raises was found.

A complete recalculation of the resources in the Webber deposit was not undertaken because of the incomplete data base. Instead chip sample assays taken on the 4260

54,500E

55,000E

55,500E

56,000E

30,000N

29,500N

N

No. 1 VEIN

No. 2 VEIN

101

105

107

121

119

122

PORPHYRY

PORPHYRY

146

154

157

139

129

130

131

134

136

LEGEND

139

Resource block

Vein

Contact

Fault

SCALE 1 : 1250

0 20 40 60 80 100

METRES

0 100 200 300

FEET

Figure 9

CLIENT
DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

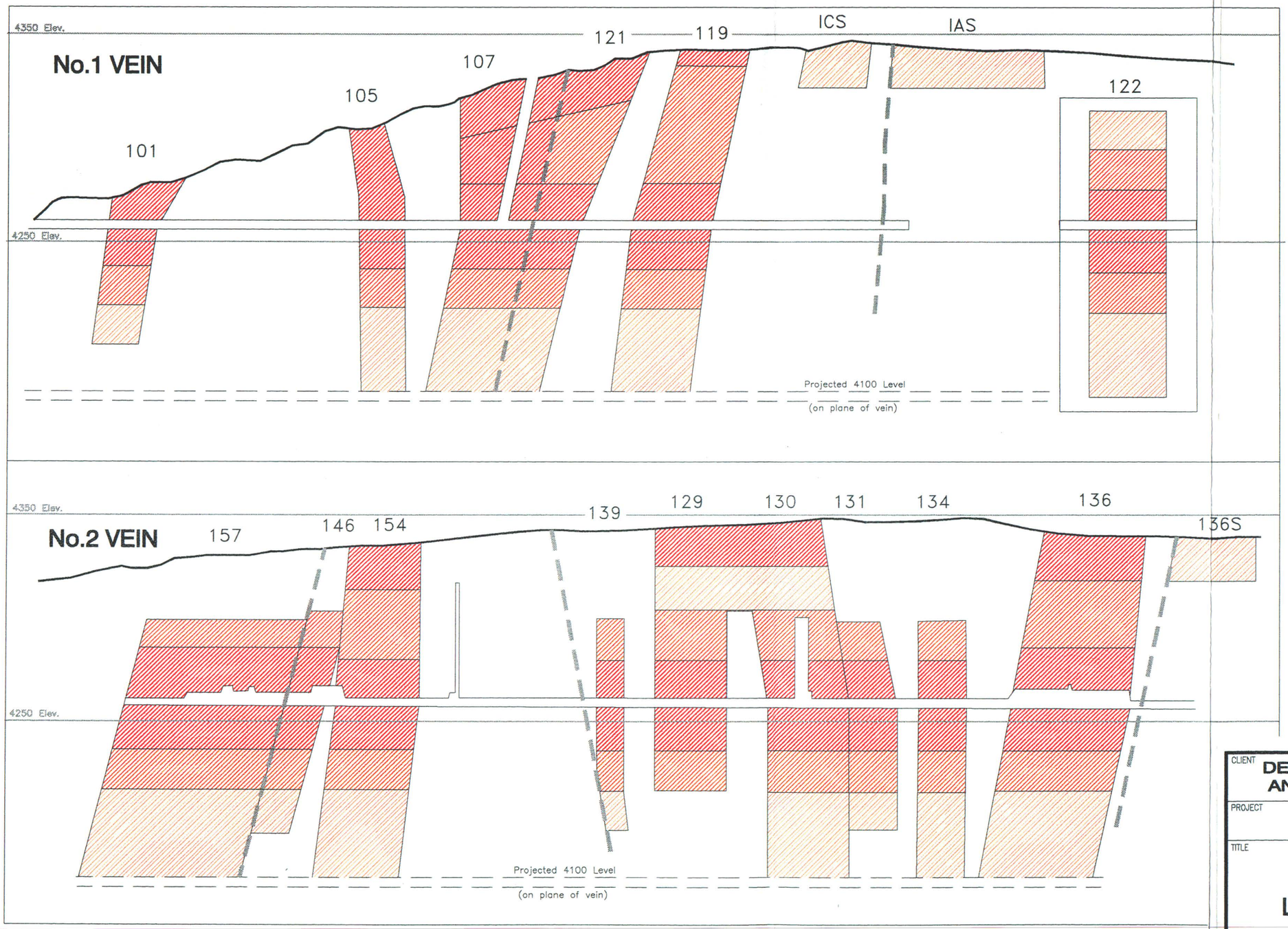
PROJECT
MT. NANSEN PROJECT

TITLE
WEBBER DEPOSIT
4260 LEVEL PLAN

APPROVAL	DESIGN	DATE
D.D.	A.R.G.	Dec. 2000

STRATHCONA MINERAL SERVICES LIMITED
TORONTO, ONTARIO, CANADA

PROJECT No.	File:
905-2	Figure9.dwg



Measured resource

Indicated resource

Inferred resource

Fault

SCALE 1 : 2000

0 20 40 60 80 100

metres

Figure 10

CLIENT **DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT**

PROJECT **MT. NANSEN PROJECT**

TITLE

WEBBER DEPOSIT LONGITUDINAL SECTION

APPROVAL	DESIGN	DATE
D.D.	A.R.G.	Dec. 2000

STRATHCONA MINERAL SERVICES LIMITED
TORONTO, ONTARIO, CANADA

PROJECT No. 905-2 | File: Figure10.dwg

58,500E

59,000E

59,500E

30,500N

30,000N

628

588

590

594

583

585

591

609

593

595

No. 11 VEIN

No. 12 VEIN

No. 13 VEIN

QTZ PORPHYRY

DIOR

N

LEGEND

139

Resource block

Vein

Contact

Fault

SCALE 1 : 1250

0 20 40 60 80 100

METRES

0 100 200 300

FEET

CLIENT DEPARTMENT OF
AND NORTHERN

PROJECT MT. NANSEN

TITLE HUESTIS
4300 LEVE

APPROVAL D.D.

DESIGN A.R.

STRATHCONA
TORONT

PROJECT No. 905

level were examined for the 105 stope in the No. 1 vein and the 157 stope in the No. 2 vein. An average length-weighted uncut grade was calculated for the area of the drift which corresponded with the block outline on the ore reserve long sections obtained from the BYG mine office at Mt. Nansen. These grades were then compared to the grades as listed in the ore reserve tables. Gold grades compared well, but there was some variation in the silver grades which in part is due to a lack of understanding of how the reserve was calculated in detail.

We have questions about several of the parameters used in the original reserve calculation as included in the 1994 feasibility study by BYG. A minimum diluted mining width of 1.22 metres was used which would not be realistic in any present mining scenario and the final width probably would be closer to 2.0 metres. No capping of high gold or silver values was done which has been shown to be necessary in other deposits on the property. Increasing the mining width and capping the high values would lower the overall grade and increase the tonnage. The categorization used for the reserve tonnages calculated at that time would not be applicable today.

Because of the above concerns and the uncertain metallurgy associated with the Webber Zone, and the unavailability of all the basic data required for a resource estimate, we have simply carried the previous estimates for tonnage and grade but transferred the proven and probable ore into the indicated resource category and the possible ore into the inferred resource (Table 2).

Table 2 - Webber Geological Resource

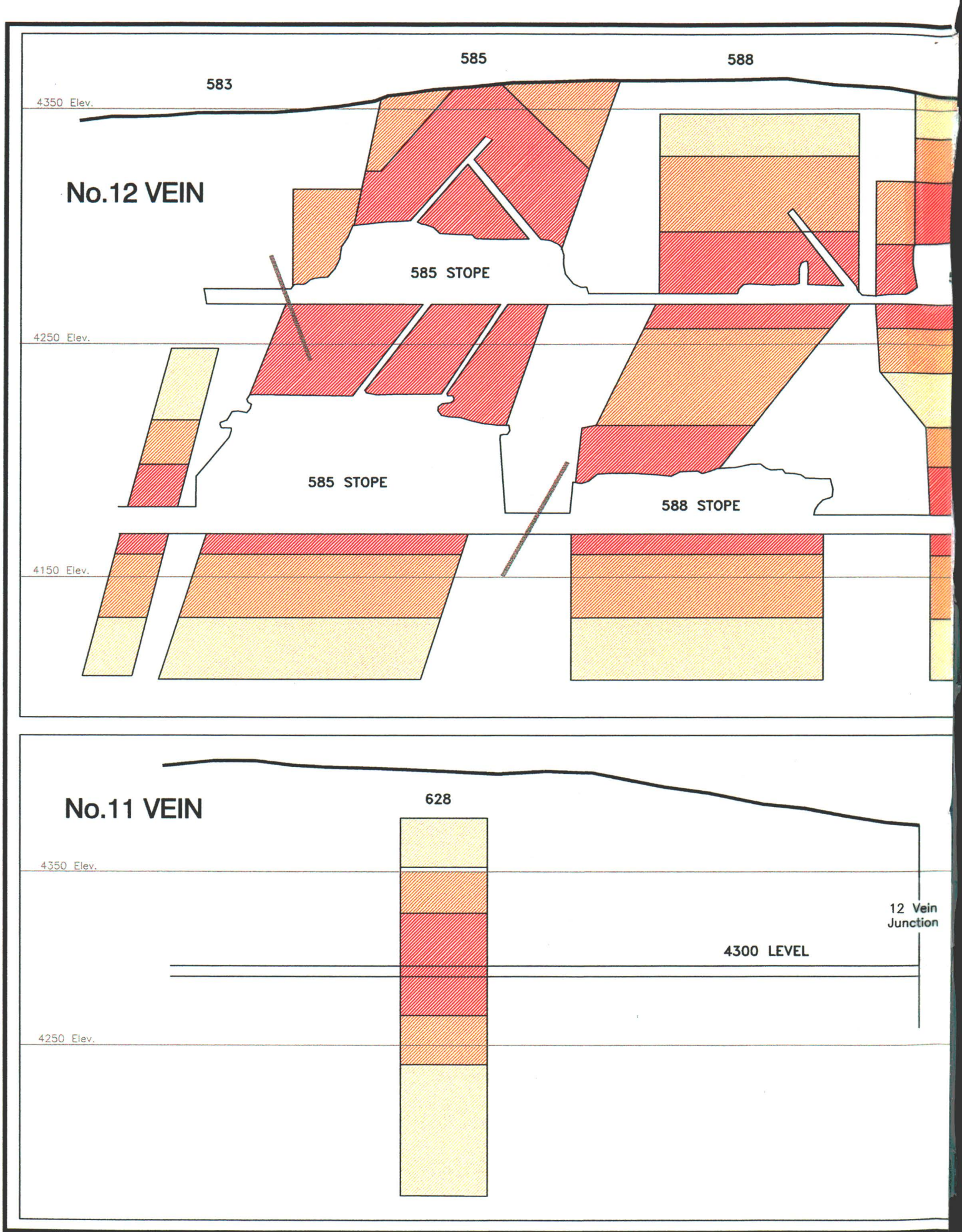
Zone	Tonnes	Au (g/t)	Ag (g/t)	Category
No. 1 (FW)	22 800	13.1	561	indicated
No. 2 (HW)	35 700	8.9	625	indicated
Total indicated	58 500	10.5	600	indicated
No. 1 (FW)	11 900	6.8	380	inferred
No. 2 (HW)	15 000	7.2	546	inferred
Total inferred	26 900	7.0	472	inferred

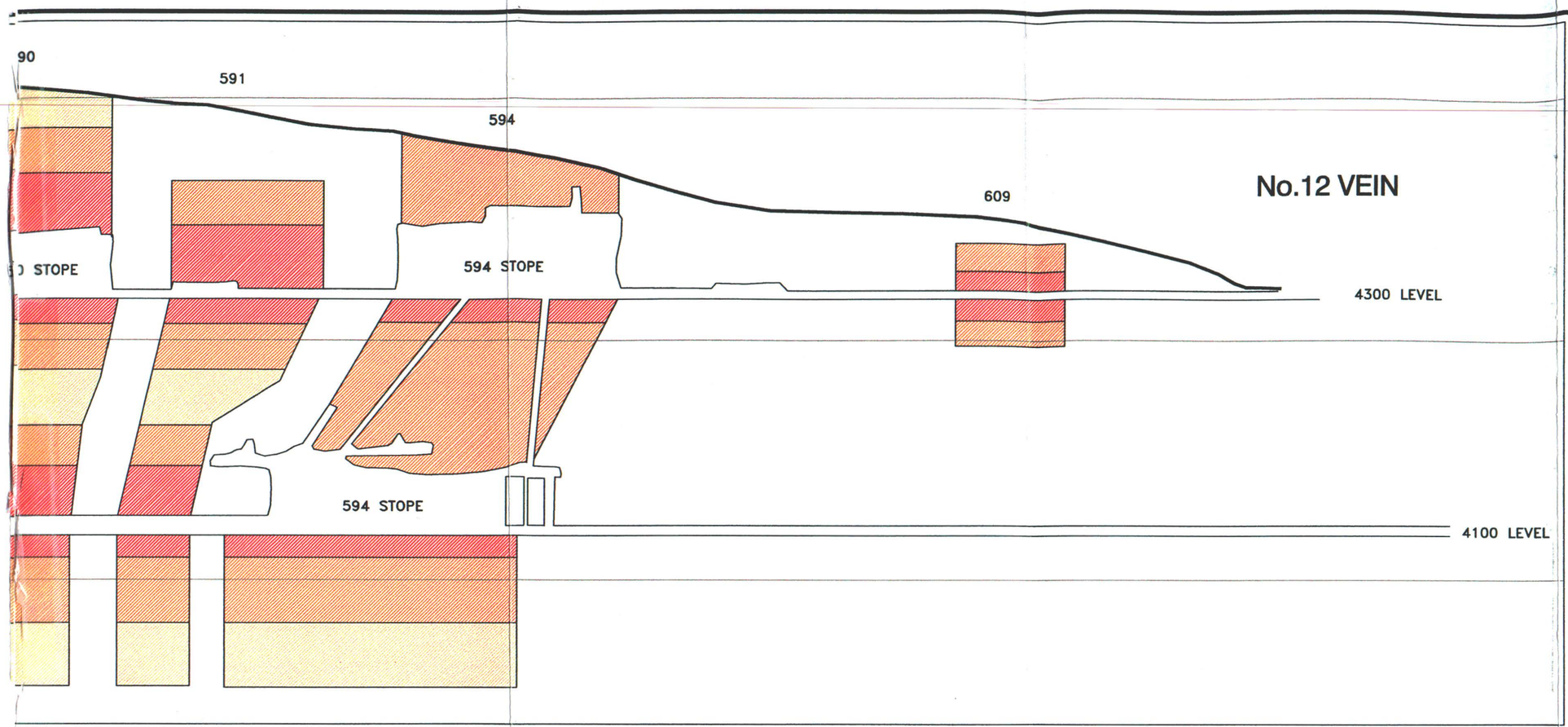
Huestis Zone

The Huestis deposit consists of a north-northwest striking quartz-vein network which dips 65 to 75 degrees to the east. The veins , which individually vary from 0.3 to 2.0 metres and average 1.0 metres in width, occupy shear-controlled fractures in metamorphic rocks and have been traced over 500 metres along strike by both underground development and surface trenching. Three main vein structures have been recognized, the No. 11 (Hanging wall), the No. 12 (Intermediate) and the No. 13 (Footwall), and they have been developed and extensively chip sampled on two levels, the 4100 and 4300. Individual mineralized shoots within each vein are typically 100 metres in strike length and 170 metres along the steep plunge direction with the main shoots open to depth (Figures 11,12).

A deep hole, 94-151, confirmed the continuation of the mineralized structure to a vertical depth of about 400 metres below surface.

The character and mineralogy of the Huestis veins are identical to the Webber veins


585
588
583
4350 Elev.
No.12 VEIN
585 STOPE
4250 Elev.
585 STOPE
588 STOPE
4150 Elev.
628
No.11 VEIN
4350 Elev.
12 Vein
Junction
4300 LEVEL
4250 Elev.



Measured resource

Indicated resource

Inferred resource

Fault

SCALE 1 : 2000

0 20 40 60 80 100

metres

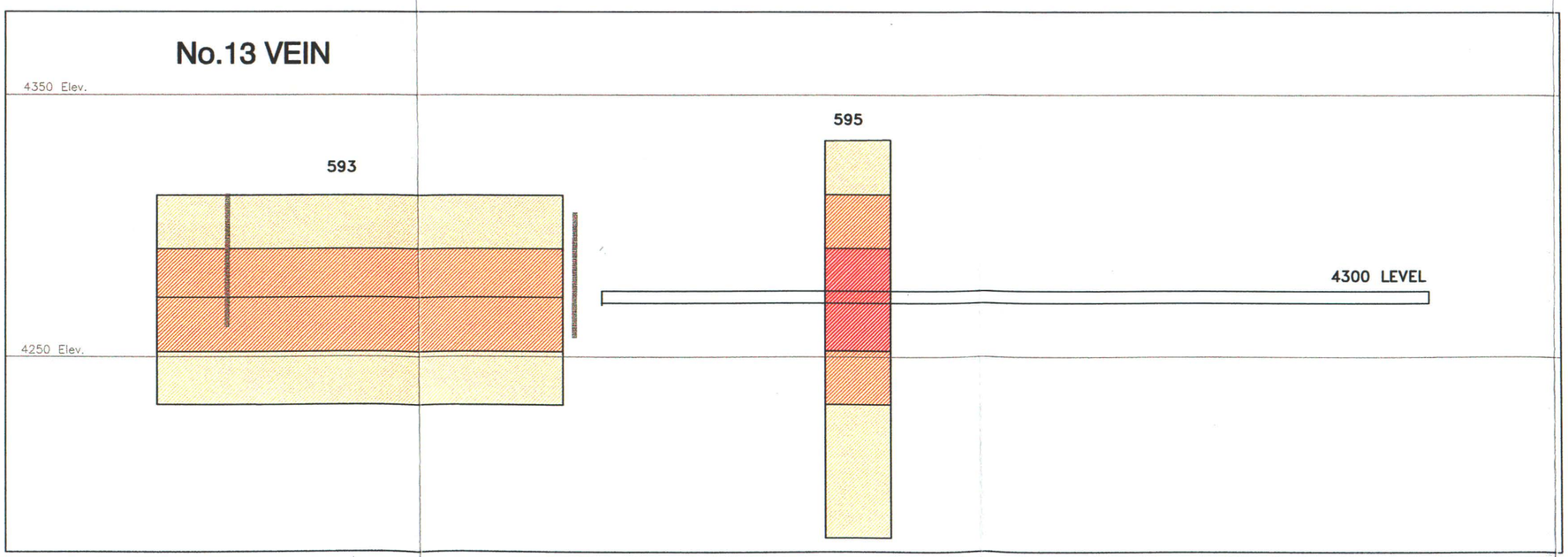


Figure 12

CLIENT: DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

PROJECT: MT. NANSEN PROJECT

TITLE: HUESTIS DEPOSIT LONGITUDINAL SECTION

APPROVAL	DESIGN	DATE
D.D.	A.R.G.	Dec. 2000

STRATHCONA MINERAL SERVICES LIMITED
TORONTO, ONTARIO, CANADA

PROJECT No.	File
905–2	Figure12.dwg

with better grade gold mineralization again associated with arsenopyrite concentrations with the exception that stibnite (antimony sulphide) appears more widespread in the Huestis. Little oxidation has been reported in the Huestis and the ores have been considered refractory by BYG geologists. No reports were available to review the metallurgy of the Huestis, but the large concentration of arsenopyrite and the reported historical problems in processing the ore would indicate the Huestis ores are in large part refractory.

Other than the one deep hole drilled in 1994 and several holes looking for extensions to the known mineralization to the north-west, no additional work has been performed on the Huestis deposit since a tonnage and grade estimate was calculated by H.W. Ranspot in 1983.

The data available for review consisted of underground chip sample plans of the 4100 and 4300 levels and an incomplete set of chip sample maps for some of the stoping lifts and some of the raises. No data on underground diamond drill holes was found.

A recalculation of the resources in the Huestis deposit was not undertaken for the same reasons as for the Webber, lack of a complete data base and the obvious fact that the resources identified by previous work programs would not be economic to mine under current conditions.

Concerns raised about several of the parameters used in the original reserve calculation for the Webber as included in the 1994 feasibility study by BYG relating to mining width, capping of high gold or silver values and categorization of reserves also apply to the Huestis.

As with the Webber deposit, because of the above concerns and the uncertain

metallurgy associated with this zone, we have simply shown the numbers in the 1994 BYG feasibility report but have moved the proven and probable ore into the indicated resource category and the possible ore into the inferred resource (Table 3).

Table 3 - Huestis Geological Resources

Zone	Tonnes	Au (g/t)	Ag (g/t)	Category
No. 11 (HW)	1 700	9.6	58	indicated
No. 12	72 000	14.6	277	indicated
No. 13 (FW)	10 200	10.7	406	indicated
Total indicated	**84 000**	**14.0**	**288**	**indicated**
No. 11 (HW)	3 500	9.6	58	inferred
No. 12	24 400	16.5	304	inferred
No. 13 (FW)	10 200	10.7	406	inferred
Total inferred	38 100	14.3	309	inferred

Resource Summary

In Table 4 a summary of the geological resources as compiled in this review is presented.

Table 4 - Summary of Mt. Nansen Geological Resources

	Indicated			Inferred		
Zone	Tonnes	Au (g/t)	Ag (g/t)	Tonnes	Au (g/t)	Ag (g/t)
Brown-McDade U/G (Breccia Pipe)	126 100	6.2	51	25 000	10.7	158
Flex Zone				40 900	4.9	158
Webber	58 500	10.5	600	26 900	7.0	472
Huestis	84 000	14.0	288	38 100	14.3	309
Brown-McDade Ore Dump	12 000	5.0	42			
Total	**280 600**	**9.4**	**236**	**130 900**	**9.2**	**266**

Several other smaller less well defined zones and showings occur on the property but not enough data was available to define resources. These zones will be mentioned in the review of the exploration potential.

The resource estimates assembled in this review have not been prepared with the same rigour or thoroughness that would be used if the estimates were to be the basis for raising funds to place the property into production or to raise funds for further exploration etc. This is due in part to the unavailability of all the data required for a complete review but also because it is apparent that the time and expense for a detailed review could not be justified by the tonnage and grades indicated by this review given what would be required to have economic potential in the Mt. Nansen geological setting and location.

Were we to do a detailed review of the Mt. Nansen resource estimate, with all historical data available, it is quite certain that lower grades would result but possibly with more tonnage if a cut-off grade of 3.5 g/t gold was maintained. However, that cut-off grade is well below the grade necessary for revenue to match operating costs

with the mining and metallurgical parameters that are attached to the Mt. Nansen deposits. Using appropriate economic factors there would not be any portion of the Mt. Nansen geological resource base that could be properly classified as a reserve and, therefore, potentially profitable to mine.

Exploration Potential

The data base available for this review was not well organized or easily accessible. Over the last year of the mine life an attempt to compile all the data into an organized format was started by BYG personnel but staff reductions prevented this from happening. In order to properly assess the exploration potential this process would have to be completed. All available data would have to be properly organized and catalogued into usable database formats. Comprehensive maps including plans, sections and long sections for all the drilling, and surface compilation maps showing the trenching results, soil geochemistry and any geophysical survey work covering each of the different zones and showings would be prepared.

A brief description of potential exploration target types and possible sources of new mineralization follows (Figure 13).

The most important forms of mineralization to date are the epithermal gold-silver polymetallic quartz-carbonate veins which comprise the bulk of mined reserves and remaining resources at the Brown-McDade, Flex, Huestis and Webber deposits. All four zones are open to depth and as evidenced by the deep hole, 94-151 at the Huestis, the gold enrichment processes are still at work 300 metres below the lowest workings. If the metallurgical concerns with these zones can be satisfactorily resolved, then the areas below the existing zones and immediately along strike have good potential to increase the resource base.

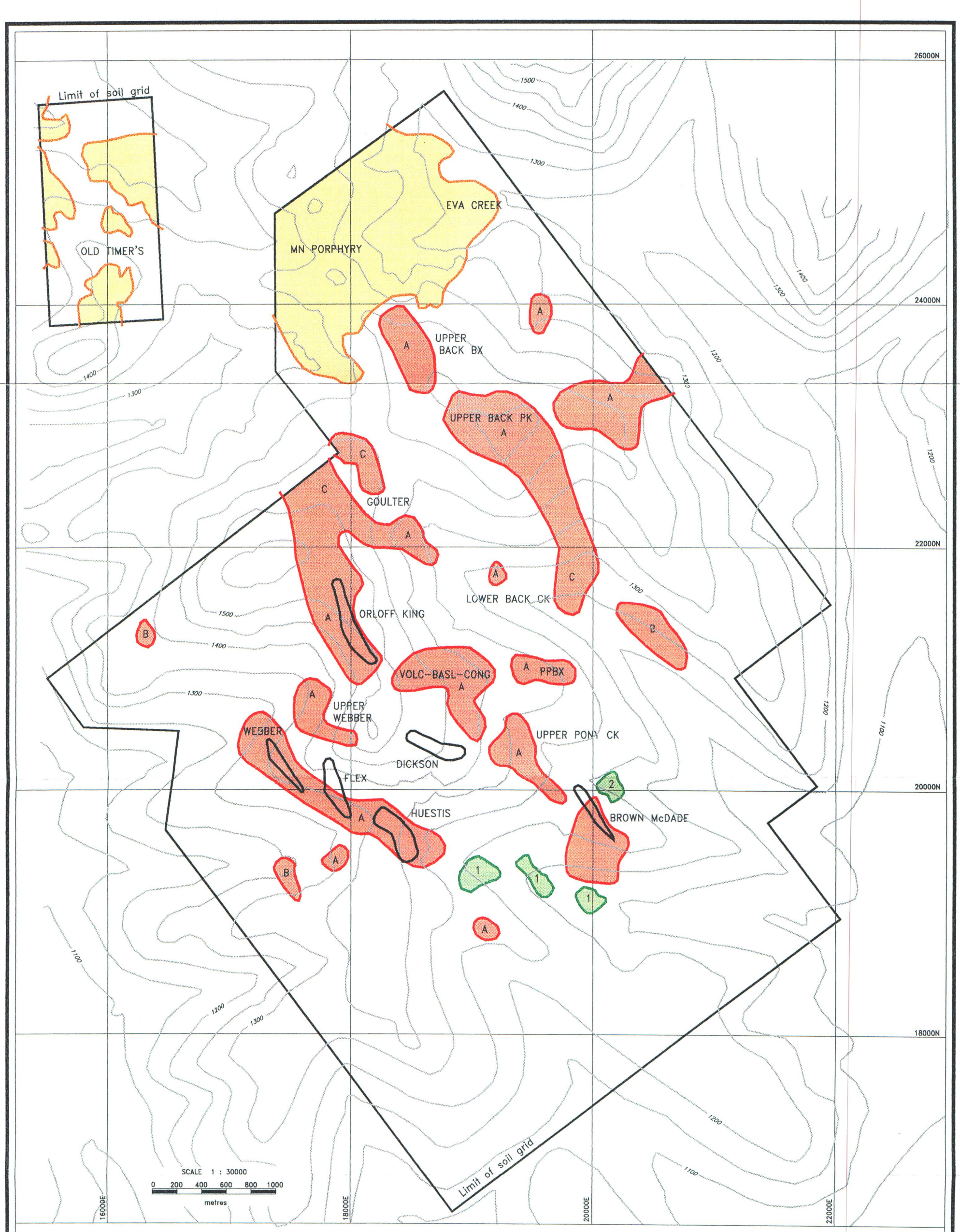


Figure 13

ANOMALOUS VALUES

Au	100 ppb
Ag	7 ppm
As	250 ppm
Bi	5 ppm
Cu	75 ppm
Mo	3 ppm
Pb	100 ppm
Sb	15 ppm
Zn	200 ppm
Cd	2 ppm

Multi-element anomaly
- A Au, Pb, Zn, Sb, As, Cd, Bi, Cu, Mo, Ag
- B Pb, Zn, Cd, As
- C Pb, Zn, Bi, Cu, Mo, Cd, Sb

Cu, Mo, Bi anomaly

Anomaly due to contamination
- 1 Contamination from mill
- 2 Contamination from Brown McDade adit

CLIENT: DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

PROJECT: MT. NANSEN PROJECT

TITLE: SOIL GEOCHEMISTRY
MULTI-ELEMENT ANOMALIES

APPROVAL	DESIGN	DATE
D.D.	A.R.G.	Dec. 2000

STRATHCONA MINERAL SERVICES LIMITED
TORONTO, ONTARIO, CANADA

PROJECT No. 905-2 File: Figure13.dwg

Several other zones and showings with similar mineralogy show some potential.

The Orloff King Zone, which is on strike and to the northwest of the Dickson structure, has been drilled with a small number of shallow holes on wide-spaced sections and extensively trenched, and has the potential to host low-grade near-surface open- pittable oxide material.

The BRX Zone which occurs on the Tawa Claim block to the northwest of the main Mt. Nansen claim block, is composed of multiple quartz sulphide veins exposed over 850 metres. Trenching reportedly has produced gold grades from 1.5 to 30 g/t over widths from 1 to 5 metres while the best drill intersection which was from hole 80-6 graded 6.3 g/t gold and 15 g/t silver over 8.9 metres (R.Stroshein 1999) .

Many untested gold soil anomalies which may represent a similar type of target occur around the property and require more follow-up which would include trenching, detailed mapping, possibly geophysical coverage and ultimately drilling if warranted. The most promising appear to be the Upper Back, Volcanic Basal Conglomerate and Upper Webber soil anomalies (Figure 13).

A second target type would be the sulphide-rich breccia pipes such as in the north end of the Brown-McDade pit and the sulphide-poor quartz-tourmaline breccias found at the PPBX showing northeast of the Dickson showing. At least eight breccia pipes have been identified on the property with most occurring within the main felsic porphyry complex. Although they appear to represent relatively small tonnages as compared to the epithermal vein targets, very little is known about their size, shape and the distribution of gold values within them. Further work is required in order to assess the potential of this type of target.

The third type of target which potentially exists on the property is the porphyry style copper-molybdenum-gold-silver mineralization. Broad copper, molybdenum and bismuth soil geochemical anomalies exist over and flanking the main Mt. Nansen porphyry and creeks draining the porphyry are actively being mined for placer gold. Cyprus Exploration is reported to have carried out exploration for this type of target in the early 1970's using both diamond and percussion drilling. This target could represent a large tonnage style of mineralization amenable to bulk mining methods.

MINING

During the period that BYG carried out mining activities at the Mt. Nansen property mining was concentrated exclusively on an open pit at the Brown-McDade deposit. Although we have not seen any monthly operating reports covering this period of activity it would appear to have been a very standard open-pit mining operation that continued to depth as far as the economics resulting from the increasing waste-to-ore ratio and poor metallurgical recovery would allow.

There was a significant clay content near surface that provided some handling problems particularly in the crushing circuits which led to the requirement for the installation of a SAG (semi-autogenous grinding) mill during the second-half of the period of operation managed by BYG. All of the remaining mineralization, if and when mined, would have to be approached through underground methods.

Underground mining has been conducted in the past primarily at the Huestis deposit but with also some underground development in the Webber deposit. As both of those deposits are narrow-vein steeply-dipping deposits the mining approach was with the traditional method of shrinkage stoping for such deposits. The other mining method that would normally be considered with those types of deposits would be cut-

and-fill if ground conditions did not permit shrinkage stoping and provided there was a source of fill.

From the data that is available on both the Huestis and Webber deposits we would assume that any resumption of mining in those areas would be based upon shrinkage stoping but with the use of more modern trackless mining equipment rather than the use of track haulage as would have been the case when these deposits were initially developed.

The resource grade for the Huestis and Webber deposits is in the range of 10-14 g/t gold. Control of mining dilution would be very important in the mining of these deposits as even those grades are too low to be economic at the current gold price. Previous experience in mining the Huestis deposit would suggest that dilution was a big problem with the mined grades being about one-half of the initial estimated reserve grade.

There is also mineralization below the Brown-McDade pit that would have to be mined by underground methods. However, the resource grade for this mineralization is but about 5 g/t gold. For grades in that range mining conditions must be ideal to allow bulk mining methods without fill requirements. In the BYG feasibility study for the Mt. Nansen project the proposal was made to mine the underground resource at Brown-McDade using sub-level retreat mining methods. However, given the dips that are indicated for some of the mineralization, which can be as low as 50°, and the mention of clay alteration in the rocks adjacent to the mineralization we would not be optimistic about the use of a bulk mining method for that setting.

At the north end of the Brown-McDade pit reference has been made to a breccia pipe with an indicated resource of 25 000 tonnes grading 10 g/t gold. This is a very small

tonnage and may indicate some exploration possibilities for incremental tonnage provided there was a mining operation that was ongoing on the property. However, it is not something that, at present, is of great interest in terms of having economic value.

The question has been raised in discussions with DIAND about whether or not the Brown-McDade pit can be used as a disposal site for the existing tailings on the property if it should be decided that it is necessary to move the tailings from their present location. Given that the mineralization below the Brown-McDade pit is of a marginal grade and is unlikely to be mined unless there is a very substantial increase in the price of gold we see no reason why the tailings could not be moved into the pit, provided that concept is considered preferable to leaving the tailings in their present location.

If the pit is filled with tailings and if, for some fortuitous reason, it is decided to resume underground mining below the pit at a later date then it should simply be a matter of leaving a crown pillar to act as a barricade between the tailings and any underground mining operations. The quantity of "ore" that might be lost in such a crown pillar with a thickness of 10-20 metres would not be very significant. If, for some reason which we cannot foresee at this time, it was ever necessary to move the tailings from the Brown-McDade pit in order to facilitate underground mining operations this would not be a big task given that the tonnage is small.

We would suggest that if the tailings are to be moved from their present location to the Brown-McDade pit that it be done during the cold weather period when the tailings would be much easier to handle than during the summer months.

METALLURGY

The Mt. Nansen deposits are not blessed with easy metallurgy and this has been perhaps the major factor resulting in the difficult periods of operating activity on the property.

Recovery of both gold and silver presents challenges that combined with marginal resource grades makes positive economics for the property very difficult. Much of the gold, perhaps 30-50%, is encapsulated in primary sulphide minerals such as pyrite and arsenopyrite and even fine grinding will not readily liberate the gold so that it is accessible to cyanide leaching. This particular form of gold is designated as "refractory" gold. Most of the balance of the gold is either exposed in mineral particles that will allow dissolution with cyanide leaching after grinding or as liberated gold in the form of electrum.

The original period of operation in 1968-69 when the Huestis deposit was being mined included the operation of a flotation plant the product of which was a sulphide concentrate containing the refractory gold which would then be sent to a smelter for processing to recover the gold and base metals. A portion of the gold that would be called "free gold" that was not attached to sulphide minerals and would, therefore, not respond to sulphide flotation remained in the tailings and consequently the small tonnage of mineral that was processed during that period resulted in a very high tailings grade. In reading the few reports we have found concerning that period it was the strong recommendation and intent of the operators to install a cyanide leaching plant to treat the tailings from the flotation circuit that would have allowed the recovery of this free gold but that was not done.

Summary operating results from 1968-69 period are enclosed in Appendix IV and

indicate that the grade of the Huestis material being treated graded about 8 g/t gold and 150 g/t silver and thus confirmed the dilution problems mentioned earlier as the ore reserve grades reported at that time were more than twice the grades for material delivered to the mill. Recoveries in the flotation concentrate during the four-month period of operation varied from 48% to 67% for gold and about 80% for silver. There was also a brief period of operation in 1975 for which we have no metallurgical or production results.

During the BYG period of operation the material treated was exclusively oxide ore from the Brown-McDade pit and this offered two principal advantages. One was that all of the ore was free-milling given that the sulphides had been converted by nature to oxides and, therefore, there was no refractory gold and the ore was readily amenable to cyanide leaching in a very standard process circuit. There was also the effect of supergene enrichment which is common in gold deposits where surface weathering and oxidation has allowed a concentration of gold at levels that are usually higher than in the underlying primary mineralization.

These two factors resulted in the positive results that BYG had for the Brown-McDade open pit from December 1996 to June 1997. During that period higher grade material was treated with gold recovery of 80% or better and again those results are summarized in Appendix IV.

If BYG had continued to operate the Mt. Nansen property they would have been required to install facilities to treat primary sulphide ore. The Brown-McDade open-pit oxide resource had been almost depleted and the only other oxide material on the property with continuity would appear to be in the Flex deposit but this would be an underground operation with resource grades of the order of 5 g/t gold and, therefore, not very attractive.

In the BYG feasibility study in 1994 the assumption was made, as indicated by an extract that we have included in Appendix IV, that the simple cyanide circuit that had been installed for the oxide material could continue to be used for mixed oxide-sulphide ores and even sulphide material and yield recoveries of greater than 80%. These assumptions proved to be incorrect as gold recoveries during the last few months of the BYG period of operation declined to 50% when a mixture of oxide and sulphide material was apparently being delivered from the Brown-McDade pit.

The usual approach when processing refractory sulphide ores is to produce a sulphide flotation concentrate and to have cyanide leaching of the tailings from the flotation circuits very much as was planned in 1968 but never carried through to completion. The sulphide flotation concentrate can be sold to smelters or treated in a roasting plant such as existed at the Giant mine in Yellowknife if gold is the only element to be recovered and base metal values are not of interest. The transport cost for this sulphide concentrate and the extra processing cost in turn mean the need for higher ore grades for deposits that contain refractory ores as compared with those that have free milling ore.

In deposits that have very large resources and reserves of refractory ore then the modern approach to treating such ores is to install autoclaves where the material is subjected to high pressures and temperatures along with acid to break down the sulphides and result in a product that can be easily treated in a conventional cyanide leaching circuit. The Campbell mine at Red Lake in Ontario and several large operations in Nevada are examples where the capital expenditure required for autoclave installations can be justified because of the large reserve base. The indicated resources at Mt. Nansen, even allowing for a great deal of optimism about exploration potential, do not anywhere approach the threshold requirement for this resource base and thus any treatment or processing of refractory ores from Mt.

Nansen is always likely to involve the production of a sulphide flotation concentrate for shipment for further processing elsewhere.

ECONOMIC ASSESSMENT

The Mt. Nansen property has had a troubled history from an economic perspective. During two earlier periods of operation it was necessary to cease operations when revenue did not meet operating costs and cashflow deficiences resulted. Similarly BYG Natural Resources had to cease operation after cashflow became negative and problems were encountered in adhering to the terms of the water licence. However, during their period of operation BYG did have at least two good quarters from January to June 1997 when the combination of good grade, good metallurgy and relatively easy mining conditions at the top of the Brown-McDade pit allowed operating profits to be generated which also was very much aided by a gold price during that period of about US$350 per ounce. At the time of closure in February 1999 the gold price had declined to US$287 and this decline was only partially offset by a modest weakening of the Canadian dollar with respect to the US currency.

During our visit to the Mt. Nansen property we were not able to locate operating reports with cost data etc. that we would normally expect for such an operation but did locate financial statements through to September 30, 1998 which have been enclosed in Appendix II. We have reviewed those statements but have mainly relied upon our experience with many other gold mining operations with somewhat similar underground mining conditions in assessing the future for this property.

Our observations on the principal elements involved in an economic analysis of the property are covered in the following sections.

Ore Reserves

There are no ore reserves on the Mt. Nansen property as the term "reserves" implies that the material is economic to mine and there is no such material at present on the property with current gold prices. As a consequence all mineralized material which we have inventoried in a previous section is designated as mineral resources. The tonnage of these resources is relatively small and at a mining rate of 500 tonnes per day, or 150 000 tonnes per year, which would be about the minimum scale of operation for a viable mining operation in the area, the indicated resources would be depleted very quickly. Only if there were resources of very high grade of 20 g/t gold or higher would it be conceivable to think of a smaller scale operation.

There is potential on the property to find additional tonnage but grade is the most important variable in assessing the economics of small-tonnage narrow-vein underground mines. Given that the grades for several zones, or deposits, on the property have already been indicated it is unlikely that further exploration will find higher grades but this is not impossible.

The grade that has been indicated for the underground geological resources of the Huestis and Webber Zones has been previously indicated at 14 and 10 g/t gold respectively. The mineable reserve grade will depend on the mining method but experience with previous mining of the Huestis Zone in 1968-69 indicated significant problems with dilution. Such problems are usual with narrow veins because of changes in width, direction and because the ore tends to be in shoots with a relatively short strike length. As a consequence much development and sampling is required including diamond drilling to adequately define deposits of this nature prior to mining and in most cases dilution will be a major factor. Rather than assign arbitrary grade reductions to the resource grades that have been calculated, the effect

of differing mineable reserve grades on the economics of the project are indicated and our economic analysis has used grades of 5, 10 and 15 g/t gold irrespective of whether that grade originated from the Huestis or the Webber deposits or any other similar deposit to be discovered on the property.

Revenue

The determination of revenue from the mining of ore on the Mt. Nansen property depends on ore grades, metallurgical recoveries, gold and silver prices and the currency exchange rate between the U.S. and Canadian dollar. We have provided in Table 5 a listing of the main parameters to which we have assigned values for the purpose of the calculation of revenue. These parameters are based upon our assessment of past Mt. Nansen operating experience, studies compiled by BYG, and our own experience with other operations.

As noted above mineable reserve grades have been assumed to be either 5, 10 or 15 g/t gold. At Mt. Nansen there are two forms of gold as has been explained previously with one being considered "free gold" and relatively amenable to conventional cyanide leaching whereas the other portion of the gold is considered to be refractory which requires more complicated and expensive processing.

From a review of mineralogical reports and past metallurgical performance we have assigned 60% of the indicated gold grade to the free gold category and the balance as refractory with recovery in a sulphide flotation concentrate that would have to be shipped to a process facility elsewhere for recovery of precious metals thus incurring substantial transportation and processing costs. In the cyanide leach circuit we have allowed for 90% recovery of the gold with associated 7% credit of the gold value for silver payment based upon the experience during the BYG period of operation. Gold

Table 5

Revenue Calculation Parameters

Mineable reserve grades	- 5, 10, 15 g/t Au
Gold distribution	- 60% free
	- 40% refractory
Gold recovery	
Free gold	- cyanide leach- 90%
Refractory	- sulphide concentrate- 80%
Sulphide concentrate	
Concentration ratio	- 10
Shipping	- $150/tonne
Smelting and refining	- $200/tonne
Gold recoverable and payable	- 90%
Silver concentrate grades	- 1000, 1500, 2000 g/t
Silver recoverable and payable	- 90%
Silver payment from leach circuit	- 7% of gold
Gold price	- US $300 per ounce
Silver price	- US $5.00 per ounce
US$ / C$	- 0.67

recovery in the flotation concentrate has been estimated at 80% based upon the experience in 1968-69 when a flotation circuit was operating. This sulphide concentrate has been assigned a silver credit of 1000, 1500, and 2000 g/t to correspond with the three different gold reserve grades that have been assumed. Determining the concentration ratio in floating the sulphide concentrate has been difficult as the 1968-69 period of operation suggested a 5% weight of concentrate per tonne of ore treated whereas all the BYG metallurgical testwork suggested 15% and higher.

Shipping of sulphide concentrate to a process facility has been allowed for at a rate of $150 per tonne which was about the cost of shipping silver-lead concentrate from Keno Hill for processing elsewhere. Smelting and refining costs per tonne of concentrate have been allowed for at $200 per tonne with payment for both gold and silver including allowance for recovery placed at 90%. These values have been derived from other projects on which we have worked with but in almost all those cases there was base metal content in the concentrates that shared some of the processing costs whereas the Mt. Nansen concentrate would appear to have very little other value beyond the gold and silver associated with the pyrite and arsenopyrite sulphide minerals.

The price of gold has had a difficult period since 1995 and nor does it appear any brighter for the future. In Appendix V we have enclosed a summary of the most recent report on gold markets by Gold Fields Mineral Services Ltd. which is generally considered to be the most comprehensive review of gold markets and is widely referenced in the industry. The price of gold for both 1999 and 2000 has averaged US$279 per ounce and is currently at US$268 per ounce. Although there are many hopes for higher gold prices there are no credible sources that are forecasting higher prices in the near future. Again using every opportunity to give the Mt. Nansen

property the benefit of the doubt we have used a gold price of US$300 per ounce in our analysis.

Similarly the outlook for silver prices is not any better than that for gold with the current price having declined to about US$4.50 per ounce but we have used US$5.00 per ounce given that the average in 2000 was US$4.95. For conversion of US dollar metal prices to Canadian dollars we have valued the Canadian dollar at US$0.67 which is at about the current level.

Operating Costs

We have been unable to locate detailed operating cost statements for the BYG period of operation at Mt. Nansen but did find in association with some internal memos on expected future cashflows their expectations for operating costs for the period July to December 1997 when the Brown-McDade open pit was to be the sole source of ore (Appendix VI). As all of the current remaining resources would be mined underground and would require a different flowsheet there are not many costs from the BYG period of operation that would be relevant.

We also have reviewed the BYG feasibility study of 1994 and their forecasts for operating cost which we have enclosed in Table 6 below along with the actual operating cost totals for each of the two fiscal years 1997 and 1998 which indicate that the feasibility study estimates substantially underestimated the actual costs experienced for the Brown-McDade open pit.

Table 6

Brown-McDade Operating Cost History

	Feasibility Study	Actual for year ending	
		Sept. 30, 1997	Sept. 30, 1998
Tonnes milled	327 900	101 800	109 400
Total costs $ x 10^3	$ 16 540	$ 7 240	$ 8 700
Cost per tonne	$ 50.50	$ 71.10	$ 79.50

In the BYG feasibility study there were also estimates of operating costs for underground mining of the Webber deposit at $114 per tonne and that tabulation is also enclosed in Appendix VI. The assumption was made that cyanide leaching would apply to the Webber Zone as it did for the Brown-McDade oxide zone but, as mining the lower part of the Brown-McDade has shown, where there is some sulphide material metal recoveries drop very quickly and, therefore, the assumption that the Webber material can be handled with a simple leach plant would appear to be in doubt.

We would fully expect that all of the cost estimates prepared by BYG for the Webber and Huestis Zones would be much higher in reality as was their experience with Brown-McDade.

To provide further background on operating costs for underground gold mines with Mt. Nansen type vein structures we have assembled from our files in Appendix VI a listing of various projects in which we have been involved and for which we had cost data to indicate the range of operating cost that would be possible for settings similar to Mt. Nansen. It is never possible to have exactly the same situation with all

factors pertaining to mining, processing, location etc. but the listing does give an impression of the range of unit costs per tonne that underground gold mines have experienced.

Mines on the list that might be most comparable to Mt. Nansen would include the Joe Mann mine in Quebec where mining was done with shrinkage methods and a copper flotation concentrate was produced with gold credits as well as a portion of the gold being recovered in a cyanide leach circuit. That mine recently closed because of negative cashflow at the current gold price. The other mine that produced a flotation concentrate was the Giant mine in Yellowknife, which by now will be well known to DIAND, and which treated the sulphide flotation concentrate through roasting and subsequent leaching of the residue. The Giant flowsheet is enclosed in Appendix IV. Historically the Giant mine has had a much higher reserve grade than has been indicated for Mt. Nansen as well as the benefit of many working places that allowed a relatively large daily tonnage mined and further economies of scale.

A detailed review of operating costs as might be expected for a feasibility study cannot be justified at this stage as the final conclusions concerning the potential operating margins for the indicated resources at Mt. Nansen are so evident. We have, therefore, allowed for a range of operating costs in Table 7 that provides the highs and lows of the range of cost estimates that would be expected for the principal areas of activity should there be a resumption of mining at Mt. Nansen based upon the current underground resources. As with the determination of revenue estimates the middle of the range of cost estimates is probably somewhat on the optimistic side but the intent is to provide this assessment of Mt. Nansen every opportunity to be positive.

Table 7

Mt. Nansen Underground Operation

Range of Revenue and Operating Cost Estimates

- C $ per tonne milled -

Revenue or Cost Item	Mineable Reserve Gold Grade		
	5 g/t	10 g/t	15 g/t
Revenue			
Free gold ore	$38.90	$77.70	$116.60
Silver credit	2.70	5.40	8.10
	41.60	83.10	124.70
Refractory gold ore			
Sulphide concentrate - gold	20.70	41.40	62.10
- silver	10.80	16.20	21.60
	31.50	57.60	83.70
Less - concentrate shipping	15.00	15.00	15.00
- smelting and refining	20.00	20.00	20.00
	35.00	35.00	35.00
	-	22.60	48.70
Revenue per tonne	$41.60	$105.70	$173.40
Operating costs			
Mining		$ 80-120	
Milling - cyanide leach		15- 25	
- flotation		15- 25	
Administration and other		15- 30	
Operating costs per tonne		$125-200	
Operating margin per tonne	NIL	NIL	NIL-$48

Operating Margins

In our economic analysis we have compiled in Table 7 a summary of the estimates of revenue and operating costs with the resulting difference being the operating margin per tonne of ore processed and before any recovery of capital expenditures. In the tabulation we have indicated the effect of grade through our assumption of using grades of 5, 10 and 15 g/t gold. This very simple analysis indicates clearly that Mt. Nansen does not have resources that can be mined economically. Nor is it likely that the property will have resources that are economic for some time in the future given the indicated limits of the grade that might be expected to be found on the property and the current outlook for gold and silver prices.

Only when the mineable reserve grade exceeds 15 g/t gold could there be any hope of identifying some material that could be properly designated as ore on the property. This would be a very high threshold target given the grade of mineralization found to date. Thus under current precious metal market conditions and with the modest grades that have been indicated, the narrow vein structures and the difficult metallurgy, we see no reason to be optimistic about the economic future of the Mt. Nansen property.

A detailed cashflow model as requested in the original DIAND terms of reference has not been prepared as we do not think that the enclosed analysis of potential operating margins justifies the preparation of such a model that would require even more assumptions than we have made to carry out this analysis. Mt. Nansen will require much higher grade, higher metallurgical recoveries, higher metal prices and lower operating costs than are currently considered reasonable forecasts before approaching the boundaries of what might be considered an economic or profitable mining operation.

Similarly, we have not estimated the cost of refurbishing or replacing the present process facility on the property as we see no economic basis for doing so. As indicated in our letter of March 24, 2000 (Appendix I) it is recommended that the existing plant and equipment be removed from the property as there is no expectation of using this facility in the foreseeable future.

ENVIRONMENT AND RECLAMATION ([1])

Summary

The past environmental management of the Mt. Nansen minesite has not been good and there are several high priority environmental issues which must be addressed in the short term. Nonetheless, the reviewed documentation indicates that the tailings dam does have an acceptable factor of safety regarding slope failure and which should improve as the tailings pond water level is lowered. Additionally, in spite of the generally poor performance of the water treatment plant, there does not appear to have been a significant negative impact on downstream surface water in Victoria Creek where aquatic resources are known to exist.

The highest priority must be placed on implementing improvements to the water treatment plant such that the treatment and discharge of tailings pond water can resume. The initial work suggested by Tom Higgs of AGRA Simons Ltd. in his report of February 18, 2000 is realistic.

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[1] This section of the report has been prepared by Eric Denholm, formerly with Anvil Range Mining Corporation and now with Gartner Lee and Associates, Yellowknife

Improvements to the tailings seepage water handling system share the highest priority with the necessary improvements to the water treatment plant. The current system of returning seepage water back to the tailings pond is exacerbating the physical stability concerns regarding the tailings dam.

Including the above two highest priority issues, the principal objective from an environmental management perspective should be the selection and design of a long-term reclamation plan for the tailings impoundment. Some fundamental information is not available which should be collected through engineering and field investigation programs.

Current and Short-term Environmental Issues

The most important current and short-term environmental issues at the Mt. Nansen site revolve around the tailings impoundment and this is recognized in the existing documentation and by the DIAND staff involved with management of the site. The issues include: (1) managing and treating the pond water and seepage water, and (2) ensuring that the dam meets appropriate physical safety standards by maintaining a low water level in the tailings pond.

The current system of returning tailings seepage water back to the tailings pond for storage is self-defeating in that this represents a closed loop for progressive leaching of contaminants into the groundwater system and progressive thawing of the foundation soils. Further, impacts to surface water in Dome Creek are occurring as a result of tailings seepage water which escapes the seepage collection system. For example, an accidental overflow from the seepage collection pond occurred in January 2000 (Whittley, 2000).

Recent (1999) treatment of the tailings pond and seepage water was not adequately performed and discharge was legally allowed during fall 1999 only because of a short-term exemption from toxicity testing. Discharge for the 1999 treatment season was stopped in December because the term of the exemption had expired and toxicity tests could not be passed. Improvements to the water treatment plant should be implemented and the discharge of effluent should be resumed as soon as possible.

Current professional engineering reviews of the physical stability of the tailings dam (EBA, 2000 and Klohn-Crippen, 2000) indicate that the dam has an acceptable factor of safety for slope failure provided that the pond water level is maintained low enough to provide a tailings beach, 50-metres wide, along the upstream face of the dam. The potential for liquefaction of the embankment and foundation soils under seismic stress is an outstanding factor which has not yet been analysed.

A second short-term environmental issue involves the Brown-McDade open pit. The small amount of water observed to accumulate in the north section of the pit is contaminated with metals (pers. comm. R. Stroshein) but there is no plan in place for management of this water. A simple water balance for the pit is required which will indicate the elevation to which the pit is expected to fill with water.

The presence of some residual containers of chemicals or used oil on the site is documented in Conor Pacific, 2000. Clean up of any chemical or petroleum products which have spilled onto the ground should be undertaken and appropriate storage should be ensured such that contamination of the local area is not increased in the short term.

Longer-term Environmental and Reclamation Issues

The primary long-term environmental issues also revolve around the tailings impoundment.

There is some fundamental information which is required before conclusive evaluation of long-term management alternatives for the tailings impoundment and open pit can be performed. The information required includes: (1) a simple water balance for the Brown-McDade pit, (2) development of a hydrologic model for the tailings impoundment and Dome Creek, and (3) possible testing of the leaching characteristics of the tailings or other relevant support research.

The alternatives currently put forward for reclamation of the tailings impoundment include:

(1) redistribution of tailings within the impoundment and construction of a low permeability cover over the tailings such that no water is impounded behind the existing tailings dam;

(2) relocation of some tailings to the Brown-McDade open pit such that tailings in the pit are flooded behind a new dam and the existing tailings dam is required to impound water over the long term;

(3) relocation of all tailings to the Brown-McDade open pit such that the tailings are flooded behind a new pit dam and the existing tailings dam is removed.

Alternative No. 1 is the preferred plan at this time due, in part, to the uncertainties regarding the ability to flood tailings in the Brown-McDade open pit.

The Brown-McDade open pit represents a second long-term issue. The north section of the pit currently holds a small amount of water and it is unclear as to whether additional water will accumulate in the pit or whether seepage losses through the lower walls and floor of the pit are great enough to prevent the accumulation of water. A simple water balance for the pit as described above is required to resolve this issue.

The rock dumps are not considered to be a high priority for reclamation planning or reclamation work at this time. Notwithstanding that some minor quantity of sulphidic waste rock was placed onto the dumps, the potential for acid generation to become a significant water quality issue is considered to be remote. The preferred approach is to perform relatively minor surface reclamation work intended to improve land use values. This approach might change if on-going monitoring of toe seepage and surface water quality in Dome Creek were to indicate that the dumps were having a significant impact on surface water quality.

Reclamation of the exploration trenches on the site should be determined on a trench-by-trench basis. Consideration must be given to comparing the potential disturbances created by mobilizing heavy equipment with the potential benefits of filling or resloping trenches that may have stabilized with colonization by natural vegetation.

The environmental issues surrounding contaminated soils, residual chemical products, etc. at the plantsite would be dealt with at the time of dismantling of the mill. There is no advance planning work recommended until such time as mill dismantling is underway.

Other long-term environmental issues such as the powerline, old exploration sites, camp buildings, etc. are documented (esp. Conor Pacific, 2000) and are not described in detail.

Reclamation Costs

The unit costs, material quantities and other costs which are presented in Brodie 1998 were used in this cost presentation as much as possible. This was done to maintain some consistency with the previous cost estimate in the format preferred by DIAND.

Fully one-half of the $8.0 million reclamation cost presented in Brodie 1998 is money required to build a fund earning interest of 2.75% which will support water treatment from years 8 through 100 following the implementation of surface reclamation measures. This timeframe is an ultra-conservative assumption which must be investigated further before being used as the basis for a cost estimate. In other words, if all reclamation costs as presented in Brodie 1998 were used with water treatment planned for only 7 years following implementation of surface reclamation measures and 100 years of monitoring and water sampling were planned, then the total reclamation cost would be only $4.0 million.

If water treatment is deemed necessary for 100 years following implementation of surface reclamation measures as is allowed for in Brodie 1998, then the $2.1 million allotted for surface reclamation measures should be saved and used to build the fund since it would be apparent that the prescribed surface reclamation measures were not expected to significantly improve the long term environmental status of the site.

Since the tailings impoundment represents the dominant reclamation issue for the site, three alternatives are considered for reclamation of the tailings impoundment as described below. The first reclamation plan is preferred at this time.

The first plan involves the relocation of tailings within the existing impoundment such that no water is impounded behind the dam (fill in the pond) and such that surface contouring and a low permeability cover shed water into the Dome Creek diversion. This plan is based on the assumptions that: (1) a low permeability cover over the tailings (not flooded) will be adequate to reduce the release of contaminants from the tailings to the degree where there is not a significant impact on downstream surface water; and (2) long-term physical stability standards could be met for the tailings dam in the case where no water is impounded behind the dam. In this plan groundwater seepage could be readily monitored and collected as required (as compared to the following two alternatives where tailings placed into the Brown-McDade open pit could release seepage that would be more difficult to monitor and collect). This plan requires that the diversion of Dome Creek be upgraded and maintained.

The second plan for reclamation of the tailings impoundment is the plan described in Brodie 1998 wherein some tailings are relocated into the Brown- McDade open pit with the intention for flooding behind a small dam constructed at the south end of the pit while the majority of the tailings remain within the existing impoundment either beached or submerged. Dome Creek is re-routed back into the impoundment and a large spillway is constructed for the tailings dam. Because the tailings dam is required to impound water, a toe buttress is constructed to increase the physical stability. This plan is based on the assumptions that: (1) the pit will hold water sufficient to submerge the tailings, (2) the tailings dam (which is required to impound water over the long-term) will meet long-term physical stability standards with only

minor upgrading; and (3) the tailings will not leach contaminants to a significant degree into the environment from the open pit or tailings impoundment. The plan suggests hydraulic monitoring to move the tailings but would need to address the potentially negative impacts of introducing a large amount of excess water into the tailings impoundment. This plan is not preferred at this time because (1) it is uncertain as to whether the pit can be flooded to an adequate elevation; (2) the plan may increase liabilities due to the possibility of developing groundwater contamination in a second location and due to the introduction of a second earth dam which is required to impound water over the long-term; and (3) it is uncertain whether the tailings dam will meet long term stability standards with only minor upgrading given that water is required to be impounded behind the dam.

The third plan for reclamation of the tailings impoundment is the complete relocation of all tailings into the Brown-McDade pit. This plan represents the ultimate plan for long-term physical stability of the tailings dam because the dam is removed. Another relatively large dam would be required, however, to create the necessary storage volume in the open pit. This plan is based on the assumptions that: (1) the pit will hold water sufficient to submerge the tailings; (2) adequate storage volume can be created in the pit with a dam; and (3) the tailings will not leach contaminants to a significant degree into the environment from the open pit once flooded. The plan requires reclamation of disturbed areas in the tailings impoundment area and the restoration of Dome Creek to the original channel. This plan is not preferred at this time because of the large uncertainty regarding the flooding of tailings in the Brown-McDade open pit. This would require the construction of a relatively large earth dam which would be required to impound water over the long term and this would largely offset the benefit gained by removal of the existing tailings dam.

In all three tailings impoundment reclamation alternatives collection and treatment of the already contaminated seepage from the tailings will be required for an unknown length of time. In the absence of a hydrologic model of the tailings impoundment/Dome Creek area, an estimate of three years is used for the length of time for contaminated seepage which is already in the groundwater system to pass through the system following the implementation of surface reclamation measures. Brodie 1998 suggests a timeframe of seven years for the flushing of residual contaminants from the tailings solids for the flooded scenarios (alternatives no. 2 and 3).

The reclamation cost presented in Brodie 1998 included the placement of some waste rock into the Brown-McDade open pit (assumed flooded) along with two tonnes of lime per 100 tonnes of rock. This work is considered unnecessary as the potential for acid generation in the waste rock piles is considered remote and this work is not included in the costs. Brodie 1998 also included costs for placing fill material in the pit which is assumed to have been intended to improve the physical stability of the pit walls which is not considered necessary.

There is no cost in the estimate for dismantling of the mill or camp buildings or their internal equipment although some costing is included for demolition of minor ancillary buildings. Such costs should be covered by the resale value of the process equipment.

The potential reclamation costs for the site are summarized below in Table 8 for each of the three reclamation alternatives described above and details of the cost calculations are shown in Appendix VII. The most likely cost (related to the most likely treatment timeframe) for each alternative and the worst case cost allowing for 100 years of water treatment (as presented in Brodie 1998) for each alternative are shown.

Table 8

Estimated Costs for Reclamation Alternatives

Item	Cost ($ millions) Capital	Treatment	Total
Alternative No. 1 (preferred)			
(redistribution within impoundment and low permeability cover)			
likely treatment timeframe: 7 yrs	$2.6	$2.3	$4.8
worst case treatment timeframe: 100 years	$2.6	$6.3	$8.9
Alternative No. 2			
(tailings in both pit and tailings impoundment)			
likely treatment timeframe: 10 yrs	$2.1	$3.0	$5.1
worst case treatment timeframe: 100 years	$2.1	$6.7	$8.8
Alternative No. 3			
(flooded tailings all in the pit)			
likely treatment timeframe: 7 yrs	$3.7	$2.3	$6.0
worst case treatment timeframe: 100 years	$3.7	$6.4	$10.0
Brodie 1998 (for comparison purposes)			
(similar to alternative no. 2)			
treatment timeframe: 100 years	$2.1	$5.9	$8.0

Notes: 1. All alternatives for all treatment timeframes include funding for 100 years of monitoring the site for physical stability and water chemistry and an allowance for a small amount of physical maintenance work as described in Brodie 1998.
2. "Capital" costs are incurred to develop and implement surface reclamation measures.
3. "Treatment" costs are required to build a fund earning 2.75% interest to support water treatment and long term site monitoring and maintenance work.

Recommended Short-term Action Plan

1.1. Environmental planning work must be managed under a coherent site plan. For example, analyses for dissolved metals should be performed in addition to total metals for all surface water samples because the concentrations of dissolved metals are essential for water treatment and reclamation research work. Additionally, costly field

and consulting work for detailed investigation of specific components of possible future plans should not advance ahead of the development of an improved short-term water treatment process or the development of alternate long-term plans.

1.2. Improve the current short-term water management and water treatment process. There are two issues. First, ensure that the water is adequately treated to meet the terms of the water licence and this could be accomplished by modifications and upgrades to the existing treatment plant (as described in Higgs, 2000) or by applying for an amendment to the licence to move the compliance location for toxicity testing only to a downstream location such as the mouth of Dome Creek. Second, cease returning seepage water back into the tailings pond and this could be accomplished by providing continuous year-round treatment or by providing an alternate storage location. Inherent in this recommendation is the necessity to treat as much tailings pond and seepage water as possible even to the point of draining the tailings pond dry.

1.3. Develop a simple water balance for the Brown-McDade pit. This could be accomplished by a comparison of inflow rates from the observed low wall seep plus precipitation with observed changes in the in-pit water level. This water balance is required for both short-term management of the pit and the evaluation of long-term alternatives for the tailings impoundment.

1.4. Develop a hydrologic model of the tailings impoundment/Dome Creek area. This may require the installation of some additional boreholes for sampling of groundwater. Such a model will indicate the degree to which seepage from the tailings pond is currently escaping below the seepage collection pond and will also indicate the timeframe required for treatment of seepage water following implementation of surface reclamation measures.

1.5. Perform testing of the leaching characteristics of the tailings or other research appropriate to evaluation of various long-term reclamation alternatives. The alternatives envisioned at this time include tailings exposed to the atmosphere, flooded tailings, or tailings under a low permeability cover. This work should not be performed until the various reclamation alternatives to be evaluated are defined.

Preferred Reclamation Plan

A summary of the preferred reclamation plan is as follows and cost details are included in Appendix VII*:

1. Redistribute tailings within the tailings impoundment such that surface contours do not contain any ponded water and surface water is shed into the Dome Creek diversion.

2. Construct a low permeability cover over the tailings.

3. Upgrade the Dome Creek and tailings west diversions to minimize seepage losses and to pass appropriate flood events.

4. Collect and treat tailings seepage water until water chemistry is acceptable (say 7 years) including installation of pumping wells if necessary.

5. Treat pit pond water in-situ with lime on 2 to 4 occasions and monitor water chemistry.

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* Eric Denholm has compiled this cost estimate from the Brodie 1998 report. There is the possibility that the program could be completed for less and in particular that there could be less of a requirement for long-term maintenance, replacement of tailings cover etc.

6. Upgrade the existing water treatment and seepage handling systems.

7. Construct hydraulic bulkhead in Pony Creek adit if pit water balance indicates that flooding to this level is likely.

8. Provide funding for site monitoring for physical stability and water chemistry for 100 years including minor physical maintenance tasks.

9. Fund replacement/repair to low permeability tailings cover at 50% replacement every 25 years for 100 years.

10. Perform minor resloping followed by revegetation of rock dumps and monitor toe seepage.

11. Evaluate desirability of reclamation of individual exploration trenches and reclaim only those where benefit will be gained.

12. Perform appropriate clean up of contaminated soils and removal of hazardous/special wastes at the time of dismantling of the mill.

Tailings Dam Physical Stability

The original design of the tailings dam including the site selection and the construction supervision was provided by Klohn-Crippen Consultants Ltd. Geotechnical inspections of the tailings facility were conducted in 1997 by Klohn-Crippen and in 1998 by EBA Engineering Consultants Ltd. (although no report was located regarding the 1998 inspection). Both of these firms were involved with a

recent (2000) assessment of the dam physical stability. The operation of the tailings facility was not managed according to the design and this is well documented.

The dam consists of a geosynthetic clay liner installed within a compacted sand embankment. The design required that a 50-metre wide tailings beach be constructed along the upstream face of the dam at the start of operations to act as the primary seepage barrier. This beach was not constructed until well into operation of the facility and well after elevated pond water levels had occurred. The result of the delay in construction of the beach was that a high rate of seepage had already been established with negative consequences on foundation thawing and dam integrity.

A toe berm was constructed in 1997 by BYG in response to physical stability concerns. The pond water level has generally been maintained at a high elevation throughout the operation of the facility such that the high rate of seepage has continued. The tailings beach is currently not the required 50-metre width but this can be achieved by lowering the pond water level.

Seepage from the tailings pond is an order-of-magnitude greater than that anticipated in the design (Klohn-Crippen, 2000). This increased rate of seepage has impacted on the physical stability of the dam in several ways. Seepage has contributed to thawing of the frozen foundation permafrost soils which has and will continue to pose a threat of subsidence and deformation of the dam. The seepage may also develop into piping of dam construction soil which could result in failure of the dam structure.

Even in light of the above, Klohn-Crippen 2000 states that the dam currently has a satisfactory factor of safety for slope failure. Further reductions in the pond water level through treatment and discharge of pond water will result in an increase in this factor of safety. An analysis of the dam and foundation stability under seismic

loading was intended to be performed following mine closure and Klohn-Crippen 2000 recommends that this study should be performed.

The dam design did not require excavation of the foundation soils to bedrock and this was not done. Limited stripping into the surficial organic layer was done (EBA 2000) but the then frozen foundation soils were left largely intact. The native layer of organic soil underlying the dam has thawed in some locations since construction of the dam (EBA 2000). The native sand underlying the organic soil remains frozen but is generally warming with time at a slow rate (about 0.1 deg C per year (EBA 2000)).

The general conclusion regarding the dam physical stability in the short term is that the dam is acceptable provided that the pond water level is maintained at a low level such that a 50-metre wide beach along the upstream face of the dam exists. The seismic stability analysis should be done but professional consultation should first be sought to determine whether the analysis would be most beneficial if conducted immediately or after a long-term reclamation scenario has been selected (i.e. dry pond or flooded pond).

Some confusion exists regarding the inlet invert elevation of the tailings dam emergency spillway which should be resolved. The documentation suggests that there has been no overflow through the spillway and that the inlet invert elevation is higher than design. However, anecdotal evidence suggests that there has been some small amount of overflow in the spillway and that water enters the spillway at the elevation of the buried impermeable liner rather than at the observed surface elevation (pers. comm. R. Stroshein).

The tailings impoundment was designed to contain 240 000 m^3 (approx. 300 000 tonnes) of tailings. The actual volume of tailings in the impoundment quoted in Conor Pacific 2000 as gathered from various company reports is 258 174 m^3.

Water Treatment

The water treatment plant has not performed acceptably at any time in the operating history and this is documented. In general, the plant has successfully reduced cyanide concentrations to within the licence limits. However, plant effluent has never consistently passed fish toxicity tests.

Prior to 2000, it appears that high concentrations of ammonia were generally considered to be the cause of the failed toxicity tests. Ammonia is not regulated in the water licence and is produced by the breakdown of cyanide compounds.

In Higgs 2000, however, an overview of typical contaminant concentrations and typical toxicity ranges indicates that ammonia may not be the primary cause of the failed toxicity tests. Higgs 2000 suggests that thiocyanates and copper may also be primary causes of the failed toxicity tests. Higgs 2000 should be followed up on and used in the design of any upgrades or modifications to the treatment plant.

Both the company (BYG) and DIAND have taken advantage of periods of allowed exemption from the toxicity test requirement to discharge as much effluent as possible during the exemption periods. While this practice is strictly legal, it disregards the environmental protection intended in the water licence and should not be followed as the normal manner of managing the site.

Treatment and discharge of the tailings pond water is important. Therefore, a means of producing effluent which passes the toxicity test is essential. There are two approaches to achieving this goal. The first is suggested in Higgs 2000 and involves upgrading or modifying the existing plant to produce a better quality effluent. This

is the preferred approach at this time. The second approach would be to apply for a licence amendment which allows compliance regarding the toxicity tests to be met at a downstream location such as the mouth of Dome Creek. This is reasonable given that there are no known fisheries resources in Dome Creek and it is likely that the toxicity test requirement could be met at the mouth of the creek (esp. if effluent discharge rates were matched to available dilution flows).

The most recent (January 2000) concentrations of total and WAD cyanide in the tailings pond water and seepage return water were 9.1 mg/L and 8.5 mg/L, and 12.2 mg/L and 11.3 mg/L, respectively (Whittley, 2000). The concentrations of total copper in the same two samples were elevated at 13.4 mg/L and 14.5 mg/L, respectively. The concentrations of total arsenic in the same two samples were less than the method detection limit of 0.02 mg/L. The maximum allowable licence discharge limits for total cyanide, WAD cyanide, total copper and dissolved arsenic are 0.3 mg/L, 0.1 mg/L, 0.2 mg/L and 0.15 mg/L, respectively.

Short-term Management of Tailings Seepage Water

The original intent for management of tailings seepage water was to collect a small amount of seepage in a collection pond downstream of the tailings dam which was constructed for this purpose and pump the seepage back into the tailings pond if required due to poor water chemistry. This approach has been followed to date.

However, this management approach is not suited to managing the large amount of seepage water which currently exists. The concerns regarding the physical stability of the dam including thawing of the foundation soils are exacerbated by the return of the large amount of seepage water back into the tailings pond. In other words, the

existing closed loop system is part of the problem as regards the short-term physical stability of the tailings dam.

A new management approach must be adopted. The two alternative approaches would be to provide either continuous treatment of seepage water such that storage is not required, or alternate storage for seepage water for periods when the plant is not operating. Initially, the tailings seepage water return pipe should be tied directly into the water treatment plant feed water pipe so that the seepage water does not return into the tailings pond.

This issue must be addressed in concert with the design of modifications or upgrades to the plant as suggested in Higgs 2000.

Treatment of Tailings Seepage Water Following Surface Reclamation

The treatment of seepage water will be required for an unknown period of time following the implementation of surface reclamation measures at the tailings impoundment. The surface reclamation measures prescribed for the tailings impoundment will have the intention of preventing contaminated seepage from continuing. However, even if the source of contaminated seepage is cut off at that time, treatment of seepage which is already contaminated and already in the groundwater system will be required until that seepage passes through the system. This period of time is expected to be relatively short for this site due to the anticipated rapid flushing of the system resulting from the porous nature of the foundation soils and the generally shallow groundwater flow paths atop permafrost.

For conceptual reclamation costing, a timeframe of three years has been used for flushing of existing contaminants from the groundwater system to the degree where no significant impacts on surface water are observed.

The timeframe required for treatment of seepage water following surface reclamation could be determined from a simple hydrologic model of the area. Development of such a model could be professionally completed and may require the collection of additional field information via new boreholes.

A study of the mobility and attenuation of arsenic was performed by BYG (BYG, 1999) which indicated that treatment of the tailing with ferric sulphate to a Fe:As ratio of 50:1 would largely immobilize arsenic and, that arsenic released from the tailings impoundment into groundwater seepage would be removed from the seepage water by attenuation onto the natural soils. The work suggested that a followup study regarding the potential for redissolution of arsenic from the natural soils should be done. This work should be incorporated into future research projects as appropriate.

ARD Potential of Rock Dumps

The ARD (acid rock drainage) potential of waste rock produced from mining of the oxide portion of the Brown-McDade deposit is generally accepted as being a very low risk for acid generation and release of contaminants. The waste rock produced from mining of the sulphidic portion of the deposit undoubtedly has a negative NNP (net neutralization potential) value and would be considered a potentially acid producing material.

Even though mining of the sulphidic portion of the orebody was prohibited in the water licence, some quantity of sulphidic material was mined. The actual quantity of ore and waste mined from the sulphidic portion of the orebody is unknown but is considered to represent a minor component of the total volume of rock mined. Brodie

1998 assumed a rock volume of 15 000 m^3 as sulphidic waste but there was no basis for this assumption.

Given that the quantity of sulphidic rock in the rock dumps is a minor component of the rock dumps, it is unlikely that contaminated seepage from the rock dump would develop to the degree where surface water was impacted.

The approach to the issue of potential acid rock drainage from the sulphidic waste rock should be as follows:

(1) consult with previous mine operating personnel in an attempt to recreate the dump construction sequence and map out the most likely locations for sulphidic waste rock;

(2) continue to monitor rock dump toe seepage (none observed to date) for flow rate and water chemistry;

(3) do not consider moving waste rock into the open pit unless a surface water chemistry problem is observed and a water balance for the open pit confirms that the waste rock would be flooded;

(4) consider reclaiming the sulphidic waste within the rock dump if practical and if surface water quality problems are observed.

ARD Potential of Tailings

Some quantity of sulphidic ore was processed through the mill even though this was prohibited by the water licence. The quantity of sulphidic ore which was processed

is unknown but likely represents a minor portion of the total volume of tailings produced from the mill. Brodie 1998 assumes a volume of 25 000 m^3 of tailings which are sulphidic but there is no basis for this assumption. It does seem apparent that the sulphidic ore was processed late in the mine operation and that tailings during this period were deposited primarily on the beach at the upstream (west) end of the tailings impoundment.

The tailing produced from the milling of sulphidic ore is known to have a negative NNP and is a potential acid-producing material.

The presence of some minor portion of sulphidic tailings within the tailings impoundment does not change the approach to managing this area. Reclamation alternatives must be developed and the preferred alternative selected and implemented. It may be possible to provide special handling for the sulphidic tailings if they are readily identified and located in the field. However, any special handling should not proceed ahead of the development of an overall reclamation plan for the entire tailings facility.

Brown-McDade Open Pit

The Brown-McDade open pit contains some sulphidic material exposed in the lower wall and floor of the north section of the pit. Additionally, there is some residual loose sulphidic material on the pit floor in the north section of the pit.

This material undoubtedly has a negative NNP and is a potentially acid-generating material. The small amount of water which has accumulated in the north section of the pit to date is contaminated with metals and can not be discharged to the environment (pers. comm. R. Stroshein).

The elevation to which the open pit will fill with water is not known. Even though there is a known seepage inflow low on the north wall, it is suspected that the pit will not fill to any substantial degree due to large seepage losses through the lower pit walls and floor. This is supported by anecdotal evidence that dewatering of the pit was not required during mine operations and that the adit to Pony Creek was dry when encountered by open pit mining.

A simple water balance for the open pit is essential for any evaluation of management options for the pit. In the short-term, monitoring should be conducted of inflow rates and chemistry, pond water chemistry, and changes in pond water level. The pit wall and floor should be mapped to identify the contacts between the upper oxide material and the lower sulphidic material.

Consideration could be given to liming the pond water in order to maintain acceptable water chemistry if this is deemed necessary to protect the local environment from contaminated seepage. This could be readily accomplished by applying lime slurry mixed in the mill to the pond.

A long-term reclamation plan for the pit is dependent on the results of the pit water balance and on the selection of a preferred reclamation alternative for the tailings. The preferred alternative for reclamation of the tailings does not involve the open pit. However, the alternative reclamation plans for the tailings involve the flooding of tailings in the pit behind pit dams. These alternative options obviously dictate the long-term plan for the pit.

It is likely that the pit will be reclaimed as an isolated unit (in accordance with the preferred tailings reclamation plan). In this case, long-term treatment of pit pond

water will need to be avoided and the approaches could include (1) partial or complete filling of the pit with waste rock for increased land use values, (2) in-pit remediation of problematic sulphidic material in the bottom of the north section of the pit, and (3) periodic in-pit treatment with lime until acceptable water chemistry is naturally maintained.

An observational approach must be adopted for the pit since the nature of the water balance and the pond water chemistry are not known. It is likely that the pond water balance will show that the pit will not fill to a significant degree but that loose sulphidic material will be submerged in the pit bottom. In this case, the pit pond water is likely to achieve and maintain acceptable water chemistry following several in-pit batch treatments with lime.

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APPENDIX I

MT. NANSEN PROPERTY
SCOPE OF WORK FROM DIAND

INITIAL STRATHCONA OBSERVATIONS
OF MARCH 24, 2000

APPENDIX "D"
STATEMENT OF WORK

SW1 BACKGROUND

Mt. Nansen is a gold mining property located 30 km west of Carmacks, Yukon Territory. The Department of Indian Affairs and Northern Development (DIAND) is a creditor of BYG Natural Resources Inc., the former owner of the Mt. Nansen property. The DIAND holds a first mortgage against the property as a result of expenditures made to keep the property in environmental compliance after BYG's Receiver abandoned the property in September, 1999.

There are serious environmental problems on the Mt. Nansen site related to structural deficiencies in the tailings dam, high levels of cyanide and arsenic in the tailings pond and high rates of seepage which must be addressed. At the same time, over one half million tonnes of high grade gold remains unmined and the property has excellent exploration potential to host one or more very large gold deposits within its 7 km length.

A total of $450,000.00 of Water Licence security has already been expended pursuant to the Yukon Waters Act to keep the property in environmental compliance over the winter, and DIAND is now expending public funds to continue the environmental protection. Water treatment costs have been temporarily reduced by stockpiling contaminated water as artificial snow. With the spring thaw, runoff and melting of the snow piles will escalate the demand for water treatment and raise the care and maintenance costs substantially. The annual maintenance bill could run as high as $3 million.

A study is urgently needed to investigate water management options before the spring thaw, and to allow the DIAND to plan how to best manage the property pending sale. It is also imperative that the DIAND know the net value of the assets and the dependence of the net value on gold prices and various reclamation options in order to make an informed decision on whether reclamation should be undertaken now; whether to repossess the property pending a future sale; or, to sell the mortgage.

SW2 OBJECTIVES

2.1 To determine the net value of the Mt. Nansen property and identify the est option for maximizing its value to Canada, or, in the event it has a negative value, minimizing its liability to Canada.

SW3 SCOPE OF WORK

The Contractor shall perform the following to the satisfaction of the Departmental Representative:

3.1 with a team consisting of the following specialists, conduct a site visit of the Mt. Nansen mine site property:
- a senior geologist with skills in property evaluation and ore reserve determination;
- a senior metallurgical engineer with skills in evaluating mineral processing plants; and,
- an environmental engineer specializing in mine reclamation

3.2 gather all available data on-site and from other sources;

3.3 discuss geology and exploration potential with Robert Stroshein, former Vice-President, Exploration, Mt. Nansen;

3.4 assess the possibility to outline additional mineral resources and justify bringing the Mount Nansen mill back on stream, or to support a new mining operation;

3.5 evaluate the impact of using the Brown McDade open pit for reclamation purposes (disposal of current tailings, waste and ore stockpiles with acid drainage potential etc.) on possible future mining of sulphide ore remaining in the Brown McDade deposit and the underlying breccia pipe;

3.6 assess the refurbishment/replacement cost of the mill, and estimate the cost of rebuilding and re-permitting tailings disposal facilities, water treatment plant and any other necessary infrastructures.

APPENDIX "D"
STATEMENT OF WORK

Factors to be considered shall include the fact that the existing mill lacks a flotation circuit; and, the current water licence specifically prohibits the mining and milling of sulphide ores;

3.7 build a simple cash flow model so that "what if" questions can be posed and the sensitivity of the project assessed against possible future metal prices and other factors like the probability of discovering new mineable reserves;

3.8 provide a forecast (an off the shelf forecast is acceptable) of world gold and silver prices until year 2005;

3.9 discuss Mt. Nansen environmental issues with David Sherstone, Regional Manager, Water Resources, DIAND, Yukon Region;

3.10 from information obtained from the DIAND, describe reclamation options, care and maintenance options and the associated costs;

3.11 prepare a report, in English only, containing a detailed economic assessment and financial projections; and, conclusions and recommendations based on economic analysis of assets and liabilities. The assessment shall take into account known reserves and exploration potential and shall include estimates of the gross value of the fixed and real property assets (including mineral resources) over a range of gold and silver prices, and, estimates of the impact of the environmental liabilities on the new value under several different reclamation options summarized in a table of net values. The recommendations shall cover optimal timing and method of disposal of property, and, optimal solutions for handling environmental liability.

SW4 OUTPUT/DELIVERABLE

The Contractor shall:

4.1 submit five (5) bound, one (1) unbound and one (1) electronic version of the final report to the Departmental Representative on or before March 31st, 2000.

SW5 DEPARTMENTAL SUPPORT

The Departmental Representative will:

5.1 provide on-site assistance from, and discussion with David Sherstone, Regional Manager, Water Resources, DIAND, Yukon Region and Robert Stroshein, former Vice-President, Exploration, Mt. Nansen;

5.2 provide the Contractor with access to all available company and government files/data pertaining to the Mt. Nansen Mine, including, work performed by the DIAND, Water Resources Section on reclamation options; reclamation; and, care and maintenance costs.

SW6 CONTRACTOR'S PROPOSAL

The Contractor's proposal, dated March 07th, 2000, insofar as it is not at variance with anything contained in the contract document, shall apply to and form part of the contract.

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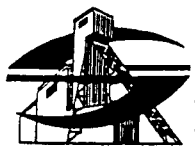

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March 24, 2000

BY FAX AND MAIL

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Water Resources Division, Yukon Region
#310 - 300 Main Street
Whitehorse, Yukon Y1A 2B5

Dear David:

Mt. Nansen

This note is simply to confirm the initial impressions that we conveyed in our discussions last week in Whitehorse following our visit to the Mt. Nansen property.

We have done further work in reviewing the information available on the possible resources on the property and have had no difficulty in concluding that there is nothing of economic interest on the property at this time. Consequently, our recommendations still stand that we would suggest the process facilities and other infrastructure at the property be removed at the first convenient opportunity in order to avoid the necessity of incurring costs for the maintaining of the property and perhaps also having the opportunity of making a small recovery from the sale of the few items of equipment remaining. This excludes any equipment or facilities needed to complete the reclamation of the tailings area.

We have received an initial report from Eric Dénholm on his thoughts and observations on environmental and reclamation issues at Mt. Nansen. We have not reviewed this material as yet but enclose for your information the summary page from his report.

As I am leaving today for South Africa and will be away all of next week we will not be delivering our final report by March 31 but we trust these notes will be sufficient to indicate which direction we are coming from in our report and this is most unlikely to change when we have completed our final assessment.

Yours sincerely,

For Graham Farquharson

GF:jm
cc: Fred Privett
Enc.

EXECUTIVE SUMMARY

The past environmental management of the minesite has been poor and there are several high priority environmental issues which must be addressed in the short term. Nonetheless, the reviewed literature indicates that the tailings dam does have an acceptable factor of safety regarding slope failure which should improve as the tailings pond water level is lowered. Additionally, in spite of the generally poor performance of the water treatment plant, there does not appear to have been a significant negative impact on downstream surface water in Victoria Creek where aquatic resources are known to exist.

The highest priority must be placed on immediately implementing improvements to the Water Treatment Plant such that the treatment and discharge of tailings pond water can resume as soon as possible. The initial work suggested by Mr. Tom Higgs of AGRA Simons Ltd. is realistic and Mr. Higgs should be consulted regarding the design, installation and start up of the necessary improvements to the plant.

Improvements to the tailings seepage water handling system share the highest priority with the necessary improvements to the water treatment plant. The current system of returning seepage water back into the tailings pond is exacerbating the physical stability concerns regarding the tailings dam.

Including the above two highest priority issues, the goal for 2000 should be the selection and design of a long term reclamation plan for the tailings impoundment. Some fundamental information is not available which should be collected in 2000 through engineering and field investigation programs.

The conceptual costs for the preferred long term reclamation plan for the entire minesite given the information currently available are $2.6 million capital plus $2.3 million for an operating fund earning 2.75% p.a. discounted interest.

It is essential that a coherent environmental management plan be prepared and adhered to regarding work performed at the minesite. This will ensure that the environmental goals for the minesite are achieved through a responsible expenditure of money.

APPENDIX II

BYG NATURAL RESOURCES INC.

CONSOLIDATED FINANCIAL STATEMENTS

FOR YEARS ENDING SEPTEMBER 30, 1996-98

BYG NATURAL RESOURCES INC.

CONSOLIDATED FINANCIAL STATEMENTS

YEARS ENDED SEPTEMBER 30, 1998 AND 1997

AUDITORS' REPORT

To the Shareholders of
BYG Natural Resources Inc.:

We have audited the consolidated balance sheet of BYG Natural Resources Inc. as at September 30, 1998 and the consolidated statement of loss, deficit, and changes in financial position for the year then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these consolidated financial statements present fairly, in all material respects, the financial position of the Company as at September 30, 1998 and the results of operations and changes in financial position for the year then ended in accordance with generally accepted accounting principles.

The consolidated financial statements as at September 30, 1997 and for the year then ended were audited by another firm of chartered accountants who expressed an opinion without reservation on them in their report dated February 6, 1998.

Toronto, Ontario
February 16. 1999

"Wasserman Ramsay"
Chartered Accountants

BYG NATURAL RESOURCES INC.

CONSOLIDATED BALANCE SHEETS - SEPTEMBER 30, 1998 AND 1997

	1998	1997
ASSETS		
Current:		
Cash	$ 14,392	$ 997,974
Inventory *(Note 3)*	69,113	1,480,877
Amounts receivable	1,531,804	2,729,247
Prepaid expenses and deposits	296,271	161,872
Due from related companies	36,430	312,362
	1,948,010	5,682,332
Investment in associated companies *(Note 5)*	2,935,021	5,298,614
Resource assets *(Note 4)*	33,579,378	31,980,999
Reclamation deposits	445,000	300,000
	$ 38,907,409	$ 43,261,945
LIABILITIES		
Current:		
Accounts payable and accrued liabilities	$ 3,837,913	$ 4,946,168
Income taxes payable	44,808	19,496
Current portion of long term debt	70,632	494,276
	3,953,353	5,459,940
Capital leases	-	169,996
Shareholder advances *(Note 13)*	1,150,000	-
Other long term debt	182,211	-
Provision for milling credits	500,000	500,000
Reclamation provision	445,100	53,400
Non-controlling interests	4,324,194	6,063,479
	10,554,858	12,246,815
SHAREHOLDERS' EQUITY		
Capital stock *(Note 6)*	39,668,399	34,912,899
Deficit	(11,315,848)	(3,897,769)
	28,352,551	31,015,130
	$ 38,907,409	$ 43,261,945

Nature of operations and going concern(Note 1)

Approved on behalf of the Board:

"Graham Dickson"
Graham Dickson, Director

"Robert Chafee"
Robert Chafee, Director

The accompanying notes form an integral part of these consolidated financial statements

BYG NATURAL RESOURCES INC.

CONSOLIDATED STATEMENTS OF LOSS

YEARS ENDED SEPTEMBER 30, 1998 AND 1997

	1998	1997
Revenue from gold production	$ 7,728,252	$ 10,956,188
Operating costs:		
Costs of production	8,702,720	7,240,784
Depreciation and amortization	2,007,298	1,254,250
	10,710,018	8,495,034
	(2,981,766)	2,461,154
General and operating expenses:		
Professional fees	86,043	341,556
Interest expense	147,103	110,130
Management fees	351,663	433,078
Listing and transfer agent fees	69,684	112,290
Travel and promotion	28,193	320,466
Amortization of deferred charges	-	118,107
Office and general	1,766,458	1,483,843
Other income	(14,019)	(24,950)
	2,435,125	2,894,520
Loss before the following	(5,416,891)	(433,366)
Equity in losses of associated companies *(Note 5)*	(53,593)	(21,386)
Loss on disposition of mining equipment	(519,318)	-
Write down of mineral property *(Note 4)*	(820,750)	-
Write down of investment in Omni Resources Inc. *(Note 5)*	(2,310,000)	-
Loss on dilution of subsidiary interest *(Note 9)*	-	(19,480)
Non-controlling interests	1,739,285	185,632
Net loss for the period before income taxes	(7,381,267)	(288,600)
Income taxes *(Note 7)*	36,812	46,000
Net loss for the period	$ (7,418,079)	$ (334,600)
Loss per share	$ (0.12)	$ (0.01)

The accompanying notes form an integral part of these consolidated financial statements

BYG NATURAL RESOURCES INC.

CONSOLIDATED STATEMENTS OF DEFICIT

YEARS ENDED SEPTEMBER 30, 1998 AND 1997

	1998	1997
Deficit, beginning of year	$ (3,897,769)	$ (3,563,169)
Net loss for the year	(7,418,079)	(334,600)
Deficit, end of year	$ (11,315,848)	$ (3,897,769)

The accompanying notes form an integral part of these consolidated financial statements

Investments

The company follows the equity method of accounting for investments in companies in which it owns less than 50% and over which it has the ability to exercise significant influence.

Where the company owns less than 20% of an investment and does not have the ability to exercise significant influence, the investment is valued at cost, in the case of long-term investments, and at the lower of cost and market value in the case of short-term investments.

Provision for reclamation costs

A provision for reclamation costs will be charged to earnings using the unit-of-production method over the estimated remaining life of the mine from the commencement of commercial production.

Revenue recognition

Sales of precious metals are recorded at the estimated net realizable value when the metals are available for delivery, and unsettled amounts are recorded as accounts receivable. Gold hedging gains or losses are recognized in sales when hedged production is delivered.

Net earnings per share

Net earnings per share is computed using the weighted average number of common shares outstanding during the year.

Use of estimates

The preparation of financial statements in accordance with generally accepted accounting principles requires management to make estimates and assumptions that affect reported amounts of assets and liabilities and disclosure of contingent liabilities at the date of the financial statements, and the reported amount of expenses and income during the reported period. Actual results could differ from those reported.

Fair value of financial instruments

The fair value of the company's financial assets and liabilities is estimated to equal their carrying value.

3. **Inventory**

	1998	1997
Ore stock pile	$ -	$ 1,395,841
Supplies and spare parts	69,113	85,036
	$ 69,113	$ 1,480,877

4. Resource assets

	1998	1997
Mount Nansen Mine		
Property acquisition	$ 11,189,817	$ 10,418,618
Plant and equipment	19,868,570	16,558,204
Pre-operating costs	654,078	654,078
Other	221,288	245,882
	31,933,753	27,876,782
Less: accumulated amortization	(3,402,396)	(1,395,098)
	28,531,357	26,481,684
Exploration properties		
Wheaton River	3,789,127	3,380,303
Aurchem	57,349	758,622
Tawa claims	587,617	669,459
Enoezhi Ddhaw	480,700	447,702
Arctic mine	133,228	133,228
Yukon Revenue	-	110,000
	5,048,021	5,499,314
	$ 33,579,378	$ 31,980,998

Acquisition of mill

During the year ended September 30, 1997, the company acquired a SAG mill from YGC Resources Ltd. (YGC) and installed it at the Mount Nansen mine. Under the arrangement, the company may be required to mill YGC ore and will be reimbursed for all its operating costs in processing the ore. The company and YGC will share equally in the net profits realized from the gold produced.

Pre-operating costs

The company commenced commercial production at its Mount Nansen mine on January 1, 1997. Revenue from gold sales and production costs incurred before this date, which total $654,104, have been capitalized and will be amortized over the remaining estimated life of the mine.

Yukon Revenue Mine option

On February 10, 1997, the company entered into an option agreement with Yukon Revenue Mines Limited (YRM). YRM granted the company an option to acquire up to a 60% interest a group of claims located in the Freegold Mountain area of Yukon Territory.

In consideration, the company has agreed to issue common shares as follows:

- 100,000 upon signing the agreement (issued during the year and valued at $110,000)
- 100,000 on or before December 31, 1997
- 100,000 on or before the earlier of December 31, 1998 and the date upon which the company has incurred expenditures of $1,200,000 on the Property.

The company will earn a 1% interest in the property for each $20,000 of expenditures incurred by it on the property, provided that it has incurred a minimum of $400,000 in expenditures on the property, and up to a maximum 60% interest.

The 100,000 shares due to be issued on or before December 31, 1997 and 1998 have not been issued. During the current year the Company wrote down its investment in this property by $120,750.

Aurchem property

In July 1996, the company signed a letter of intent whereby it would spend $1,000,000 on exploring the Discovery Creek gold property owned by Aurchem Exploration Ltd. (Aurchem). Of this amount, $500,000 had to be spent by March 31, 1997 and the balance by December 31, 1997. These payments would entitle the company to acquire all of the outstanding common shares in Aurchem for an additional consideration of $4,000,000.

During the year ended September 30, 1997, the company and TYG entered into an agreement whereby if TYG paid the first $650,000 of the $1,000,000 to be spent, it would be entitled to earn a 60% interest in the Aurchem property and to participate in the option to acquire all of the outstanding common shares in Aurchem. TYG has expended these funds and is also required to make option payments as follows:

1998	$ 50,000
1999	50,000
	$ 100,000

Royalty payments of $50,000 per annum are also payable by TYG in relation to this agreement for seven years commencing March 2000.

As at December 31, 1997, the company and TYG combined had not spent the full $1,000,000 required by the letter of intent. Accordingly, management of the company and TYG are currently in negotiations with Aurchem with a view to restructuring the terms of the letter of intent. During the current year the Company wrote down its investment in this property by $700,000.

Enoezhi Ddhaw properties

EDI has entered into a letter of intent dated May 8, 1997 with Redell Mining Corporation (Redell). EDI owns certain mining claims in the same geological area as the Redell, La Forma property. The parties have agreed to contribute Redell's Mount Freegold properties, including La Forma, and EDI's property, to a joint venture owned by Redell as to 49% and EDI as to 51%.

EDI will be the operator of the joint venture and the company will be contracted to carry out the exploration, mining, ore loading, hauling and milling. Redell will retain a 1.5% net smelter return royalty on the La Forma property and BYG will retain a 1.5% net smelter return royalty on the EDI Property.

Pursuant to the letter of intent, EDI discharged Redell's liabilities of $447,701, registered against the La Forma property, and Redell discharged all remaining liens on the property. The liabilities of Redell were discharged by paying cash of $250,000 to Redell and by the issuance of 179,279 shares of the company to third parties at deemed consideration of $197,701.

Under the letter of intent, the company purchased milling plant and equipment from Redell at an estimated fair value of $500,000. In consideration for this the company has granted a credit of $500,000 against future milling costs of the joint venture.

Tawa claims property

The company and its subsidiary, TYG, each own a 50% interest in 121 full mineral claims and two mineral claim fractions near Carmacks, Yukon Territory.

Arctic Mine property

TYG owns 100% interest in two crown grant claims near Carcross, Yukon Territory.

5. **Investment in associated companies:**

Omni Resources Inc.

On April 18, 1996, TYG entered into an agreement to subscribe for 3,000,000 units of Omni Resources Inc. (Omni), a company related by virtue of common directors, for a price of $1 per unit or total cash consideration of $3,000,000. Each unit comprises one common share and one warrant entitling the holder to acquire one additional common share of Omni at a price of $1.50 per common share on or before June 5, 1997. As at September 30, 1996, the company owned 17% of the total outstanding common shares in Omni and the shares had a quoted value of $0.90.

During the year ended September 30, 1997, TYG exercised all of the 3,000,000 warrants by paying $4,500,000 to Omni for 3,000,000 additional shares. As part of this transaction, TYG earned and exercised the right to acquire, for $10, 50% of Omni's interest in the mineral claims, mill facilities and mine infrastructure known as the Wheaton River property (formerly known as the Mount Skukum claim), the Skukum Creek deposit and associated claims, and Goddell Gully properties.

The excess of consideration paid over the net asset value of the interest acquired in Omni was $5,130,000, of which $2,880,000, being the excess paid over the market value of the Omni shares acquired at the date of purchase, was attributed to mineral property acquisition costs.

As at September 30, 1998, TYG held 28.3% (1997 - 28.3%) of the issued share capital of Omni. The company's investment in Omni has been accounted for using the equity method. During the current year the Company wrote down its investment in Omni by $2,310,000 to reflect a permanent decline in value.

YGC Resources Ltd.

During the year ended September 30, 1997, the company acquired 1,842,000 shares in YGC for deemed consideration of $700,000. Consideration comprised 438,596 shares in the company, which were valued at market price of $500,000 (note 7), and a $200,000 non-interest bearing debenture maturing on May 31, 1998 and convertible into TYG shares. Later during the year the debenture was repurchased at par value and cancelled.

As at September 30, 1998, the company owned a 16.5% interest in YGC (1997 - 16.5%), and by virtue of having a common director and common management is deemed to have the ability to exercise a significant influence over YGC. Accordingly, the company's investment in YGC is accounted for using the equity method.

6. Capital Stock

Authorized:

An unlimited number of common and preference shares with no par value

Issued and outstanding:

	1998		1997	
	number of common shares	Amount	number of common shares	Amount
Issued - beginning of year	55,601,310	$ 34,912,899	44,776,985	$ 26,226,732
Issued during the year				
Private placements	17,568,317	4,900,500	7,781,000	7,937,200
Exercise of warrants	-	-	1,225,000	1,045,000
Exercised of options	-	-	1,100,000	554,700
Investment in YGC	-	-	438,596	500,000
Mineral properties	-	-	279,729	307,702
Capital distribution	-	-	-	(1,458,302)
Share issue costs	-	(145,000)	-	(200,133)
	73,169,627	$ 39,668,399	55,601,310	$ 34,912,899

During the year ended September 30, 1998:

- 3,668,333 shares were issued by private placement for proceeds of $1,150,500.
- 13,899,984 shares were issued under flow-through arrangements for proceeds of $3,800,000. Pursuant to the flow-through arrangements 11,926,664 share purchase warrants were issued

BYG NATURAL RESOURCES INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

YEARS ENDED SEPTEMBER 30, 1998 AND 1997

During the year ended September 30, 1997:

- 600,000 broker warrants were exercised
- 625,000 purchase warrants were exercised
- 1,100,000 share options were exercised
- 772,000 shares were issued under flow-through arrangements for proceeds of $928,200
- 7,009,000 shares were issued by private placement for proceeds of $7,009,000. Pursuant to the private placement 3,701,300 share purchase warrants were issued of which 196,800 were broker warrants.

As at September 30, 1998, the following warrants were outstanding:

Exercised price $	Outstanding at September 30 1997	Issued	Exercised or expired	Outstanding at September 30 1998	Expiry date
1.25	3,504,500	-	-	3,504,500	March 31, 1999
1.25	196,800	-	-	196,800	March 31, 1999
0.70	250,000	-	250,000	-	July 31, 1998
0.30	-	1,993,330	-	1,993,330	September 30, 2000
0.37	-	9,933,334	-	9,933,334	March 18, 2002
	3,951,300	11,926,664	250,000	15,627,964	

As at September 30, 1998, the following options to directors and employees were outstanding:

Exercised price $	Outstanding at September 30 1997	Issued	Expired	Outstanding at September 30 1998	Expiry date
0.91	180,000	-	180,000	-	July 31, 1998
1.12	65,000	-	65,000	-	April 30, 1998
1.50	75,000	-	75,000	-	April 9, 1998
0.28	-	2,400,000	-	2,400,000	June 4, 2001
	320,000	2,400,000	320,000	2,400,000	

7. Income taxes

The company has available approximately $5,700,000 (1997 - $241,546) of non-capital tax losses which may be carried forward to offset future income for tax purposes. These amounts expire in the years 1998 through 2005. In addition, the company has net capital losses of approximately $644,000 that can be carried forward indefinitely and applied against future capital gains.

Included in resource asset costs are costs totalling approximately $4.5 million which are available to the company as deductions for income tax purposes.

Income tax expense for the year of $36,812 (1997 - $46,000) relates to Large Corporations Tax.

8. Operating leases

The minimum annual lease payments under operating leases is as follows:

1999	$ 31,973

9. Trumpeter Yukon Gold Inc.

During the year ended September 30, 1997, TYG issued 900,466 shares to third parties through the exercise of rights, 2,000,000 shares to third parties through a private placement and 2,000,000 share to the Company through a private placement.

As a result of various issues of shares of TYG during the year, a loss on dilution of $19,480 was incurred.

10. Commitments

a) The company has undertaken a gold hedging and currency protection program and has entered into agreements with a major metal merchant firm to deliver gold and purchase Canadian dollars. As at September 30, 1998, the company's hedging program consists of:

- put option contracts for gold under which the company can require the metal merchant to buy gold at between U.S. $320 and U.S. $405 per ounce, while the financial institution can require the company to sell 69,000 ounces at between U.S. $345 and U.S. $400 per ounce. These options have various expiry dates during 1998 to 1999 and result in no net cost to the company; and

- the company has also entered into currency contracts for the purchase of Canadian dollars at amounts ranging from $1.37 to $1.38 with maturity dates from October 1998 to March 1999.

b) During the year ended September 30, 1997, the company entered into a socio-economic agreement with the Little Salmon Band. Under the agreement the company is required to pay $500,000 to the Little Salmon Band over a period of four years from 1997. To date, $25,000 has been paid.

c) See also note 4.

11. Related party balances

As at September 30, 1998, the company owed $154,793 to Omni (1997 - 81,201 owed to the Company by Omni) and $389,217 (1997 -$231,160) by YGC. During the year ended September 30, 1997, the company paid $239,110 to Junior Mine Services Ltd., a company with a former common director, for management and administrative services. During the same year TYG also paid $79,722 to Junior Mine Services Ltd. under similar arrangements.

12. Uncertainty due to Year 2000 Issue:

The year 2000 Issue arises because many computerized systems use two digits rather than four to identify a year. Date-sensitive systems may recognize the year 2000 as 1900 or some other date, resulting in errors when information is processed. In addition, similar problems may arise in some systems which use certain dates in 1999 to represent something other than a date. The effects of the Year 2000 Issue may be experienced before, on, or after January 1, 2000, and, if not addressed, the impact on operations and financial reporting may range from minor errors to significant systems failure which could affect an entity's ability to conduct normal business operations. It is not possible to be certain that all aspects of the Year 2000 Issue affecting the entity, including those related to the efforts of customers, suppliers, or other third parties, will be fully resolved.

13. Subsequent event:

Subsequent to year end the Company reached a tentative agreement to sell its subsidiary TYG for a cash payment of $1,750,000 and the assumption of the debt due from the Company to TYG. The agreement is subject to completion of due diligence by the purchaser and shareholder and regulatory approval.

Subsequent to year end the shareholder advances were converted into 10% convertible secured debentures. The debentures which come due on November 10, 2003 are convertible into common shares at the rate of one common share for each $0.15 of principal. Interest is to be paid on the debentures semi-annually and may be paid either in cash or shares. The Company has reserved 8,533,334 common shares for issuance on conversion of all or part of the debentures.

B.Y.G. Natural Resources Inc.

Consolidated Financial Statements
For the years ended September 30, 1997 and 1996

Coopers
&Lybrand

chartered accountants

Coopers & Lybrand Building
1111 West Hastings Street
Vancouver, British Columbia
Canada V6E 3R2

tel.: (604) 661-5700
fax: (604) 661-5756

Auditors' Report to the Shareholders of B.Y.G. Natural Resources Inc.

We have audited the consolidated balance sheets of B.Y.G. Natural Resources Inc. as at September 30, 1997 and 1996 and the consolidated statements of earnings and deficit and changes in financial position for the years then ended. These financial statements are the responsibility of the company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these consolidated financial statements present fairly, in all material respects, the financial position of the company as at September 30, 1997 and 1996 and the results of its operations and the changes in its financial position for the years then ended in accordance with generally accepted accounting principles.

"Coopers & Lybrand"

Vancouver, B.C.
February 6, 1998

Chartered Accountants

B.Y.G. Natural Resources Inc.

Consolidated Balance Sheets as at September 30, 1997 and 1996

	1997 $	1996 $
Assets		
Current assets		
Cash and cash equivalents	997,974	993,083
Restricted cash (note 8)	–	2,622,000
Inventory (note 4)	1,480,877	–
Amounts receivable	2,729,248	809,247
Prepaid expenses and deposits	161,872	272,780
Due from related companies	312,361	–
	5,682,332	4,697,110
Resource assets (note 3)	31,980,998	21,269,326
Reclamation deposits	300,000	–
Deferred charges	–	89,294
Investments in associated companies (note 5)	5,298,614	3,000,000
	43,261,944	29,055,730
Liabilities		
Current liabilities		
Accounts payable and accrued liabilities	4,946,166	3,307,737
Capital leases	494,276	–
Income taxes payable	19,496	35,000
Loan payable (note 6)	–	687,509
	5,459,938	4,030,246
Capital leases	169,996	–
Provision for milling credits (note 3)	500,000	–
Reclamation provision	53,400	–
Non-controlling interests	6,063,479	2,361,921
	12,246,813	6,392,167
Shareholders' equity		
Capital stock (note 7)	34,912,899	26,226,732
Deficit	(3,897,768)	(3,563,169)
	31,015,131	22,663,563
	43,261,944	29,055,730

Approved by the Directors

"Alan G. Thompson" Director

"George R. Wright" Director

Nature of operations and going concern (note 1)

Coopers &Lybrand

B.Y.G. Natural Resources Inc.

Consolidated Statements of Earnings and Deficit
For the years ended September 30, 1997 and 1996

	1997 $	1996 $
Revenue from gold production	10,956,188	Nil
Operating costs		
Cost of production	7,240,785	–
Depreciation and amortization	1,254,350	448
	8,495,135	448
	2,461,053	(448)
General and administrative expenses		
Interest expense	110,130	75,062
Listing and transfer agent fees	112,290	18,056
Management fees	433,716	133,475
Office and general	1,252,336	211,952
Professional fees	341,556	38,076
Public relations	230,867	195,632
Travel and promotion	320,466	38,832
Amortization of deferred charges	118,107	279,785
Other income	(25,050)	(195,223)
	2,894,418	795,647
Loss before the following:	(433,365)	(796,095)
Equity in losses of associated companies	(21,386)	–
Gain (loss) on dilution of subsidiary interest (note 8)	(19,480)	1,038,642
Non-controlling interests	185,632	28,117
Earnings (loss) before income taxes	(288,599)	270,664
Income taxes (note 9)	46,000	35,000
Net earnings (loss) for the year	(334,599)	235,664
Deficit – beginning of year	(3,563,169)	(3,798,833)
Deficit – end of year	(3,897,768)	(3,563,169)
Net earnings (loss) per share	(0.01)	0.01

B.Y.G. Natural Resources Inc.

Consolidated Statements of Changes in Financial Position
For the years ended September 30, 1997 and 1996

	1997 $	1996 $
Cash provided from (used for)		
Operating activities		
Net earnings (loss) for the year	(334,599)	235,664
Items not affecting cash –		
Amortization of deferred charges	118,107	279,785
Depreciation and amortization	1,254,350	448
Loss (gain) on dilution of subsidiary interest	19,480	(1,038,642)
Non-controlling interests	(185,632)	(28,117)
Increase in reclamation provision	53,400	–
Equity in losses of associated companies	21,386	–
	946,492	(550,862)
Net change in non-cash working capital items relating to operations	(1,979,406)	1,912,827
	(1,032,914)	1,361,965
Financing activities		
Provision for milling credits	500,000	–
Capital leases	664,272	–
Deferred charges	(28,813)	(89,294)
Additions to gold loan	2,047,618	687,509
Repayments of gold loan	(2,735,127)	–
Distribution of capital	(1,458,302)	–
Issuance of capital stock for mineral properties	307,702	–
Issuance of capital stock for investment in YGC	500,000	–
Issuance of capital stock for cash	9,336,767	9,448,598
Conversion of debenture	–	(3,000,000)
Issuance of shares for conversion of debenture	–	3,000,000
Dilution of subsidiary interest	3,867,710	3,428,680
	13,001,827	13,475,493
Investing activities		
Reclamation deposits	(300,000)	–
Additions to resource assets	(11,966,022)	(9,703,989)
Investment in YGC	(700,000)	–
Investment in Omni Resources Inc.	(1,620,000)	(3,000,000)
	(14,586,022)	(12,703,989)
Increase (decrease) in cash and cash equivalents	(2,617,109)	2,133,469
Cash and cash equivalents – beginning of year	3,615,083	1,481,614
Cash and cash equivalents – end of year	997,974	3,615,083
Cash and cash equivalents comprise:		
Cash	997,974	993,083
Restricted cash	–	2,622,000
	997,974	3,615,083

Coopers &Lybrand

1. Nature of operations and going concern

In 1997, the company started production at its gold mine at Mount Nansen, Yukon Territory, Canada. Commercial production was deemed to commence on January 1, 1997.

The company is also in the process of exploring other mineral properties in the Yukon Territory and has not yet determined whether these properties contain ore reserves that are economically recoverable. The recoverability of investments in associated companies, resource assets and related deferred costs is dependent upon the existence of economically recoverable reserves, the ability of the company to obtain the necessary financing to complete the development, and upon future profitable production, or proceeds from the disposition of these properties.

Although the company has taken steps to verify title to mineral properties in which it has an interest, in accordance with industry standards for the current stage of exploration of such properties, these procedures do not guarantee the company's title. Property title may be subject to unregistered prior agreements and non-compliance with regulatory requirements.

The company incurred a loss for the year of $334,599 and had working capital of $222,394 available at September 30, 1997.

Subsequent to the year-end, the company was required to temporarily cease production for the Mount Nansen mine due to an excess of water in the tailings dam. Production was ceased in early November 1997. The company anticipates recommencing gold production in February 1998.

The company is dependent on the recommencement of production to raise funds for future operations and to meet its ongoing liabilities as they fall due. If production does not recommence, the company may be unable to meet its obligations. Should the company be unable to realize its assets and discharge its liabilities in the normal course of business, the net realizable value of the assets may be materially less than the amounts recorded on the balance sheet.

All of the company's operations are located in Canada.

2. Significant accounting policies

Principles of consolidation

These consolidated financial statements include the accounts of the company, its wholly owned subsidiaries, Enoezhi Ddhaw Inc. (EDI) and Khu Dushi Inc. and its subsidiaries, Little Salmon Analytical Labs Inc. and Trumpeter Yukon Gold Inc. (TYG).

As at September 30, 1997, the company owns 44.0% of the issued share capital of TYG. The company also controls 63.4% of the voting power as it holds all 4,000,000 of the Class B shares which carry five votes per share.

2. Significant accounting policies (cont'd)

Cash and cash equivalents

The company considers investments in highly liquid instruments purchased with an original maturity of 90 days or less to be cash equivalents. All of the company's cash equivalents are reported at cost, which approximates fair market value.

Inventory

Inventory includes gold in process, stockpiled ore, and supplies and spare parts.

Gold in process is valued at market less refinery charges. Stockpiled ore is valued at the cost of mining the ore and is stated at the lower of cost and net realizable value. Supplies and spare parts are valued at the lower of cost and replacement cost.

Resource assets

Mining property acquisition and mine pre-production and development costs are carried at cost and are depreciated based on the unit-of-production method over the estimated life of the mine.

Mineral property acquisition and related exploration costs are deferred. These costs will be amortized over the estimated useful life of the properties following the commencement of production, or written off if the properties are sold, abandoned, or if the claims are allowed to lapse.

Deferred charges

Deferred charges incurred in obtaining financing are amortized over the life of the respective debt instrument.

Investments

The company follows the equity method of accounting for investments in companies in which it owns less than 50% and over which it has the ability to exercise significant influence.

Where the company owns less than 20% of an investment and does not have the ability to exercise significant influence, the investment is valued at cost, in the case of long-term investments, and at the lower of cost and market value in the case of short-term investments.

Provision for reclamation costs

A provision for reclamation costs will be charged to earnings using the unit-of-production method over the estimated remaining life of the mine from the commencement of commercial production.

Revenue recognition

Sales of precious metals are recorded at the estimated net realizable value when the metals are available for delivery, and unsettled amounts are recorded as accounts receivable. Gold hedging gains or losses are recognized in sales when hedged production is delivered.

2. Significant accounting policies (cont'd)

Net earnings per share

Net earnings per share is computed using the weighted average number of common shares outstanding during the year.

Use of estimates

The preparation of financial statements in accordance with generally accepted accounting principles requires management to make estimates and assumptions that affect reported amounts of assets and liabilities and disclosure of contingent liabilities at the date of the financial statements, and the reported amount of expenses and income during the reported period. Actual results could differ from those reported.

Fair value of financial instruments

The fair value of the company's financial assets and liabilities is estimated to equal their carrying value.

3. Resource assets

	1997 $	1996 $
Mount Nansen Mine		
Property acquisition	10,418,618	10,194,831
Plant and equipment	16,558,204	10,320,858
Pre-operating costs	654,078	–
Other	245,882	48,428
	27,876,782	20,564,117
Less: accumulated depreciation	(1,395,098)	(78,498)
	26,481,684	20,485,619
Exploration properties		
Wheaton River	3,380,303	3,450
Aurchem	758,622	–
Tawa claims	669,459	647,228
Enoezhi Ddhaw	447,702	–
Arctic Mine	133,228	133,029
Yukon Revenue	110,000	–
	5,499,314	783,707
	31,980,998	21,269,326

3. Resource assets (cont'd)

Acquisition of mill

During the year ended September 30, 1997, the company acquired a mill from YGC Resources Ltd. (YGC) and installed it at the Mount Nansen mine. Under the arrangement, the company may be required to mill YGC ore and will be reimbursed for all its operating costs in processing the ore. The company and YGC will share equally in the net profits realized from the gold produced.

Pre-operating costs

The company commenced commercial production at its Mount Nansen mine on January 1, 1997. Revenue from gold sales and production costs incurred before this date, which total $654,104, have been capitalized and will be amortized over the remaining estimated life of the mine.

Yukon Revenue Mine option

On February 10, 1997, the company entered into an option agreement with Yukon Revenue Mines Limited (YRM). YRM granted the company an option to acquire up to a 60% interest a group of claims located in the Freegold Mountain area of Yukon Territory.

In consideration, the company has agreed to issue common shares as follows:

- 100,000 upon signing the agreement (issued during the year and valued at $110,000)
- 100,000 on or before December 31, 1997
- 100,000 on or before the earlier of December 31, 1998 and the date upon which the company has incurred expenditures of $1,200,000 on the Property.

The company will earn a 1% interest in the property for each $20,000 of expenditures incurred by it on the property, provided that it has incurred a minimum of $400,000 in expenditures on the property, and up to a maximum 60% interest.

The 100,000 shares due to be issued on or before December 31, 1997 have not been issued.

Aurchem property

In July 1996, the company signed a letter of intent whereby it would spend $1,000,000 on exploring the Discovery Creek gold property owned by Aurchem Exploration Ltd. (Aurchem). Of this amount, $500,000 had to be spent by March 31, 1997 and the balance by December 31, 1997. These payments would entitle the company to acquire all of the outstanding common shares in Aurchem for an additional consideration of $4,000,000.

3. Resource assets (cont'd)

Aurchem property (cont'd)

During the year ended September 30, 1997, the company and TYG entered into an agreement whereby if TYG paid the first $650,000 of the $1,000,000 to be spent, it would be entitled to earn a 60% interest in the Aurchem property and to participate in the option to acquire all of the outstanding common shares in Aurchem. TYG has expended these funds and is also required to make option payments as follows:

	$
March 1997	50,000 (paid)
March 1998	50,000
March 1999	50,000
	150,000

Royalty payments of $50,000 per annum are also payable by TYG in relation to this agreement for seven years commencing March 2000.

As at December 31, 1997, the company and TYG combined had not spent the full $1,000,000 required by the letter of intent. Accordingly, management of the company and TYG are currently in negotiations with Aurchem with a view to restructuring the terms of the letter of intent.

Enoezhi Ddhaw properties

EDI has entered into a letter of intent dated May 8, 1997 with Redell Mining Corporation (Redell). EDI owns certain mining claims in the same geological area as the Redell, La Forma property. The parties have agreed to contribute Redell's Mount Freegold properties, including La Forma, and EDI's property, to a joint venture owned by Redell as to 49% and EDI as to 51%.

EDI will be the operator of the joint venture and the company will be contracted to carry out the exploration, mining, ore loading, hauling and milling. Redell will retain a 1.5% net smelter return royalty on the La Forma property and BYG will retain a 1.5% net smelter return royalty on the EDI Property.

Pursuant to the letter of intent, EDI discharged Redell's liabilities of $447,701, registered against the La Forma property, and Redell discharged all remaining liens on the property. The liabilities of Redell were discharged by paying cash of $250,000 to Redell and by the issuance of 179,279 shares of the company to third parties at deemed consideration of $197,701.

Under the letter of intent, the company purchased milling plant and equipment from Redell at an estimated fair value of $500,000. In consideration for this the company has granted a credit of $500,000 against future milling costs of the joint venture.

Tawa claims property

The company and its subsidiary, TYG, each own a 50% interest in 121 full mineral claims and two mineral claim fractions near Carmacks, Yukon Territory.

3. Resource assets (cont'd)

Arctic Mine property

TYG owns 100% interest in two crown grant claims near Carcross, Yukon Territory. These were purchased from the company in the year ended September 30, 1996, along with the 50% interest in the Tawa claims referred to above.

Wheaton River property

Pursuant to TYG's investment in Omni, TYG owns 50% of Omni's interest in the mineral claims, mill facilities and mine infrastructure known as the Wheaton River property, the Skukum Creek deposit and associated claims and the Goddell Gully properties (see note 5).

TYG also owns a 50% interest in 69 claims at Wheaton River, Yukon Territory.

4. Inventory

	1997 $	1996 $
Ore stock pile	1,395,841	–
Supplies and spare parts	85,036	–
	1,480,877	Nil

5. Investment in associated companies

Omni Resources Inc.

On April 18, 1996, TYG entered into an agreement to subscribe for 3,000,000 units of Omni Resources Inc. (Omni), a company related by virtue of common directors, for a price of $1 per unit or total cash consideration of $3,000,000. Each unit comprises one common share and one warrant entitling the holder to acquire one additional common share of Omni at a price of $1.50 per common share on or before June 5, 1997. As at September 30, 1996, the company owned 17% of the total outstanding common shares in Omni and the shares had a quoted value of $0.90.

During the year ended September 30, 1997, TYG exercised all of the 3,000,000 warrants by paying $4,500,000 to Omni for 3,000,000 additional shares. As part of this transaction, TYG earned and exercised the right to acquire, for $10, 50% of Omni's interest in the mineral claims, mill facilities and mine infrastructure known as the Wheaton River property (formerly known as the Mount Skukum claim), the Skukum Creek deposit and associated claims, and Goddell Gully properties.

5. Investment in associated companies (cont'd)

The excess of consideration paid over the net asset value of the interest acquired in Omni was $5,130,000, of which $2,880,000, being the excess paid over the market value of the Omni shares acquired at the date of purchase, was attributed to mineral property acquisition costs.

As at September 30, 1997, TYG held 28.3% of the issued share capital of Omni. The company's investment in Omni has been accounted for using the equity method.

YGC Resources Ltd.

During the year ended September 30, 1997, the company acquired 1,842,000 shares in YGC for deemed consideration of $700,000. Consideration comprised 438,596 shares in the company, which were valued at market price of $500,000 (note 7), and a $200,000 non-interest bearing debenture maturing on May 31, 1998 and convertible into TYG shares. Later during the year the debenture was repurchased at par value and cancelled.

As at September 30, 1997, the company owned a 16.5% interest in YGC, and by virtue of having a common director and common management is deemed to have the ability to exercise a significant influence over YGC. Accordingly, the company's investment in YGC is accounted for using the equity method.

6. Loan payable

Loan payable comprises:

	1997 $	1996 $
Gold loan, at market value (interest rate 5.1% per annum)	–	664,280
Deferred gain on gold loan	–	23,229
Gold loan, at book value	Nil	687,509

During the year ended September 30, 1996, the company entered into an agreement with Gerald Metals, Inc. to borrow up to U.S. $2,000,000. As at September 30, 1996, the company had borrowed U.S. $500,000 (Cdn. $687,509) against this facility.

During the year ended September 30, 1997, the gold loan was repaid and the facility withdrawn. The remaining deferred gain was credited to income.

7. Capital stock

Authorized –
An unlimited number of common and preference shares with no par value.

Issued and outstanding –

	1997		1996	
	Number of common shares	Amount $	Number of common shares	Amount $
Issued – beginning of year	44,776,985	26,226,732	23,508,235	13,778,134
Issued during the year –				
Private placements	7,781,000	7,937,200	11,115,000	6,887,098
Conversion of debenture	–	–	7,500,000	3,000,000
Exercise of warrants	1,225,000	1,045,000	2,560,000	2,524,000
Settlement of interest	–	–	93,750	37,500
Exercise of options	1,100,000	554,700	–	–
Investment in YGC	438,596	500,000	–	–
Mineral properties	279,729	307,702	–	–
Capital distribution	–	(1,458,302)	–	–
Share issue costs	–	(200,133)	–	–
Issued – end of year	55,601,310	34,912,899	44,776,985	26,226,732

As part of a debenture financing in 1995, the company issued options expiring on June 14, 1997, to purchase 150,000 common shares of the company at a price of $0.40 per share. Of these options, 60,000 were exercised in the year ended September 30, 1996 and 90,000 in the year ended September 30, 1997.

During the year ended September 30, 1996, the company sold by private placement 10,000,000 units for net proceeds of $6,440,548. Each unit consisted of one common share and one-half of a common share purchase warrant exercisable as to one warrant and $1 per share up to August 22, 1997. In addition, the company issued 600,000 broker warrants, each entitling the holder to purchase one common share at $0.70 per share up to August 22, 1997. As at September 30, 1996, 2,500,000 common share purchase warrants had been exercised and 2,500,000 common share purchase warrants and all of the broker warrants remained outstanding.

7. Capital stock (cont'd)

During the year ended September 30, 1997:

- all 600,000 of the broker warrants were exercised
- 625,000 of the purchase warrants were exercised and the remaining 1,875,000 expired unexercised
- 1,100,000 share options were exercised and 282,500 expired unexercised
- 772,000 shares were issued under flow-through arrangements for proceeds of $928,200
- 7,009,000 shares were issued by private placement for proceeds of $7,009,000. Pursuant to the private placement 3,701,300 share purchase warrants were issued of which 196,800 were broker warrants.

As at September 30, 1997, the following warrants were outstanding:

Exercise price $	Outstanding at September 30, 1996	Issued	Exercised or expired	Outstanding at September 30, 1997	Expiry date
1.25	–	3,504,500	–	3,504,500	March 31, 1999
1.25	–	196,800	–	196,800	March 31, 1999
0.70	250,000	–	–	250,000	July 31, 1998
1.00	2,500,000	–	2,500,000	–	August 22, 1997
0.70	600,000	–	600,000	–	August 22, 1997
	3,350,000	3,701,300	3,100,000	3,951,300	

As at September 30, 1997, the following options to directors and employees were outstanding:

Exercise price $	Outstanding at September 30, 1996	Exercised	Expired	Outstanding at September 30, 1997	Expiry date
0.40	90,000	90,000	–	–	June 14, 1997
0.47	910,000	910,000	–	–	July 6, 1997
0.91	437,500	100,000	157,500	180,000	July 31, 1998
1.12	140,000	–	75,000	65,000	April 30, 1998
1.50	125,000	–	50,000	75,000	April 9, 1998
	1,702,500	1,100,000	282,500	320,000	

Distribution of capital

Further to the issuance of TYG's initial offering prospectus dated November 21, 1996, the company distributed 4,573,701 of its Class A shares in TYG to the company's shareholders on the basis of one Class A share for every 10 common shares of the company held at the date of the prospectus. The capital distribution resulted in a reduction in share capital of $1,458,302, representing the net book value of the interest in TYG that was distributed.

8. Trumpeter Yukon Gold Inc.

During the year ended September 30, 1996, the company transferred 50% of the Tawa and 100% of the Arctic Mine exploration properties to its newly incorporated subsidiary Trumpeter Yukon Gold Inc. (TYG).

During the same period, TYG issued 2,995,000 Class A shares from treasury to third parties for $1,198,000 and 4,370,000 Special Warrants to third parties for net proceeds of $2,230,680. All proceeds of the offering were placed in escrow . On December 12, 1996, the Special Warrants were converted to 4,370,000 Class A shares in TYG and the proceeds were released from escrow.

As a result of the above transactions, the company held a 65% interest in TYG as at September 30, 1996, and a dilution gain of $1,038,642 was recognized for the year then ended.

During the year ended September 30, 1997, TYG issued 900,466 shares to third parties through the exercise of rights, 2,000,000 shares to third parties through a private placement and 2,000,000 shares to the company through a private placement.

As a result of various issues of shares of TYG during the year, a loss on dilution of $19,480 was incurred.

9. Income taxes

(a) The company has available approximately $241,546 (1996 – $1,240,000) of non-capital tax losses which may be carried forward to offset future income for tax purposes. These amounts expire in the years 1998 through 2004. In addition, the company has net capital losses of approximately $644,000 that can be carried forward indefinitely and applied against future capital gains.

(b) Included in resource asset costs are costs totalling $4,424,349 which are available to the company as deductions for income tax purposes.

(c) Income tax expense for the year of $46,000 (1996 – $35,000) relates to Large Corporations Tax.

10. Operating leases

The minimum annual lease payments under operating leases for the next two years are as follows:

	$
1998	77,456
1999	31,973
	109,429

11. Commitments

(a) The company has undertaken a gold hedging and currency protection program and has entered into agreements with a major metal merchant firm to deliver gold and purchase Canadian dollars. As at September 30, 1997, the company's hedging program consists of:

(i) put option contracts for 96,000 ounces of gold under which the company can require the metal merchant to buy gold at between U.S. $320 and U.S. $405 per ounce, while the financial institution can require the company to sell 69,000 ounces at between U.S. $345 and U.S. $400 per ounce. These options have various expiry dates during 1997 to 1999 and result in no net cost to the company; and

(ii) the company has also entered into currency contracts for the purchase of Cdn. $1,000,000 per month at amounts ranging from $1.32 to $1.34 with maturity dates from October 1997 to December 1998.

(b) During the year ended September 30, 1997, the company entered into a socio-economic agreement with the Little Salmon Band. Under the agreement the company is required to pay $500,000 to the Little Salmon Band over a period of four years from 1997. To date, $25,000 has been paid.

(c) See also note 3.

12. Related party balances

As at September 30, 1997, the company owed $10,635 to Junior Mine Services Ltd., a company with a common director.

As at September 30, 1997, the company was owed $81,201 (1996 – $206,000) by Omni and $231,160 by YGC. During the year ended September 30, 1997, the company paid $239,110 to Junior Mine Services Ltd. for management and administrative services. TYG also paid $79,722 to Junior Mine Services Ltd. under similar arrangements.

During the year ended September 30, 1997, the company provided exploration services to Omni at cost plus a markup. The total billed for the year was $980,434.

During the period ended September 30, 1996, the company contracted with Orocon Incorporated, a company with three common directors, to install a mill at the Mount Nansen site. The contract was completed in March 1997.

APPENDIX III

RESOURCE CALCULATION DETAILS
FOR BROWN-MCDADE AND FLEX ZONES

Resource Calculation Sheet - Brown-McDade Underground

block	area (sq m)	avg tkns (m)	sg	tonnes	hole	from (m)	to (m)	length (m)	Au (g/t)	Ag (g/t)	
FW-1					88-97	15.3	19.2	3.9	13.8	111.8	*
FW-1					88-100	38.0	40.5	2.5	2.5	26.7	
FW-1					88-106	58.1	60.6	2.5	3.6	31.2	
FW-1					88-95	53.4	55.9	2.5	7.3	22.0	
Total FW-1	2350	2.9	2.5	16 744				2.9	7.7	55.8	
FW-2A					88-81	39.0	45.1	6.0	6.5	45.9	
FW-2A					88-78	40.1	44.9	4.9	4.9	38.5	
FW-2A					88-74	54.9	58.6	3.8	2.0	8.9	
FW-2A					88-117	80.8	84.4	3.5	3.9	14.3	
Total FW-2A	2920	4.6	2.5	33 580				4.6	4.6	30.1	
FW-2B					88-59	57.5	60.0	2.5	3.3	12.2	
FW-2B					88-130	62.3	64.8	2.5	17.3	52.3	*
FW-2B					88-58	64.9	67.4	2.5	2.6	103.8	
FW-2B					88-61	94.3	96.8	2.5	6.1	45.0	
FW-2B					88-62	48.5	51.0	2.5	3.8	81.5	
FW-2B					88-64	72.2	74.7	2.5	2.0	91.5	*
FW-2B					88-67	65.8	68.3	2.5	4.7	12.3	
Total FW-2B	4630	2.5	2.5	29 020				2.5	5.7	56.9	
FW-3					88-70	73.7	77.1	3.3	12.4	33.6	
FW-3					88-79	69.3	71.8	2.5	0.4	10.4	
FW-3					94-148	83.1	85.6	2.5	2.0	67.1	
FW-3					88-122	90.0	92.5	2.5	7.0	77.7	
FW-3					88-115	102.0	104.5	2.5	2.3	86.5	
FW-3					94-144	110.2	115.0	4.8	4.5	28.6	
FW-3					88-127	126.7	129.5	2.8	4.5	217.3	
FW-3					94-145	142.0	144.5	2.5	1.9	27.3	
FW-3					88-135	159.0	161.5	2.5	2.7	158.3	
FW-3					88-132	153.8	156.3	2.5	10.7	37.4	
Total FW-3	3660	2.8	2.5	26 023				2.8	5.0	70.8	
Total FW				105 400					5.49	51.6	

Resource Calculation Sheet - Brown-McDade Underground

block	area (sq m)	avg tkns (m)	sg	tonnes	hole	from (m)	to (m)	length (m)	Au(g/t) (g/t)	Ag(g/t) (g/t)	
HW-1					88-58	49.1	53.4	4.3	15.2	60.6	*
HW-1					88-59	45.7	48.4	2.7	5.9	30.5	
Total HW-1	720	3.5	2.5	6 309				3.5	11.6	49.0	
HW-2					88-69	60.9	69.4	8.6	10.8	52.4	
HW-2					88-108	87.8	92.0	4.2	5.7	45.3	
Total HW-2	900	6.4	2.5	14 389				6.4	9.1	50.0	
Total HW				20 700					9.8	49.7	
FW + HW				**126 100**					**6.2**	**51.3**	

* denotes individual assays capped at 28 g/t gold and 260 g/t silver

Resource Calculation Sheet - Flex Zone

section	block	true tkns (m)	height (m)	length (m)	sg	tonnes	hole	from (m)	to (m)	length (m)	Au (g/t)	Ag (g/t)	
525N	525-1	2.5	10	12	2.5	750	98-195	74.5	77.0	2.5	3.0	139.3	*
500N	500-1	7	20	12	2.5	4200	98-193	60.0	67.9	8.0	6.0	141.5	*
	500-2	2.5	20	12	2.5	1500	98-188	90.2	97.2	7.0	4.6	128.8	*
	500-3	2.5	16	12	2.5	1200	98-190	18.5	21.0	2.5	5.0	142.9	
	500-4	2.5	10	12	2.5	750	98-183	13.4	15.9	2.5	3.7	55.6	
	500-5	2.5	10	12	2.5	750	98-184	36.8	39.8	3.0	2.4	101.4	
	500-6	2.5	10	12	2.5	750	98-190	35.3	37.9	2.7	2.6	74.8	*
	500-7	2.5	10	12	2.5	750	98-193	85.1	87.9	2.8	4.6	89.5	*
475N	475-1	2.5	10	12	2.5	750	98-185	19.5	22.0	2.5	5.3	66.3	
450N	450-1	2.5	20	12	2.5	1500	98-191	31.3	33.8	2.5	4.4	115.3	*
	450-2	2.5	23	12	2.5	1725	98-191	44.4	46.9	2.5	4.8	27.6	
	450-3	2.5	25	12	2.5	1875	98-194	81.9	84.4	2.5	4.2	145.6	*
425N	425-1	2.5	15	12	2.5	1125	87-41	38.7	41.2	2.5	4.6	222.8	*
	425-2	2.5	15	12	2.5	1125	98-227	9.0	11.5	2.5	6.4	40.1	*
375N	375-1	2.5	10	12	2.5	750	87-53	36.6	39.1	2.5	5.6	94.8	*
	375-2	2.5	10	12	2.5	750	95-157	9.1	12.2	3.1	3.1	77.1	*
350N	350-1	2.5	10	12	2.5	750	87-44	3.6	6.1	2.5	5.5	261.9	*
	350-2	2.5	10	12	2.5	750	86-34	34.3	36.8	2.5	4.5	234.9	*
	350-3	4	10	12	2.5	1200	86-34	58.0	63.0	5.1	3.2	42.0	
300N	300-1	3.5	12	12	2.5	1260	86-30	17.4	22.2	4.8	8.0	166.0	*
	300-2	3	12	12	2.5	1080	98-235	32.8	36.8	4.0	3.9	50.4	*
250N	250-1	2.5	10	12	2.5	750	98-234	53.4	56.0	2.6	3.4	22.8	
	250-2	2.5	10	12	2.5	750	86-33	13.5	16.5	3.0	6.6	163.7	*
200N	200-1	3	10	12	2.5	900	94-139	19.0	22.5	3.5	4.1	20.1	
	200-2	3	15	12	2.5	1350	94-139	34.2	37.7	3.5	8.1	304.0	*
	200-3	3	15	12	2.5	1350	95-163	13.5	17.0	3.5	4.2	65.0	
	200-4	2.5	10	12	2.5	750	87-48	21.1	24.1	3.0	9.6	177.5	*

175N	175-1						94-141	28.1	31.6	3.5	7.7	188.6	*	
							95-166	43.1	47.7	4.5	3.6	66.8	*	
	wt avg	3.5	20	12	2.5	2100				4.0	5.4	120.3		declustered
	175-2	2.5	20	12	2.5	1500	98-231	51.0	53.5	2.5	5.1	140.0	*	
	175-3	3.5	10	12	2.5	1050	95-164	18.0	21.9	3.9	5.7	48.1	*	
	175-4	3	10	12	2.5	900	98-231	17.5	20.5	3.1	6.8	130.0	*	
	175-5	3.5	10	12	2.5	1050	95-164	12.3	15.8	3.5	3.4	124.8		
75N	75-1	2.5	10	12	2.5	750	96-174	6.3	8.9	2.6	3.9	9.5		
50N	50-1	2.5	10	12	2.5	750	98-239	38.9	41.4	2.5	3.7	17.8		
	50-2	2.5	10	12	2.5	750	98-239	46.3	48.8	2.5	4.4	148.0	*	
Total Resource						**39990**					**5.0**	**116.0**		

* denotes that individual assays capped at 15 g/t gold and 350 g/t silver

APPENDIX IV

METALLURGICAL DATA

A. MT. NANSEN
MILL PRODUCTION SUMMARIES
- September 1968-January 1969
- November 1996-February 1999

B. PROJECTED METAL RECOVERIES FROM
BYG FEASIBILITY STUDY 1994

C. MT. NANSEN PROCESS FLOWSHEETS

D. GIANT YELLOWKNIFE FLOWSHEET

TABLE 3

MILL PRODUCTION - SEPT., 1968-JAN., 1969

	TONNAGES			ASSAYS						METAL CONTENTS				RECOVERIES				Calc. Head	
				Head		Con		Tails		Con		Tails		Con		Tails			
Month	Head	Con	Tails	Au	Ag	Au	Ag	Au	Ag	Au	Ag	Au	Ag	Au	Ag	Au	Ag	Au	Ag
				opt	opt														
Sept./68	390	167		.121	2.45		48	.03	.43	16.7	314.0	11.2	91.4	59.9	77.5	40.1	22.5	.072	1.04
Oct./68	2265	175.6		.23	5.01			.061	.66	259.4	8406.3	127.5	1380.0	67.0	85.8	33.0	14.2	.171	4.32
Nov./68	3967	200.3		.23	4.76		57	.097	.79	392.5	11465.5	365.0	2975.0	51.8	79.3	48.2	19.7	.191	3.64
Dec./68	4146	209.1		.23	4.5		45	.096	.56	353.2	9437.5	378.0	2205.0	48.3	81.0	51.7	19.0	.167	2.58
Jan./69	5218	273.4								619.9	17935.0								
				↑	↑														
				7.8g/t	150g/t									↑	↑			↑	
																		5.8g/t	

TABLE 4

PROJECTED MILL PRODUCTION TO JULY, 1969

Feb./69	5200	561	4639	.50	8.90	3.91	70.0	.195	1.50	1690.	39300.	910.	6950.	65.0	85.0	Additional Cyanide Plant Recovery		
Mar./69	6300	694	5706	.54	9.70	3.43	75.0	.179	1.60	2380.	52000.	1022.	9100.	70.0	85.0	Au	Ag	Start regrind
April/69	7300	715	6585	.60	9.80	4.29	85.0	.199	1.44	2070.	60700.	1310.	10300.	70.0	85.0			
May/69	6000	588	5412	.52	12.70	3.38	110.0	.173	2.12	2185.	64700.	935.	11500.	70.0	85.0			
June/69	6000	627	5373	.53	19.60	3.55	150.0	.178	4.37	2225.	94000.	955.	23500.	70.0	80.0	15.0	80.0	Start cyanide plant
July/69	6000	688	5312	.57	21.50	3.47	150.0	.194	4.86	2390.	103200.	1030.	25800.	70.0	80.0	20.0	15.0	

MOUNT NANSEN MILL PRODUCTION

November 1996 to February 1999

Mill Production		**Average grades**		**Average Recovery**		**Au gms**	**Ag gms**			**Au g/t**	**Ag g/t**	**% Au**	**% Ag**
Month	Tonnes	Au g/t	Ag g/t	% Au	% Ag								
Nov-96	5506	3.5	16.0	90	36	19271	88096	493337.6	198216				
Dec-96	10615	7.9	71.3	94	53	83858.5	756849.5	992502.5	562595				
Jan-97	13978	6.6	56.2	86	49	92254.8	785563.6	1202108	684922				
Feb-97	5223	5.4	36.3	85	43	28204.2	189594.9	443955	224589				
Mar-97	8282	12.3	85.4	90	53	101868.6	707282.8	745380	438946				
Apr-97	6301	10.8	96.4	86	51	68050.8	607416.4	541886	321351				
May-97	8841	8.5	69.3	83	48	75148.5	612681.3	733803	424368				
Jun-97	10889	7.5	114.9	82	45	81667.5	1251146	892898	490005				
Jul-97	11558	5.5	65.2	76	33	63569	753581.6	878408	381414				
Aug-97	12471	5.6	46.2	47	28	69837.6	576160.2	586137	349188				
Sep-97	8169	7.1	40.8	82	25	57999.9	333295.2	669858	204225				
Oct-97	12587	5.3	34.8	84	43	66711.1	438027.6	1057308	541241				
Nov-97	5850	5.0	30.0	84	43	29250	175500	491400	251550				
Mar-98	7153	5.7	66.4	82	42	40772.1	474959.2	586546	300426				
Apr-98	9210	6.3	68.5	80	32	58023	630885	736800	294720				
May-98	9583	5.7	61.5	68	25	54623.1	589354.5	651644	239575	163241			
Jun-98	17025	6.0	47.7	67	33	102150	812092.5	1140675	561825	6.7	59.9	79	40
Jul-98	14362	6.6	52.5	46	13	94789.2	754005	660652	186706				
Aug-98	18354	5.3	41.7	52	18	97276.2	765361.8	954408	330372				
Sep-98	15289	3.8	29.9	55	18	58098.2	457141.1	840895	275202				
Oct-98	9663	5.5	35.0	52	15	53146.5	338205	502476	144945				
Nov-98	14676	5.0	25.0	50	12	73380	366900	733800	176112				
Dec-98	14666	4.0	29.2	51	28	58664	428247.2	747966	410648				
Jan-99	15313	6.7	47.2	50	25	102597.1	722773.6	765650	382825				
Feb-99	3121	8.0	45.0	50	18	24968	140445	156050	56178				
	105444					562919.2	3973079	5361897	1962988	5.3	37.7	51	19
Total	**268685**					**1656179**	**13755565**	18206543	8432144	6.2	51.2	68	31
Gms recovered												**1109640**	**4401781**
Ounces						**53246.49**	**442244.2**					**35675.15**	**141518.2**
Oz in tails												**17571.34**	**300726.1**

- A water treatment plant may be necessary to ensure that all release to the environment meets regulatory standards.

7.5 Projected Metallurgical Results, Oxide and Other Ores

There has been extensive test work done over many years on the sulphide and mixed sulphide/oxide ores at Mt. Nansen. The reports on all of these tests, as well as information from the operating years, has been reviewed and data compiled in the form of two reports in Appendix E.

This work indicates and substantiates the following expected metallurgical results from the variety of ores to be treated at Mt. Nansen.

Source of Ore	Process	Gold Recovery	Silver Recovery
Brown McDade Oxide	Cyanide	90.16 %	55.77 %
Brown McDade Sulphide	Cyanide	83.59 %	45.77 %
Flex Oxide	Cyanide	79.90 %	62.60 %
Webber Mixed Oxide/Sulphide	Cyanide	80.40 %	89.90 %
Webber Mixed Oxide/Sulphide	Flotation/Cyanide	90.30 %	96.10 %
Huestis Sulphide	Flotation/Cyanide	90.30 %	96.10 %

7.6 Alternatives

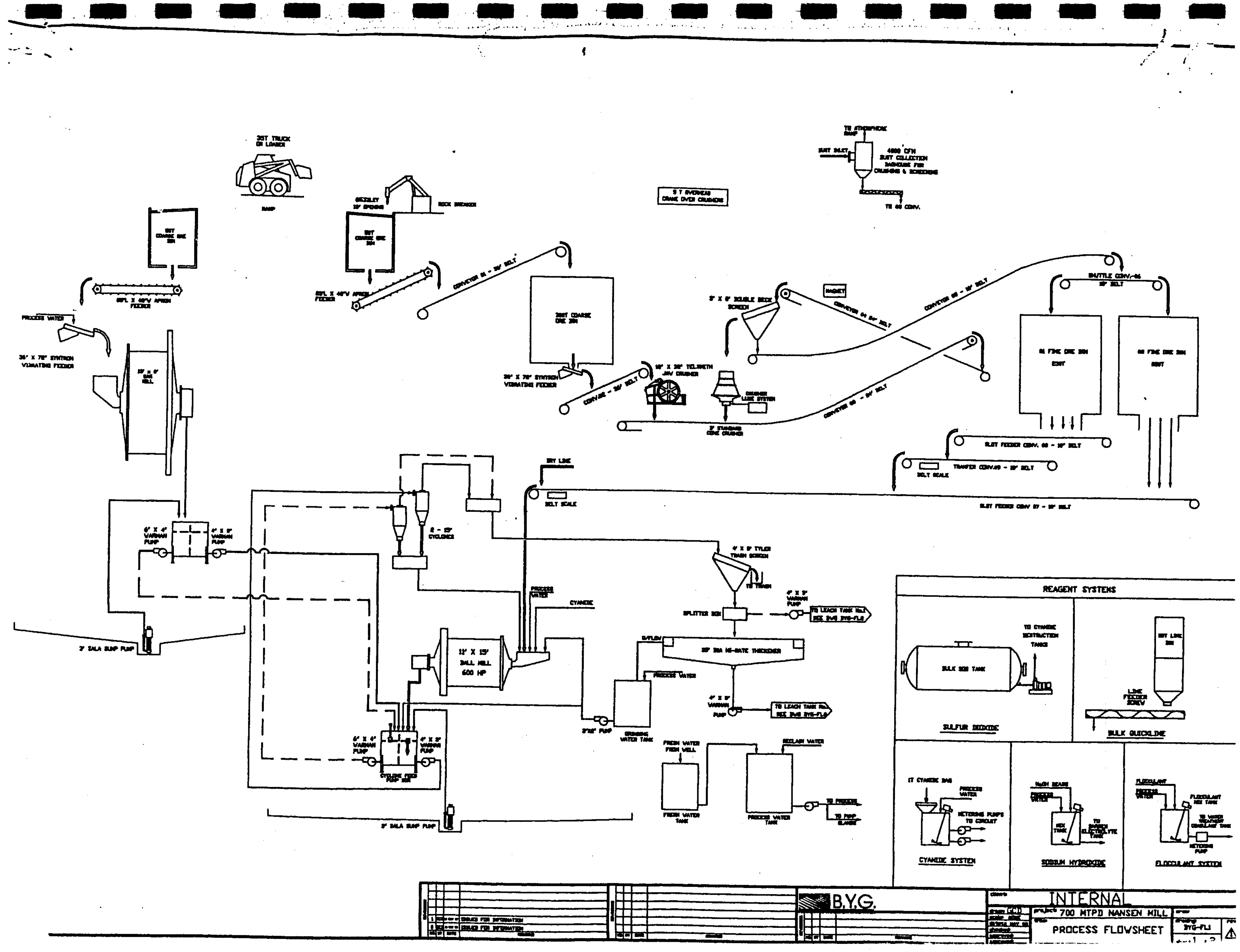
The following alternatives to the metallurgical and tailings dam proposals have been examined.

7.6.1 Ore Treatment - Oxide ores

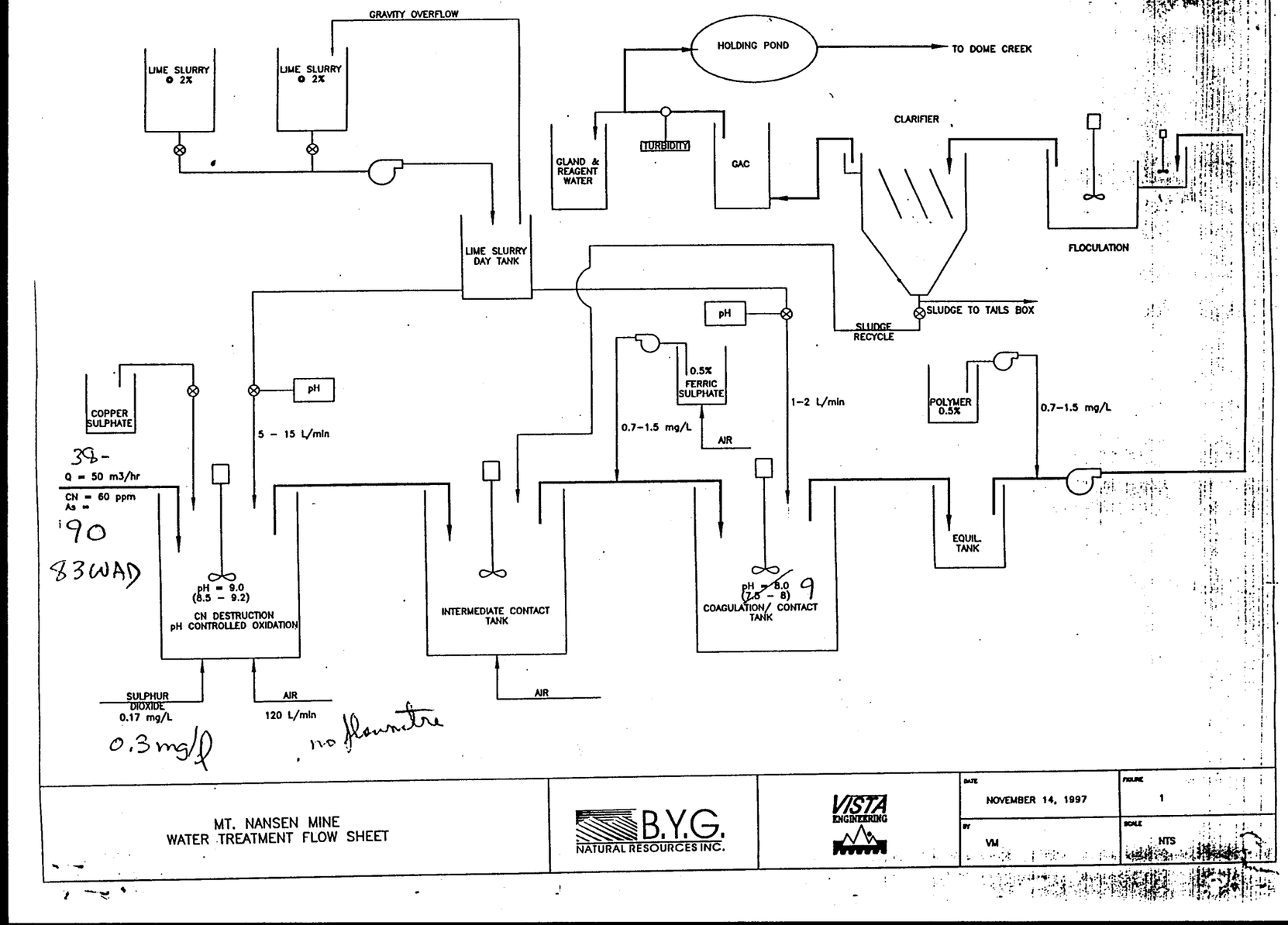
The cyanidation of the oxide ores is the only realistic option available. However, within the proposed 400 tonne per day option, the use of Merrill-Crowe zinc precipitation method was considered. Filtration of the leached tailings material is a prime consideration in this design, and the filtration tests run on the ore projected very poor results.

Some preliminary column tests were run on oxidized material to determine whether "heap leach" technology might be a consideration. Recoveries were quite high from the surface trench material tested. There were some concerns about clay like material that would be mixed with the zone, but essentially heap leaching was not pursued because of uncertainties about operating in the Yukon cold weather conditions. The possibility of using "heap leach" in the future is not discounted.

Similarly, "vat leach" was also considered. This approach uses heap leach as a basis, but the material is dumped into vats, leached with cyanide, the material removed by loader to a dump, and the vat recharged. The costs of this method come close to a full cyanidation approach, and the recoveries are less certain.



11' X 15'
BALL MILL
600 HP
REAGENT SYSTEMS
SULFUR DIOXIDE
BULK QUICKLIME
CYANIDE SYSTEM
SODIUM HYDROXIDE
FLOCCULANT SYSTEM
B.Y.G.
INTERNAL
700 MTPD MANSEN MILL
PROCESS FLOWSHEET



MT. NANSEN MINE
WATER TREATMENT FLOW SHEET

B.Y.G. NATURAL RESOURCES INC.

VISTA ENGINEERING

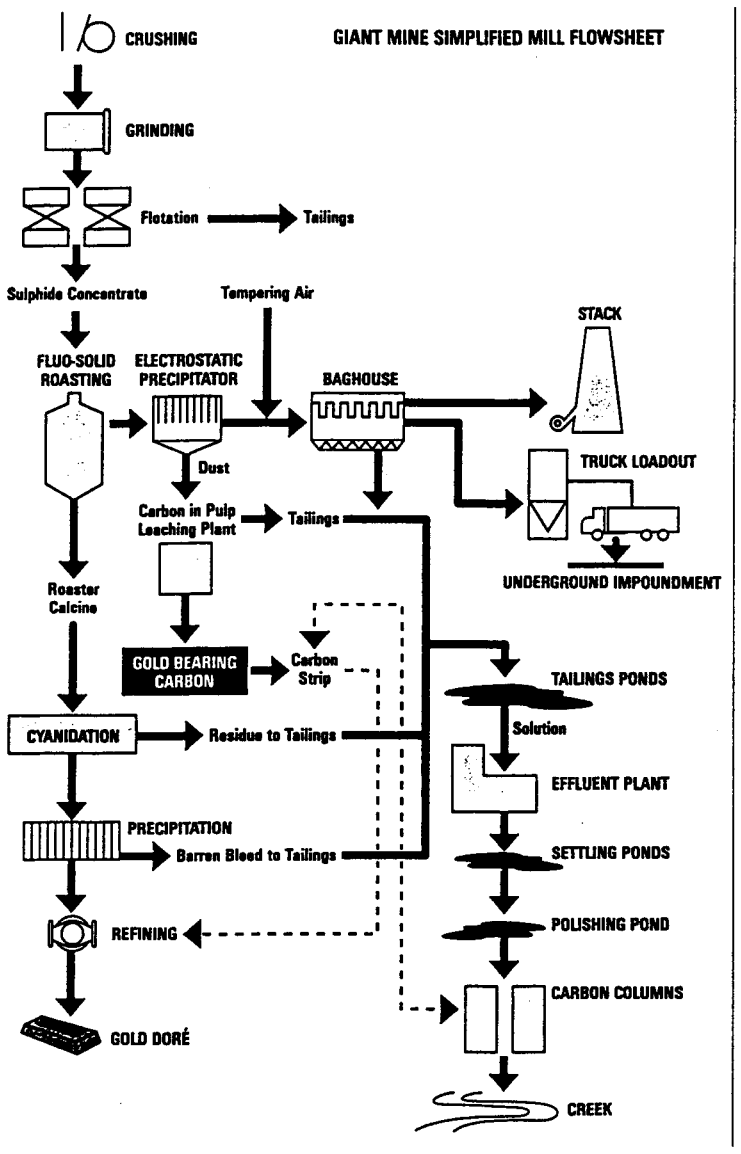
DATE: NOVEMBER 14, 1997	FIGURE: 1
BY: VM	SCALE: NTS

Gold present in the Giant Mine ore is associated with arsenic bearing materials, namely arsenopyrite. In order to recover the gold from this refractory ore, it must be treated by flotation followed by roasting and cyanide leaching processes. With these processes a recovery of approximately 88% can be achieved.

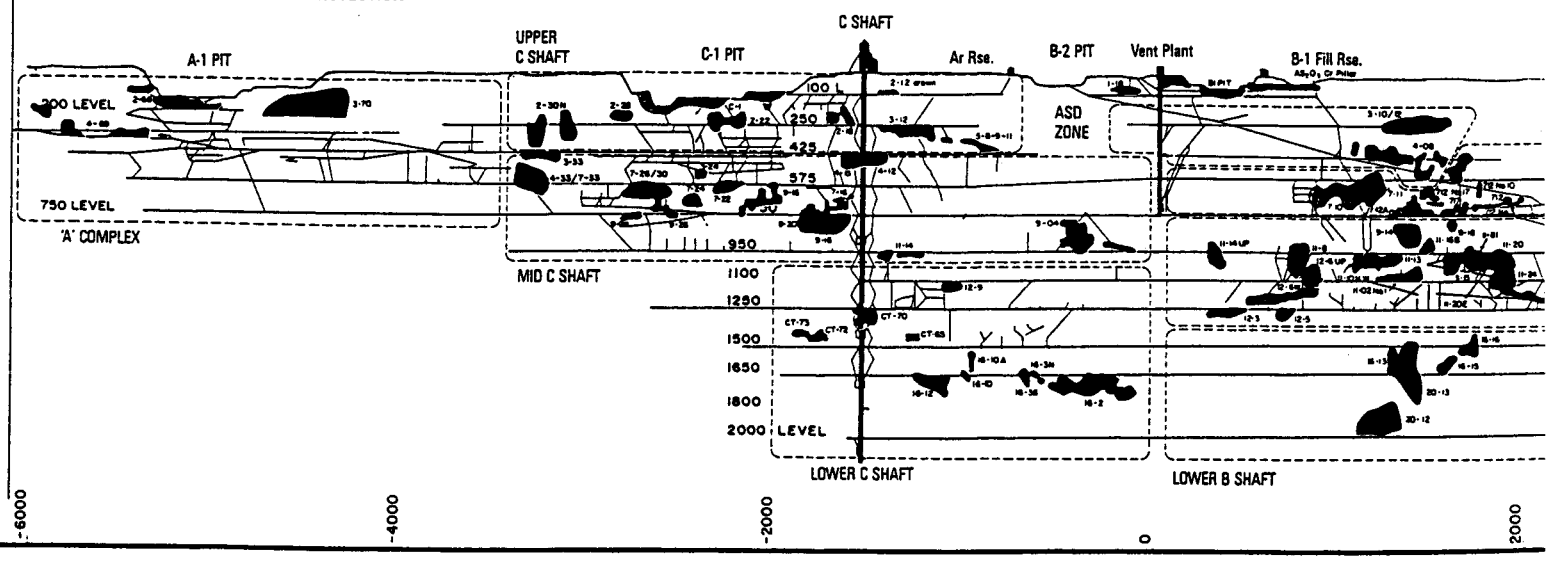
The milling capacity at the Giant Mine mill is 1,200 t.p.d. with a roasting capacity of 220 tons per day. Flotation and cyanide tailings are pumped to active permitted tailings dams.

The effluent water treatment plant at Yellowknife treats over 4,000 gpm of effluent water from the mine and mill operations. This hydrogen peroxide system, which is designed to effectively reduce effluents to below the limits set by the N.W.T. Water Board, is currently operated in the summer months when effluent is discharged to the environment.

Assay services for the Yellowknife operations, as well as the western exploration group, are provided by the laboratory on site where some 400 samples per day are analyzed for gold, silver, sulphur, arsenic, and antimony by both fire assay and atomic absorption spectrophotometry methods.



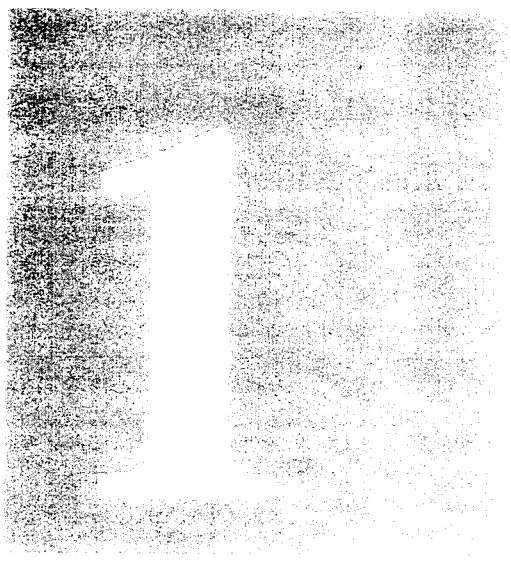
GIANT MINE LONGITUDINAL PROJECTION



APPENDIX V

GOLD MARKET REVIEW

Prepared by
Gold Fields Mineral Services Ltd.
April 2000



At the beginning of 1999 few would have expected the market to be contemplating the real possibility of $220 and then $400 gold within the space of six weeks. As it turned out, the movement in the price from late August to early October, though spectacular in its speed and scope, was limited to "only" $73 (the high for the year was recorded on 5th October at $325.50).

The swing in sentiment towards gold was equally dramatic and helped to trigger these extraordinary price movements. After the UK Treasury announcement on 7th May, the prevailing view was that if Britain was a seller any country could be. Expectations of sub-$250 gold became widespread and played a major part in the record level of producer hedging in the third quarter. Ironically, this hedging nearly brought about the very situation the mining companies most feared. (By this stage, it was producers rather than speculative short-sellers who were mainly driving the price).

Yet, within a few weeks, and in the wake of the European Agreement, there was talk of a "new era" for gold. In no time gold had punched through the $300 level. Fears that the agreement would lead to liquidity drying up proved to be self-fulfilling: dealers scrambling to borrow gold drove up leasing rates, leading, in turn, to further desperate borrowing. Above all it was the bullion banks that were active over this period trying to cover their rising exposure, in particular to their producer clients. This exposure had risen exponentially, in part due to derivative structures coming into play as the price, leasing rates and volatility all exploded.

The market was on a knife-edge. At this time, given the right trigger, gold could have moved very much higher. The spark was nearly provided by Ashanti, as the mining company came close to being forced into covering its over 300 tonne hedge book. Had this buy-back occurred, the price of gold could easily have been driven up to the $400 level.

Table 1

World Gold Supply and Demand

GFMS

tonnes

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Supply										
Mine production	2,133	2,159	2,234	2,287	2,279	2,274	2,358	2,481	2,541	2,576
Official sector sales	198	111	622	464	81	173	275	376	370	420
Old gold scrap	531	482	488	576	617	625	641	629	1,098	613
Net producer hedging	234	66	135	142	105	475	142	504	97	484
Implied net disinvestment	-	312	10	-	225	55	103	241	-	-
Total Supply	**3,095**	**3,129**	**3,489**	**3,469**	**3,307**	**3,601**	**3,520**	**4,231**	**4,106**	**4,092**
Demand										
Fabrication										
Jewellery	2,188	2,359	2,762	2,554	2,619	2,792	2,851	3,345	3,151	3,128
Other	495	518	446	488	457	503	486	562	568	594
Total Fabrication	2,684	2,877	3,208	3,043	3,076	3,295	3,337	3,907	3,720	3,722
Bar hoarding	224	252	282	162	231	306	182	324	157	230
Implied net investment	188	-	-	264	-	-	-	-	229	140
Total Demand	**3,095**	**3,129**	**3,489**	**3,469**	**3,307**	**3,601**	**3,520**	**4,231**	**4,106**	**4,092**
Gold Price (London PM,US$/oz)	383.59	362.26	343.95	359.82	384.15	384.05	387.87	331.29	294.09	278.57

Totals may not add due to independent rounding. Net producer hedging figures are exclusive of any delta hedging of central bank options.

1 SUMMARY AND PRICE OUTLOOK

As it turned out, gold proved to be no more sustainable above $300 than it had earlier been in the $250s. The reason in each case was essentially the same: the price elasticity of physical supply and demand.

At its low point there is little doubt that a key element which prevented the slide through $250 was the strength of physical demand for jewellery and bar hoarding. The opposite was true when gold was trading above $300: physical demand dried up and, as the price moved still higher, increasing amounts of metal started to be dishoarded and scrapped.

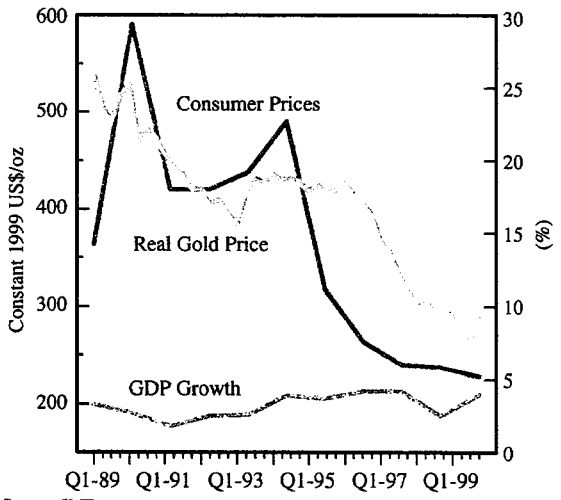
The message is that for gold prices to be sustainable at either extreme, it is necessary for existing (and potential) holders of bullion stocks to provide the required additional buying or selling.

For lower levels to be maintained this means that central banks and private holders of stocks have to be prepared to sell (and lend) more metal at lower prices – something that did not happen last year. Indeed, the most positive message to come out of the European Agreement is that it showed central banks were not indifferent to the gold price and that they would structure their sales and lending accordingly. There is little doubt that the prospect of sub-$250 gold was a major factor behind the Europeans' unprecedented announcement on 26th September. On the other hand, the agreement confirmed the official sector's preference for reducing its bullion holdings. (In this regard, the UK Treasury announcement and the European Agreement were both milestones along the road to gold demonetisation).

Similarly, for gold to burst free on the upside from the constraints of price-elastic physical demand, there has to be a desire on the part of private and fund investors to add to their bullion stocks, especially as it can be assumed that central banks would remain net sellers. In this regard, it is significant that genuine investor interest was close to zero when gold was making its highs last year. Instead of buying gold, private holders of stocks, particularly in Europe, saw this as the moment to exit the market and sold back impressive quantities of bullion.

Figure 1

Gold Price and World Economic Indicators



Source: IMF

Looking ahead, there is little to indicate an imminent shift in behaviour from either central banks or private investors that would result in gold breaking out of the limits within which it traded last year. This is not to say that the outlook for the precious metal is bleak. Indeed, the improvement in world economic growth this year should lead to higher jewellery and industrial demand. And, with the boom in mine production having come to an end, there is scope for prices to remain relatively firm, especially as producers are likely to bring less accelerated supply to the market through hedging than they did in 1999.

Supply in 1999

- *Increased mobilisation of above-ground stocks of gold by producers and the official sector weighed heavily on the price for most of the year.*
- *Producers generated 75% of total supply through mine production and very high levels of hedging.*
- *Central banks added 420 tonnes through selling and increased their lending by around 375 tonnes.*
- *Scrap fell back to pre-Asian crisis levels, reaching 613 tonnes in 1999, despite the rally later in the year.*

The market in 1999 struggled to absorb very large volumes of gold, but not from the "traditional" source of mining. Global mine production did increase, although by only 35 tonnes or 1%, to reach 2,576 tonnes.

Producers proved last year that they could maintain production even with the price at historically low levels. But it became evident that the pace of expansion in the industry was declining, with the impact of cutbacks and closures, and the reduction in exploration expenditure in recent years, starting to have a visible impact.

Figure 2
World Gold Supply

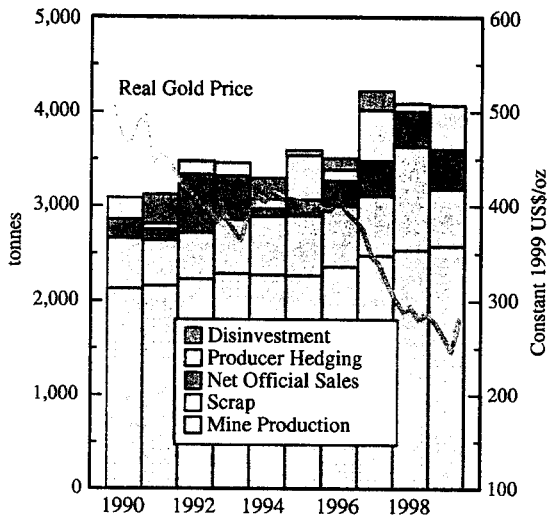
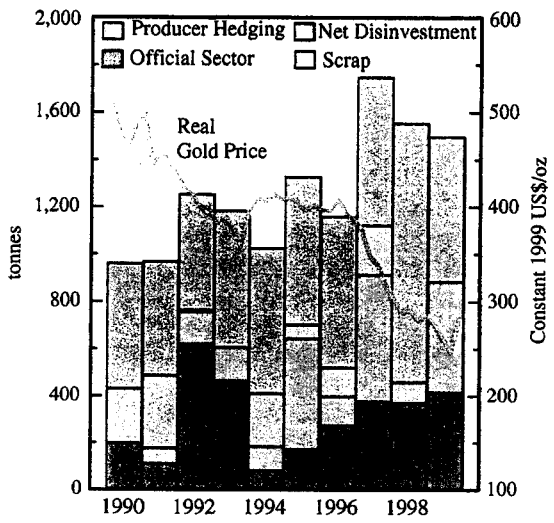


Figure 3
Mobilisation of Above-ground Stocks



Production costs averaged only $197/oz ($10 down from the previous year), and in contrast to 1998, last year these low costs were achieved in the absence of significant currency weakness. Much of the "saving" was the result of higher-cost mines closing, and production from these mines being replaced with low-cost output from large new mines such as Pierina in Peru (which in 1999 produced 26 tonnes at a total cash cost of only $42/oz).

But miners influenced the market last year primarily through hedging. Producer hedging activity generated a net 484 tonnes of accelerated supply during the year (an increase of 387 tonnes over 1998). In the first nine months, as prices plunged through successive 20-year lows, producers desperately tried to establish some price floor and lock in some margin. GFMS estimate that as much as 715 tonnes came to the market during this period, which naturally put a lot pressure on the price. When the market turned suddenly in September, what had been an asset became a large liability for many hedged producers, and in at least two widely publicised cases brought deeply-hedged producers to the brink of financial ruin. The subsequent unravelling of hedge positions required some buy-backs of gold, which added impetus to the rally. For a while, the possibility that Ashanti in particular might have to buy-back large volumes of gold was a positive factor in the market, and the announcement that agreement had been reached with their counterparties saw the price drop back fairly substantially.

The official sector also exerted enormous influence on the price last year, both through announcements and through actions. Announcements from the official sector first drove the price to its low (in the months following the UK Treasury announcement of intended sales in May) and then to its high (in the days after the European Agreement announcement of limited sales and lending in September). In addition to these impacts, there were high levels of sales by central banks, particularly in the second half of the year. Also, central bank supply of liquidity to the market through swaps and deposits, which has grown tremendously in recent years, rose again in 1999. The total official sector lending pool is estimated to have reached 4,750 tonnes by year-end. Last year, most of the increased liquidity was applied to fund producer hedging activity and, in addition, to meet the unprecedented borrowing demand from bullion banks following the European Agreement.

Scrap, which had been such an important presence in the market in 1998, last year dropped back to pre-Asian crisis levels. A 44% decline to 613 tonnes was recorded, despite a noticeable increase in scrap flows from certain Asian and Middle Eastern countries during the price rally.

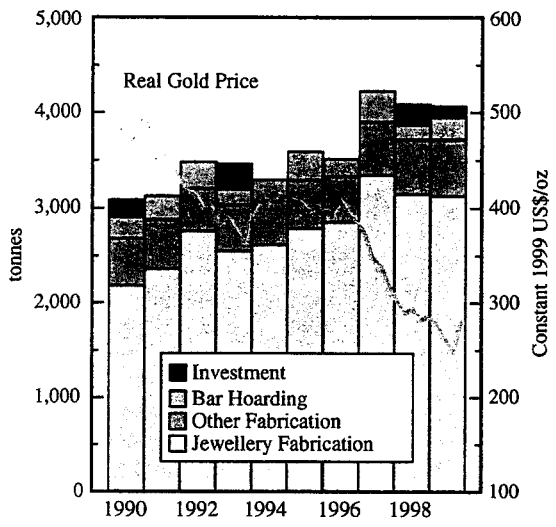
Demand in 1999

- *Total fabrication at 3,722 tonnes was effectively flat year-on-year, with the 0.7% fall in jewellery demand being almost exactly offset by a 4.6% growth in other fabrication demand.*

- *East Asian jewellery demand, excluding China, rose by a remarkable 26%, although total offtake was still well short of the record levels seen in the mid-1990s. North American demand also increased, by close to 6%.*

- *Jewellery fabrication fell in Europe, the Middle East, Latin America, China and the Indian sub-continent.*

Figure 4
World Gold Demand



• *Bar hoarding surged by close to 47%, primarily on the back of a phenomenal 53 tonne increase in Japan.*

• *Investment of 140 tonnes was largely the result of fund short-covering, which outweighed physical disinvestment of bullion, especially in Europe.*

In 1999, there were only a handful of countries where fabrication offtake grew substantially. Three countries stand out in particular, Indonesia (up 103%), Thailand (62%) and Korea (41%). In all three instances, economic recovery and lower local currency gold prices were the main driving forces. Figure 5 shows how this translated into a strong rebound in demand for "new gold" from the region. Impressive growth in demand, mostly for jewellery, was not confined to East Asia. Fabrication, for example, was also higher year-on-year in countries as diverse as the United States, Mexico and Pakistan.

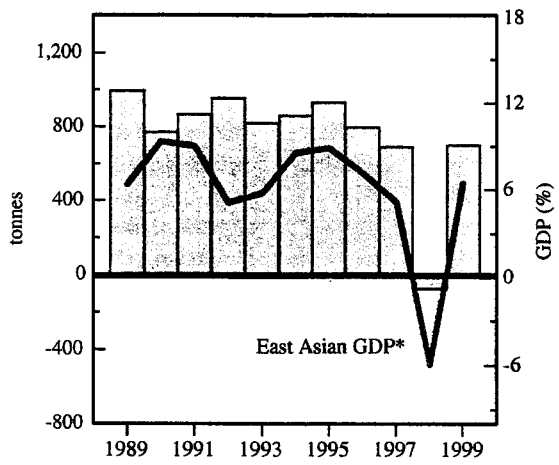
However, some of the largest fabricating countries saw demand fall, in certain cases, markedly. Italian fabrication declined by 4.5%, due in part to weaker local jewellery consumption, while earthquake-struck Turkey experienced a 23% fall in offtake. Notably, Indian jewellery demand fell year-on-year for the first time since 1993, partly due to lower rural incomes. Chinese jewellery and bar hoarding demand also fell in 1999 for the second year running.

It was only in electronics where growth was almost uniformly seen last year. The top six fabricating countries, which account for close to 90% of fabrication demand, all recorded increases in 1999.

Net investment, as implied by the residual from our supply/demand balance, declined by 39% to 140 tonnes. At first glance it may seem surprising that this number was not higher, given the large-scale covering of short positions which was seen during and immediately after the run-up in the price. However, as we explain in Chapter 3, this was by no means the only significant event in the area of investment last year. For instance, throughout the year, and especially during fourth quarter when local prices were very attractive, there was heavy disinvestment of physical gold throughout Europe.

Indeed, we estimate that, prior to the massive short-covering in September/October, the market saw net disinvestment due to this phenomenon and the growth in fund short positions that had occurred after the UK announcement in May.

Figure 5
East Asian Demand for "New Gold"
Fabrication plus bar hoarding less total scrap supply



* Weighted average: Indonesia, South Korea, Thailand

GOLD PRICES

2

- The gold price averaged just $278.57 in 1999, down over 5% or $15.52 on 1998 and a twenty year low.

- Gold traded between $252.80 and $325.50 in 1999. Volatilities surged in the fourth quarter to close to 24%, up from just 9% in the third.

- Two key events, the UK Treasury announcement on the 7th May, and the European Agreement on 26th September, had a profound impact on the price.

- Gold price moves in certain currencies contrasted markedly with changes in the dollar price. In many cases, these moves were favourable to demand, unlike in 1998 where they were uniformly negative.

- The experience of 1999 points towards prices above $300 being very difficult to sustain for any length of time. Conversely though, the year showed that prices close to $250 are also unsustainable, at least in the medium term.

Gold Prices

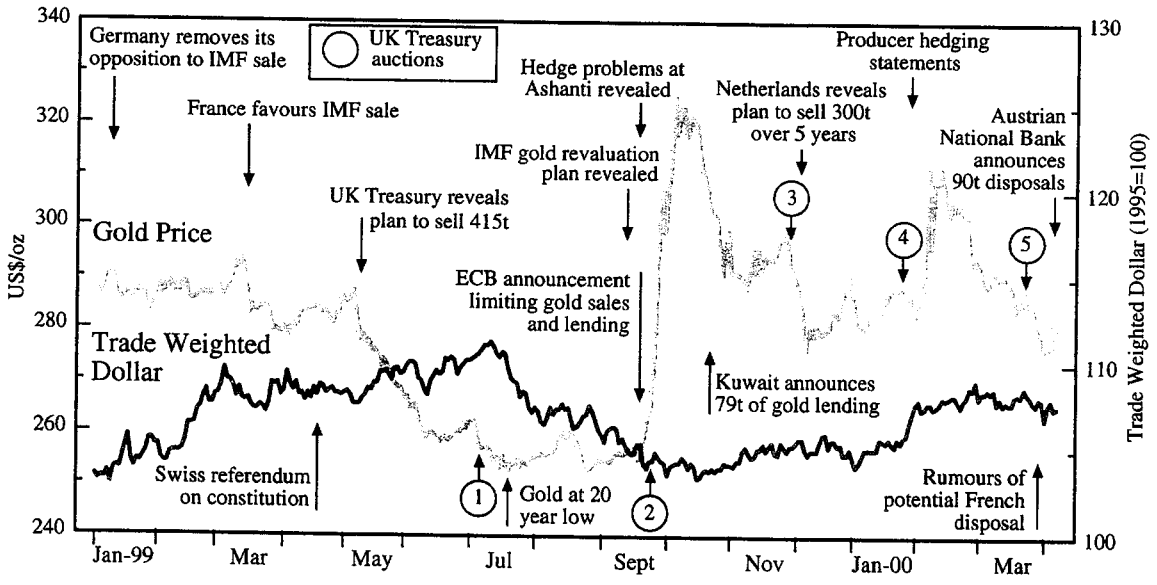
	1998 Average	1999 Average	y-o-y Change	1999 Intra-year
			%	%
US$/oz	294.09	278.57	-5.3	1.1
Rand/kg	52,037	54,764	5.2	5.9
DM/kg	16,636	16,438	-1.2	19.0
A$/oz	467.79	431.84	-7.7	-4.4
Yen/g	1,238	1,018	-17.8	-8.1
Rps/10g	4,173	4,327	3.7	7.2
Rph/g	97,979	70,394	-28.2	-10.2
Euro/kg*	8,506	8,405	-1.2	19.0

* Hypothetical prices based on 31st December 1998 DM/euro conversion rate

Figure 6

Gold Price and Trade-Weighted Dollar

Daily



Introduction

1999 was a remarkable year in the gold market. Having seen the price plumb successive 20-year lows for much of the first nine months of the year (touching its low of $252.80 on 20th July), gold staged a spectacular rally in late September, rising by over 20% in the space of only seven trading days (to its high for the year of $325.50 on 5th October). Leasing rates, having languished at low levels, also rose strongly, and in certain tenures, to record highs. In a market more exposed to derivatives than at any time in the past, volatilities, both historical and implied, rose to extremely high levels, forcing producers and banks to scramble to cover their positions and reduce their exposure.

US$ Gold Price

	1969	1979	1989	1999
Annual Average	41.11	304.69	380.79	278.57
Maximum	43.83	512.00	415.80	325.50
Minimum	35.00	216.85	355.75	252.80
Range:Average	21.5%	96.9%	15.8%	26.1%

But the storm passed as quickly as it had come. After touching its high, the price retreated rapidly, and within less than a month was testing the $300 level again (falling below this on 26th October). By year end, the market had settled back into the familiar pattern of sub-$300 gold (albeit with a brief period above $300 in February), with most of the pressure again appearing to be on the downside.

A common thread throughout all of the extreme fluctuations seen in the market last year was the official sector, or more to the point, the issue of official sector transparency. Two examples of this stood out: the May announcement by the UK Treasury that it would auction gold via the Bank of England and the September announcement by 15 European central banks that they would limit their sales and lending.

To place these announcements in context, it is worth looking back to the beginning of 1999 when the fashionable view was that gold's only problem was unsubstantiated rumours about central bank activities. The call then was for increased transparency from the official sector, with the belief that once it had made its intentions clear, the price would be allowed to return to its more natural, and higher, equilibrium level.

Trading Ranges in 1999

	US$/oz	DM/kg	SF/kg	Yen/g	A$/oz	Rand/kg
Annual Average	278.57	16,438	13,450	1,018	431.84	54,764
Maximum	325.50	19,163	15,599	1,143	493.51	63,242
Minimum	252.80	14,901	12,164	862	382.03	49,182
Range:Average	26.1%	25.9%	25.5%	27.6%	25.8%	25.7%

Figure 7

Annual Gold Prices

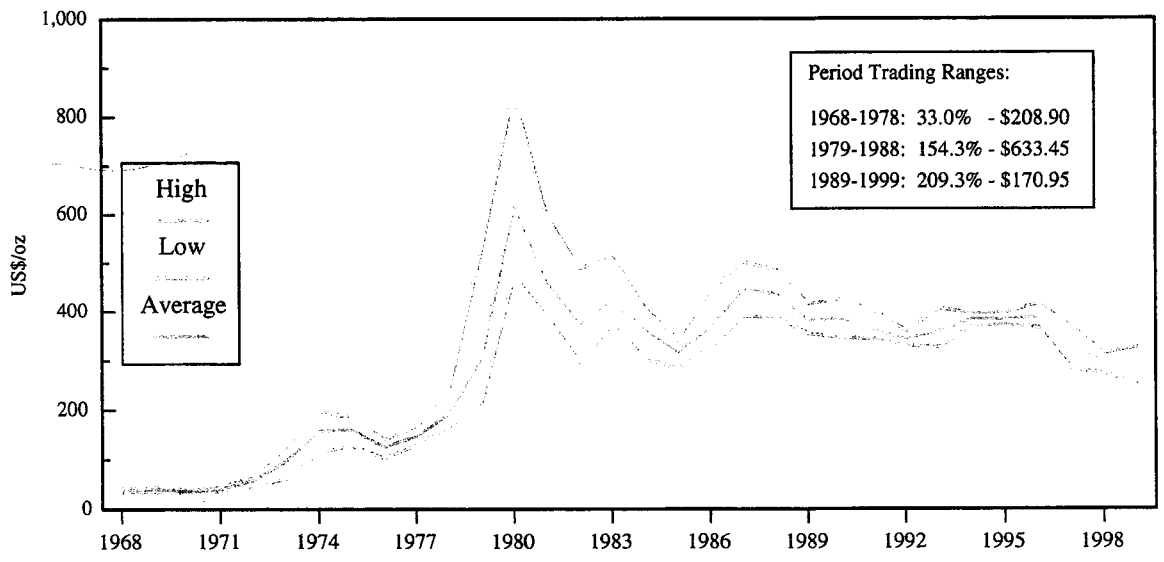
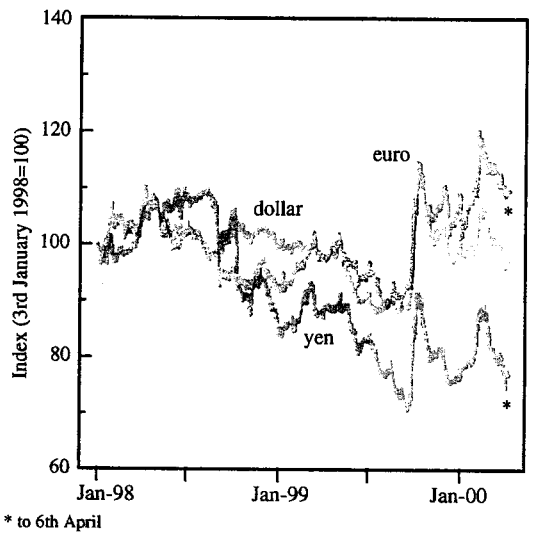


Figure 8

Gold Prices in Other Currencies



* to 6th April

However, the dose of transparency that the market eventually had to contend with was probably more than even its most ardent advocates had hoped for, and in some instances, had quite the opposite effect to what they might have wanted. It always seemed probable that greater transparency would go hand-in-hand with formalising the process of demonetising gold - something that has for all intents and purposes happened with the European Agreement (presumably quite the opposite of what some had hoped for).

Annual Highs/Lows and Trading Ranges

	1995	1996	1997	1998	1999
	395.55	414.80	366.55	313.15	325.50
US$/oz	372.40	367.40	283.00	273.40	252.80
	6.0%	12.2%	25.2%	13.5%	26.1%
	19,030	19,819	19,752	18,401	19,163
DM/kg	16,927	17,950	16,134	15,365	14,901
	11.9%	10.0%	19.6%	18.2%	25.9%
	16,073	16,244	17,182	15,268	15,599
SF/Kg	13,850	14,475	13,035	12,465	12,164
	15.2%	11.5%	26.8%	20.4%	25.5%
	1,289	1,422	1,416	1,347	1,143
Yen/g	1,023	1,301	1,149	1,061	862
	23.0%	8.9%	20.8%	23.1%	27.6%
	545.97	551.47	464.09	506.32	493.51
A$/oz	487.90	453.24	424.71	430.04	382.03
	11.2%	19.8%	8.8%	16.3%	25.8%
	46,143	57,871	55,330	61,001	63,242
Rand/kg	42,538	45,571	44,464	44,256	49,182
	8.1%	23.0%	22.2%	32.0%	25.7%
	5,115	5,713	5,020	4,390	4,910
Rps/10g	4,640	5,010	3,900	3,940	3,995
	9.9%	13.5%	24.6%	10.8%	21.1%

Indeed, developments in 1999 only served to confirm what GFMS and others have been arguing in the past, namely that the long-term trend towards the demonetisation and commoditisation of gold would keep the price under pressure.

Having said this, a positive aspect of the European Agreement is that it has halted the process of demonetisation by stealth. To that end, greater transparency in the gold market has always appeared to be better than less (premised on the simple belief that certainty is usually better than uncertainty). However, it has always seemed unlikely that this would be a panacea for gold's current ailments.

So where has the great transparency experiment left us? What it has done is to allow the market to test the current limits to movements in the price, and in having done so, has indicated where the current equilibrium most probably lies. Prices above $300 have been shown to be unsustainable - the price elasticity of demand (and scrap) has ensured that prices above this level cannot be held. Conversely, it has shown that prices below $250 are unlikely, at least in the medium term. What it has also done is to lay bare the myth that investment in gold was constrained by a lack of official sector transparency.

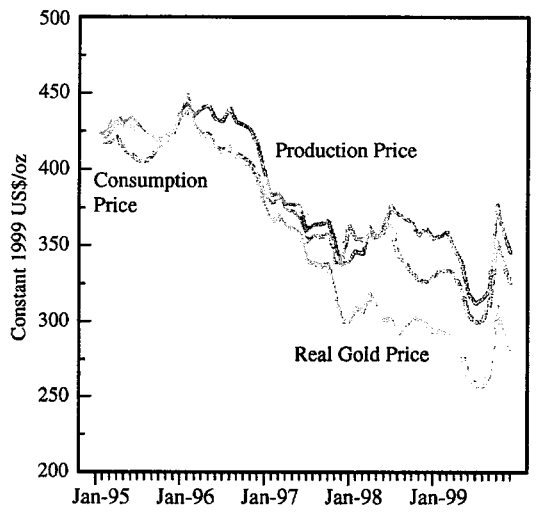
But it was not the official sector acting in isolation that caused the huge swings in the market in 1999. Last year in particular highlighted the tremendous impact that the producers and their counterparties can have on market sentiment and prices too.

There is no doubt that the huge volumes of producer hedging seen at times helped push the price down to its lows last year. By way of contrast, the price reaction to the restructuring of banks' books seen in September and October (restructuring done on the back of their exposure to producers via their hedge

Figure 9

Production and Consumption-Weighted Gold Prices

Reindexed to January 1995



books) illustrated how the market can be moved in the opposite direction. From a sentiment perspective, the market's reaction to the announcement by a number of producers that they would halt or reduce their hedging helped push the price the other way, especially in February of this year.

Statistical overview of 1999

Prices

The dollar gold price averaged $278.57 in 1999, a new twenty year low. This was 5.3% below the previous such low recorded in 1998. Somewhat surprisingly given the turbulence in the market in 1999, the intra-year change was only 1.1%. Gold started the year at $287.15 (on the PM fix) and finished it at $290.25.

A sign of how actively the gold price moved was that the trading range doubled year-on-year, from 13% or $39.75 in 1998 to just over 26% or $72.70 in 1999. The maximum price reached on the PM fix was $325.50, on 5th October, while the low for the year of $252.80 was recorded on 20th July.

Trading Ranges in East Asia and India

	Rph/g	Won/g	Baht/g	Rps/10g
Annual Average	70,394	10,653	338.56	4,327
Maximum	89,006	12,627	420.00	4,910
Minimum	54,328	9,624	301.39	3,995
Range:Average	49.3%	28.2%	35.0%	21.1%

Given the spectacular nature of the price spike in October, it is easy to lose sight of how short lived it actually was, and how deep and long, relatively speaking, the lows were. The half year splits show that in spite of the spike, the first half average, of $279.99, was $2.81 *higher* than the second half average of $277.18.

The performance of the dollar gold price contrasted markedly with movements in the price measured in other currencies. Rupiah prices, as in 1998, moved the most, except in this case, in the opposite direction to that year. The sharp fall in the rupiah gold price from an average of close to 100,000 rph/g to just over 70,000 was one of the main reasons for the rise in offtake in Indonesia last year (see Chapter 7). Similarly, the close to 18% collapse in the yen gold price (see Figure 8) was the main factor underpinning the huge surge in bar hoarding seen in Japan in 1999. A contributory factor to the weakness in Indian demand seen last year was the 3.7% rise in 1999's average price. The weakness of the euro against the dollar was reflected in a modest 1.2% fall in the average price. However, the 19% intra-year movement in the euro gold price actually encouraged disinvestment out of Europe last year on the price highs.

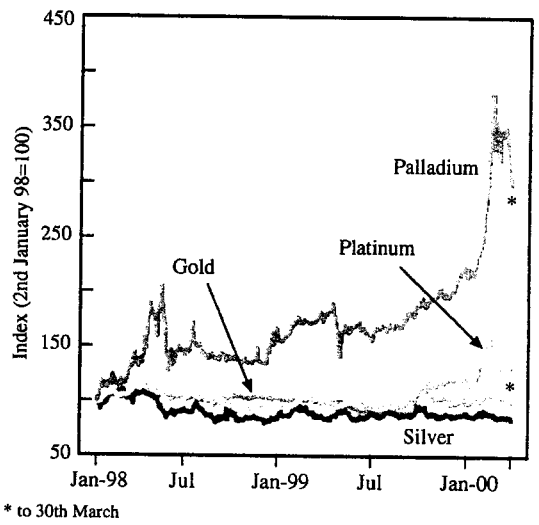
Of the producing countries, South Africa saw the rand price rising by over 5% year-on-year. By contrast, the Australian dollar gold price fell by 7.7% on average, a decline that encouraged hedging on price spikes throughout the year.

Figure 9, which shows production and consumption weighted prices, is another, more systematic way of capturing the dislocations that can occur in the pricing structure of the gold market due to currency fluctuations.

The rationale behind these series is that most of the world's gold is produced and consumed in countries whose currencies are <u>not</u> tied to the dollar. Consequently, movements in the dollar price may not immediately and directly impact on production and consumption decisions. The series is constructed using weights based on production and consumption relative to the size of the overall market. For example, India has a high weight on the consumption side

Figure 10

Precious Metal Prices



* to 30th March

while South Africa has a large weight on the production side.

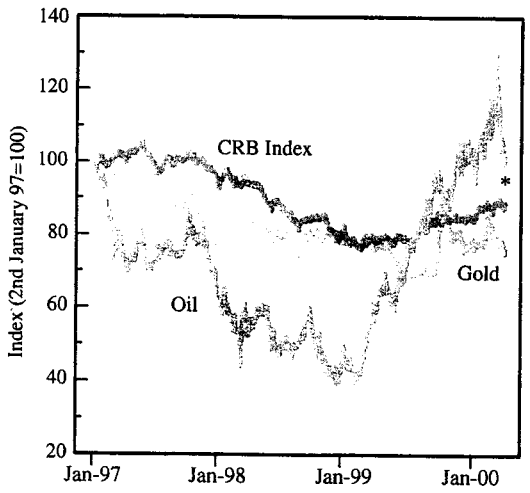
As Figure 9 shows, the synthetic production and consumption price trend followed the real gold price quite closely from 1995 until mid-1997. The impact of the Asian currency crisis, not only on consuming countries but producing countries as well (in particular, as the rand weakened sharply), is shown in the divergence of the these indices from the dollar index.

What can be gleaned from the divergence and convergence of these three series over time? On the demand side, it points to the fact that over the past couple of years, consumption decisions have been heavily influenced by movements in local currencies against the dollar - to conclude, as some might, that the fall in the dollar gold price *per se* should unambiguously stimulate demand in the large consuming countries, would simply be wrong. On the supply side, it shows that to understand production and hedging decisions, dollar prices are only part of the story.

For all the excitement surrounding the spike in the gold price, it is rather sobering to compare its performance with other commodities. Figures 10 and 11 show that in spite of the rise in the price in October, gold has significantly underperformed compared with the platinum group metals and oil. In addition to this, although the gold index went above the CRB Index late last year, it was short lived. Figure 12 shows that, ominously, gold continues to trend down towards the same price level, in real terms, as in 1968.

Figure 11

Gold, CRB Index and Oil Prices



* to 31st March

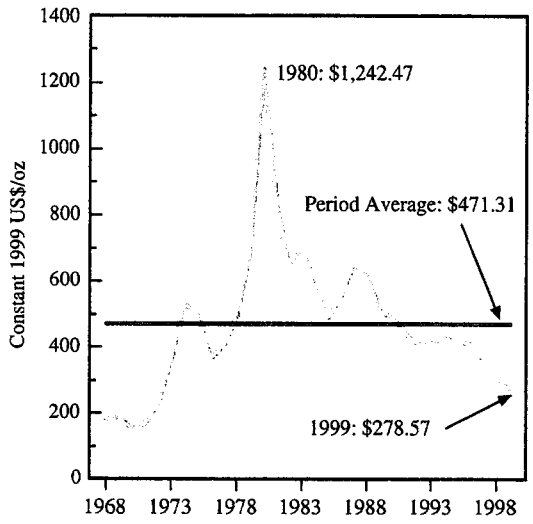
Volatility

Figure 13 demonstrates what appears to be a secular rise in gold market price volatilities. Whether this is due to the rising use of derivatives, or whether the greater use of derivatives has developed because of rising volatilities, remains to be seen. Of course, derivatives can actually help dampen swings in prices, but in 1999, the evidence seems to suggest that they increased the magnitude of these (the parallel with the role of speculators in markets comes to mind in this context).

The explosion in historical volatilities shown in Figure 13 was matched by an even greater increase in implied volatilities in the second half, pointing to the stresses that emerged in the market after the European Agreement.

Figure 12

Real Gold Price



Volatility

Volatility (US$ price, historical 30 day rolling averages)

1995	1996	1997	1998	1999
6.3%	5.8%	10.5%	12.9%	13.1%

Q1-99	Q2-99	Q3-99	Q4-99	Q1-00
9.0%	10.0%	9.3%	23.8%	22.0%

Price Commentary

As mentioned already, the official sector featured prominently in the gold market in 1999. The new year was only a few days old when the market had to digest the news that Germany had dropped its opposition to IMF gold sales (on 4th January). Although the announcement did not have an immediate impact on the price, it did signal an important shift in the balance of opinion towards the sale of IMF gold, and in this sense set the tone for much of the first three quarters of the year.

After relatively little movement in January and February, gold did manage a mini-rally in early March, supported mainly by technical factors, but which was firmly halted in its tracks by a surge in producer hedging.

The next move in the price was again dictated by news from the official sector. On 15th March, France suggested the IMF should sell some of its gold to support the HIPC initiative, followed the next day by similarly supportive comments from the US president. Three days later, the IMF's Managing Director, Michel Camdessus, came out with a comment supporting sales. These announcements saw the price fall to its first 20-year low for the year, reaching $278.43 on 6th April.

The next major official sector event was in April, when the Swiss voted in a referendum to sever the link between gold and the franc. Although this vote might have been expected to send a very negative signal to the market resulting in heavy selling, this did not materialise, presumably because the result had been widely expected and also because it lacked an explicit timetable for any potential future sales.

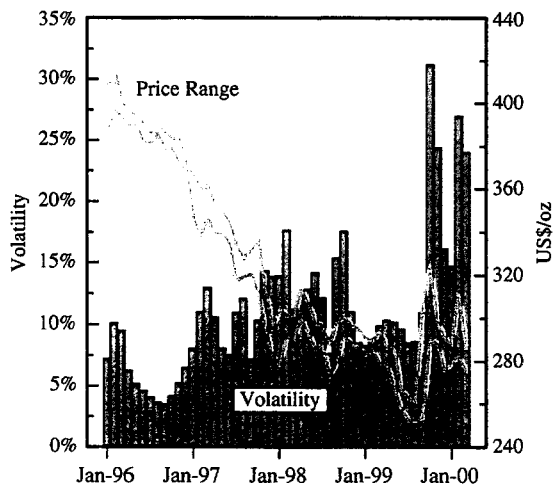
Trade Weighted Dollar Index

1995	1996	1997	1998	1999
89	97	104	109	107

Figure 13

Daily Gold Price Volatility

Based on PM fixes (30-day rolling average)



The real bombshell to hit the market came early in the following month. On the 7th May, the UK Treasury announced its intention to sell 125 tonnes of gold, by auction, during 1999 and 2000 (with the stated intention of reducing holdings of gold from 715 tonnes to 300). This precipitated a wave of front running by speculators, producer hedgers and some official sector sellers prior to the first auction on 6th July, pushing the price down to successive 20-year lows.

Market sentiment was deeply negative after the first auction - in retrospect the fact that the auction was oversubscribed 5.2 times could have been a positive signal - but with no history to gauge its success by, the price fell to its low for the year, of $252.80, on 20th July.

For much of the following two months, gold traded sideways, with any upside being knocked back by defensive hedging from producers plus net sales from the official sector. However, even though there was not a great deal of movement in the price at the time, there were growing signs of pressure from within the market in the form of rising leasing rates.

The combination of rising hedging and the financing of some official sector sales in July had already seen average lease rates rise sharply. The pressure on rates was seen at the very short end (with one month rates rising above, for example, 6- month rates) and the longer end (with 2 to 5 year rates rising sharply). Two influences were at work. Borrowing to fund short selling placed 1-month rates under pressure while aggressive producer hedging pushed up longer rates. "Y2K" fears did add to borrowing over the year end, for example as producers opted for fixed over floating rates, which fed through into a marked firming in borrowing costs. By 21st September the price had started to move on the back of pressure from rising leasing rates, a positive UK Treasury auction result (oversubscribed eight times) and a feeling that perhaps the market was oversold in the $250s.

However, nothing could have prepared the market for the profound impact of the European Agreement on Gold, announced on 26th September. Of course, the rise has to be seen in the context of a market that was already under pressure on the leasing rate front and was probably oversold. The huge volume and type of hedging done in the months before the agreement had created an "event contingent time-bomb" which was ready to explode in the right circumstances - and those circumstances came about with the announcement, particularly on leasing rates.

Within just eight trading days, the price rose by close to $56 or over 20%. At first sight, the causes of this amazing rise in the price were not all that clear. In fact, at the time, the GFMS view was that the announcement was at best mildly positive for the gold price. The reason for this was that although the announcement on lending was possibly good for the price (see Chapter 5 for more on this), the formalisation of 400 tonnes of European sales into the market for five years, which was more than double the average European disposals estimated by GFMS to have taken place over the previous ten years, was actually negative.

The price response on the Monday following the announcement (made on a Sunday) shows that the market was initially unable to come to a quick conclusion as to the full implications of the announcment, reflected in what with hindsight appears to have been a relatively modest $11 move higher the next day. In retrospect, it appears as if many had underestimated the chance confluence of a number of supportive phenomena in the market that eventually drove the price up: huge volumes of hedging prior to the announcement, often utilising new instruments designed with a relentlessly falling price in mind, a growing mismatch between producers' hedging and the official sector lending maturities (which was always going to be a problem when supplies of liquidity were under pressure), a substantial fund short position (which was already in decline) and, on the 27th September, the announcement from the IMF that the HIPC and ESAF Initiative would be financed via off-market transactions and not through outright sales of gold.

The severity of the market's eventual response was due in part to a feeling that one of the most important "rules of the game", namely the assumption of a guaranteed supply of liquidity from the official sector, had been changed. As we argued in *Gold Survey 1999 Update 2*, market participants had reasonably expected these sources not to be arbitrarily constrained (indeed, it was expected that Europe would be an important supplier of liquidity in the future), much as they do not expect central banks to arbitrarily constrain the liquidity they make available to the bond market via the "discount window". For gold to retain its monetary pretensions, central banks have to treat it as if it were money.

With no recent market experiences to draw from, coupled to the fact that the imposed liquidity limits were far from common knowledge, the market scrambled to cover its exposure. In fact, in retrospect, it appears as if some market participants thought, mistakenly, that liquidity was about to be reduced. What followed was a fine example of a market overshoot, illustrating how what appears rational at the individual level can in fact lead to collectively worse outcomes.

The initial scramble to cover individual positions quickly pushed up both prices and leasing rates - both supply and demand side phenomena were at work. In the market for liquidity, there was some withdrawal of marginal supplies, especially from the bullion banks' hold-

ing of private gold, which put pressure on rates. On the demand side, there was "overborrowing" as banks simply took up whatever liquidity was available.

But the real pressure was on the producers, in this instance, from their counterparties. Banks' credit committees, fearful of their rapidly rising exposure to the producers, instructed them to cover at least part of their positions. This was done mainly via straight buybacks and through the purchases of calls (at painfully high volatilities), which in turn fed through into yet higher price and lease rates, with inevitable consequences; yet more covering and price pressure. Coupled to this, producers who had written calls (sometimes in multiples of the downside ounces protected) to finance their puts suddenly found themselves being called to provide more metal than they could produce, for example Cambior. It is probably not exaggerating to say that there was panic amongst some providers of hedge products at the time.

Hedging, of course, should not generate these sorts of problems - in the highly stylised text-book world of hedging, losses/gains on physical positions are neatly offset by equal and opposite gains and losses on paper. However, this does not account for one of the real world's "inefficiencies", credit exposure. A fifty million dollar exposure on paper secured against mine reserves suddenly looks very different when that paper exposure increases exponentially, even if the underlying asset has increased in value too (non-linearity can be very painful). Providing margin to cover rising paper exposures causes real world problems as the well publicised difficulties of Ashanti showed.

Coupled to this, private sector speculators, mainly in the form of funds, decided to cut their losses on short positions and bought back (often covering the calls that they had bought in the first place to hedge their short positions). The move of the funds from the short to the long side of the market simply fuelled the fire.

So why did the rally run out of steam so suddenly? As would be expected in light of the above, it was not hedging - GFMS figures show that outstanding positions fell in the fourth quarter. Rather, it was the price elastic collapse in demand and surge in scrap, physical disinvestment, and most importantly, a lack of genuine new investment that combined to push the price down. Short covering rallies will always stall unless "new" money comes into the market - something that was notably absent in October.

As a final comment on 1999, it is interesting to note that the events causing the price rise last year were actually very much gold market specific. There was no LTCM or stock market crash panicking people into gold. Was this yet another sign that gold has become detached from the factors that used to be its traditional strength?

Outlook

Much was made about the European Agreement on Gold signalling a new era for the gold market. Ironically, in the short term at least, it may have done just that. But not for the reasons that many people might, at first sight, think.

Rather than signalling a fundamental shift in official sector attitudes to gold, the agreement has finally formalised the demonetisation process that had already been going on for some time. We already know of the 400 tonnes from the European 15. Our view is that this will act as a signal to other central banks to follow suit. To the extent that the agreement may have signalled a new era, one needs to look elsewhere, to the producers and hedging.

Real GDP Growth and Inflation (%)

	1998	1999	2000
World GDP	2.5	3.3	4.2
Asian GDP	3.8	6.0	6.2
Inflation*	1.5	1.4	1.9

Source: IMF, World Economic Outlook, April 2000, *Advanced economies

Producer attitudes to hedging were not only profoundly affected by the well publicised problems faced by Ashanti and Cambior, but by the stresses and strains in their own books. For the first time since it took off in the 1980s, producers are re-examining their commitment to hedging. But the pressure is not simply from within. Shareholder pressure for the time being is for producers not to hedge. Those who have ignored this pressure have seen their share prices punished.

How long is this likely to last, though? If, as we expect, prices languish below $300 for the foreseeable future, 5% or greater contangos start to look very attractive to producers (significantly, high contangos are also attractive to short sellers, not just producers). But the future trajectory of leasing rates is far from certain, and with not all producers yet having cleaned up their hedge books, some are still vulnerable to further leasing rate (and price) spikes, something that could be bullish in the short term.

On the demand side, the prospects are better than they have been for some time. Continued East Asian recovery, Middle East growth on the back of higher oil prices and forecast growth of 4.2% in the world economy in 2000 (see the table above) should encourage robust physical demand, but most probably only at sub-$300 prices. Investment demand, though, remains a problem. The price will continue to be constrained on the upside unless there is a significant shift in investor attitudes to gold, and inflation appears unlikely to lend a helping hand.

APPENDIX VI

OPERATING COST DATA

A. BYG PROJECTED COSTS AND FINANCIAL DATA

B. BYG OPERATING COST ESTIMATES FROM 1994 FEASIBILITY STUDY

C. COMPARATIVE OPERATING COST DATA FOR UNDERGROUND GOLD MINES

B.Y.G.
NATURAL RESOURCES INC.

BY FAX 905-523-5126

To: Doug Girvan

From: Wendy Slack

Re: Financial Information

Date: August 15, 1997

Per our conversation this morning, please find attached:

1/ BYG financial statements – June 30, 1997

2/ Trumpeter financial statements – June 30, 1997

3/ Trumpeter annual statement – September 30, 1997

4/ Summary of Operations – for quarter ending June 30, 1997

* 5/ Draft cash flow statements July - December 1997

6/ BYG – September 30, 1997 – no entity statement prepared by auditors – consolidation worksheet being used in this office

c.c. Brent Belzile 705-674-3033

PRICE OF SILVER U.S.	$4.65
PRICE OF GOLD U.S.	$330.00
EXCHANGE RATE	1.340

	July	August	September	October	November	December	Totals
Cash Inflow							
Mt. Nansen Mine							
Tonnes Ore Mined	29800	29800	29800	29800	29800	29800	178800
Tonnes Waste Mined	84264	84264	84264	84264	84264	84264	505584
Tonnes Milled	13950	18600	25500	27000	27900	27900	140850
Projected Grade Au (gpt)	6.0	6.0	6.0	6.5	7.5	7.5	7.0
Projected Grade Ag (gpt)	42.0	42.0	42.0	42.0	52.0	52.0	47.0
Projected Recovery Au	88%	88%	88%	88%	90%	90%	89%
Projected Recovery Ag	50%	50%	50%	50%	75%	75%	60%
Recovered Ounces Au	2368	3157	4329	4965	6055	6055	26929
Recovered Ounces Ag	9419	12558	17217	18229	34983	34983	127389
Recovered Value Au	$1,047,171.67	$1,396,228.90	$1,914,184.78	$2,195,682.54	$2,677,427.57	$2,677,427.57	$11,908,123.04
Recovered Value Ag	$ 58,687.05	$ 78,249.40	$ 107,277.40	$ 113,587.84	$ 217,980.47	$ 217,980.47	$ 793,762.62
Draw on Inventory							
Starting Inventory Au (gpt)	104834	69889	34944				34944
Starting Inventory Ag (gpt)	375923	250615	125307				125307
Draw Au (gpt)	34945	34945	34945				104835
Draw Ag (gpt)	125308	125308	125308				375924
Recovered Value Au	$ 496,815.12	$ 496,815.12	$ 496,815.12				$ 1,490,445.35
Recovered Value Ag	$ 25,103.11	$ 25,103.11	$ 25,103.11				$ 75,309.34
Total Draw on Inventory	$ 521,918.23	$ 521,918.23	$ 521,918.23				$ 1,565,754.68
Omni Project							
Development	$ 911,734.26	$ 225,000.00					$ 1,136,734.26
Geological			$ 30,000.00	$ 30,000.00	$ 30,000.00	$ 30,000.00	$ 120,000.00
Adminstration	$ 91,173.43	$ 22,500.00	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 125,673.43
Total Omni Project	$1,002,907.69	$ 247,500.00	$ 33,000.00	$ 33,000.00	$ 33,000.00	$ 33,000.00	$ 1,382,407.69
Exploration							
EDI				$ 17,680.00	$ 17,680.00	$ 17,680.00	$ 53,040.00
Ku-Dushi					$ 401,772.65	$ 17,680.00	$ 419,452.65
YGC	$ 250,000.00	$ 250,000.00	$ 250,000.00	$ 250,000.00			$ 1,000,000.00
Total Exploration	$ 250,000.00	$ 250,000.00	$ 250,000.00	$ 267,680.00	$ 419,452.65	$ 35,360.00	$ 1,472,492.65
Little Salmon Analytical							
BYG Nansen - Exploration	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 90,000.00
BYG Nansen - Mine	$ 21,000.00	$ 21,000.00	$ 21,000.00	$ 21,000.00	$ 21,000.00	$ 21,000.00	$ 126,000.00
YGC	$ 20,000.00	$ 20,000.00	$ 20,000.00				$ 60,000.00
Omni	$ 20,000.00	$ 20,000.00	$ 20,000.00				$ 60,000.00
EDI		$ 10,000.00	$ 10,000.00				$ 20,000.00
Ku-Dushi		$ 10,000.00	$ 10,000.00				$ 20,000.00
LSAL Total	$ 76,000.00	$ 96,000.00	$ 96,000.00	$ 36,000.00	$ 36,000.00	$ 36,000.00	$ 376,000.00
Cash Receipts							
Little Salmon Analytical	$ 71,000.00	$ 91,000.00	$ 91,000.00	$ 31,000.00	$ 31,000.00	$ 31,000.00	$ 346,000.00
EDI				$ 604,172.63			$ 604,172.63
Ku-Dushi					$ 10,012.25		$ 10,012.25
YGC	$ 87,181.21						$ 87,181.21
Total Cash Receipts	$ 158,181.21	$ 91,000.00	$ 91,000.00	$ 635,172.63	$ 41,012.25	$ 31,000.00	$ 1,047,366.09
Total Cash Inflow	$3,114,865.85	$2,680,896.52	$3,013,380.41	$3,281,123.01	$3,424,872.94	$3,030,768.04	$18,545,906.77

PRICE OF SILVER U.S.	$4.65
PRICE OF GOLD U.S.	$330.00
EXCHANGE RATE	1.340

	July	August	September	October	November	December	Totals
Cash Outflow							
Gold Loan	$ 400,000.00	$ 400,000.00					$ 800,000.00
Current Payables	$1,500,000.00						$ 1,500,000.00
Mt. Nansen Mine							
Milling	$ 346,754.00	$ 353,660.00	$ 379,514.00	$ 379,514.00	$ 379,514.00	$ 379,514.00	$ 2,218,470.00
Mining	$ 378,775.00	$ 390,163.00	$ 407,061.00	$ 412,938.00	$ 412,938.00	$ 412,938.00	$ 2,414,813.00
Site	$ 24,100.00	$ 24,100.00	$ 24,100.00	$ 24,100.00	$ 24,100.00	$ 24,100.00	$ 144,600.00
Environmental	$ 120,000.00	$ 120,000.00	$ 120,000.00	$ 70,000.00	$ 70,000.00	$ 45,000.00	$ 545,000.00
Adminstration	$ 133,924.00	$ 88,000.00	$ 88,000.00	$ 88,000.00	$ 88,000.00	$ 88,000.00	$ 573,924.00
Total Nansen Mine	$1,003,553.00	$ 975,923.00	$1,018,675.00	$ 974,552.00	$ 974,552.00	$ 949,552.00	$ 5,896,807.00
Exploration							
Flex	$ 95,000.00	$ 122,500.00	$ 122,500.00	$ 122,500.00			$ 462,500.00
Huestis	$ 45,000.00						$ 45,000.00
Aurchem		$ 70,000.00	$ 70,000.00	$ 125,000.00	$ 125,000.00		$ 390,000.00
Klaza		$ 25,000.00					$ 25,000.00
Brown McDade			$ 70,000.00				$ 70,000.00
Brown McDade Extension				$ 70,000.00	$ 70,000.00		$ 140,000.00
Other						$ 70,000.00	$ 70,000.00
Total Exploration	$ 140,000.00	$ 217,500.00	$ 262,500.00	$ 317,500.00	$ 195,000.00	$ 70,000.00	$ 1,202,500.00
Mill Expansion							
Sag Mill & Water Treatment	$ 440,000.00	$ 460,000.00					$ 900,000.00
Stripping and Electrowinning		$ 30,000.00					$ 30,000.00
Lime Loop		$ 30,000.00					$ 30,000.00
Flotation			$ 30,000.00				$ 30,000.00
Gen Set				$ 120,000.00			$ 120,000.00
Total Mill Expansion	$ 440,000.00	$ 520,000.00	$ 30,000.00	$ 120,000.00	$ -	$ -	$ 1,110,000.00
Camp Expansion							
New Camp	$ 100,000.00						$ 100,000.00
Camp Water Line			$ 50,000.00				$ 50,000.00
Total Camp Expansion	$ 100,000.00	$ -	$ 50,000.00	$ -	$ -	$ -	$ 150,000.00
Little Salmon Analytical	$ 41,000.00	$ 66,000.00	$ 66,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 248,000.00
Exploration Companies							
EDI	$ 58,860.00	$ 104,860.00	$ 133,860.00	$ 117,680.00	$ 14,930.00	$ 14,930.00	$ 445,120.00
Ku-Dushi	$ 17,680.00	$ 104,860.00	$ 133,860.00	$ 117,680.00	$ 14,930.00	$ 14,930.00	$ 403,940.00
YGC	$ 250,000.00	$ 250,000.00	$ 250,000.00	$ 250,000.00			$ 1,000,000.00
Total Exploration Companies	$ 326,540.00	$ 459,720.00	$ 517,720.00	$ 485,360.00	$ 29,860.00	$ 29,860.00	$ 1,849,060.00
Permitting							
Flex		$ 25,000.00					$ 25,000.00
YGC			$ 50,000.00				$ 50,000.00
Tailings		$ 25,000.00	$ 25,000.00	$ 25,000.00			$ 75,000.00
Whitehorse Copper		$ 50,000.00	$ 50,000.00	$ 50,000.00			$ 150,000.00
Total Permitting	$ -	$ 100,000.00	$ 125,000.00	$ 75,000.00	$ -	$ -	$ 300,000.00
Admin - Other							
Orangeville	$ 30,000.00	$ 30,000.00	$ 30,000.00	$ 30,000.00	$ 30,000.00	$ 30,000.00	$ 180,000.00
Vancouver	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 90,000.00
London	$ 12,000.00	$ 12,000.00	$ 12,000.00	$ 12,000.00	$ 12,000.00	$ 12,000.00	$ 72,000.00
Promotion	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 15,000.00	$ 90,000.00
Admin - Other Total	$ 72,000.00	$ 72,000.00	$ 72,000.00	$ 72,000.00	$ 72,000.00	$ 72,000.00	$ 432,000.00
Total Outflow	$4,023,093.00	$2,811,143.00	$2,141,895.00	$2,089,412.00	$1,296,412.00	$1,148,412.00	$13,488,367.00
Cash Flow	$ (908,227.15)	###########	$ (166,988.22)	$1,044,722.79	$3,173,183.73	$5,057,539.77	$ 5,057,539.77

PRICE OF SILVER U.S.	$4.65
PRICE OF GOLD U.S.	$330.00
EXCHANGE RATE	1.340

Mining Cost/Tonne	$ 27.15	$ 20.98	$ 15.96	$ 15.29	$ 14.80	$ 14.80	$ 17.14	
Milling Cost/Tonne	$ 24.86	$ 19.01	$ 14.88	$ 14.06	$ 13.60	$ 13.60	$ 15.75	
Environmental Cost/Tonne	$ 8.60	$ 6.45	$ 4.71	$ 2.59	$ 2.51	$ 1.61	$ 3.87	
Site Cost/Tonne	$ 1.73	$ 1.30	$ 0.95	$ 0.89	$ 0.86	$ 0.86	$ 1.03	
Administration	$ 9.60	$ 4.73	$ 3.45	$ 3.26	$ 3.15	$ 3.15	$ 4.07	
Cost/Tonne	$ 62.34	$ 47.74	$ 36.50	$ 32.84	$ 31.78	$ 30.88	$ 37.79	
Cost/Ounce (U.S.)	$ 297.76	$ 212.17	$ 157.12	$ 129.40	$ 93.25	$ 90.17	$ 141.42	
Operating Profit	$ 102,305.72	$ 498,555.30	$1,002,787.18	$1,334,718.38	$1,920,856.04	$1,945,856.04	$ 6,805,078.66	
Forth Quarter			$1,603,648.20					
Fifth Quarter						$5,201,430.46		

MT. NANSEN MINE – SUMMARY OF OPERATING COSTS

	YEAR 1	*YEAR 2*	*YEAR 3*	*YEAR 4*	*YEAR 5*	*TOTALS*
UNIT OPERATING COSTS/TONNE						
–MINING	$33.83	$12.10	$23.66	$34.93	$29.34	$26.01
–TRUCK AND SMELT	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
–MILL AND PLANT	$36.16	$34.16	$30.70	$31.36	$29.16	$31.89
–ADMINISTRATION	$3.94	$4.06	$3.12	$3.43	$3.36	$3.52
–ROYALTIES	$3.51	$2.79	$2.40	$4.44	$2.00	$3.08
TOTAL COST/TONNE	**$77.44**	**$53.12**	**$59.88**	**$74.16**	**$63.86**	**$64.50**

COSTS BY METHOD	OPEN PIT AND DUMPS	BROWN–MCDADE UNDERGROUND	WEBBER UNDERGROUND	TOTALS
TONNES MILLED	327,888	235,050	85,432	648,370
– MINE	$3,642	$4,042	$3,928	$11,612
– GENERAL MINE EXPENSE	$879	$2,533	$1,841	$5,253
– MILL	$8,134	$5,831	$2,119	$16,084
– PLANT	$1,938	$1,641	$1,017	$4,596
– ADMINISTRATION	$942	$809	$532	$2,283
– ROYALTIES	$1,008	$723	$263	$1,994
TOTAL OPERATING COSTS	**$16,543**	**$15,579**	**$9,700**	**$41,822**
COSTS PER TONNE BY METHOD				
– MINE	$11.11	$17.20	$45.98	$17.91
– GENERAL MINE EXPENSE	$2.68	$10.78	$21.54	$8.10
– MILL	$24.81	$24.81	$24.81	$24.81
– PLANT	$5.91	$6.98	$11.90	$7.09
– ADMINISTRATION	$2.87	$3.44	$6.23	$3.52
– ROYALTIES	$3.08	$3.08	$3.08	$3.08
TOTAL OPERATING COSTS PER TONNE	**$50.45**	**$66.28**	**$113.54**	**$64.50**

1994 BYG FEASIBILITY STUDY

MT. NANSEN

COMPARATIVE OPERATING COST DATA FOR UNDERGROUND GOLD MINES

C$ per tonne

Mine	Province	Tonnes per day	Grade g/t	Year	Mining	Milling	Other	Total
Salmita	NWT	200	24	1984	97	52	48	197
Cullaton	NWT	250	8	1985	105	48	28	181
Giant	NWT	1000	9	1996				121
Con	NWT	900	12	1999				145
Eskay Creek	BC	500	107	1999				330
Golden Patricia	ONT	300	22	1989	105	35	70	210
Campbell	ONT	1200	15	2000				120
Eagle River	ONT	450	9	1997	52	16	35	103
Glimmer	ONT	600	6	1999				75
Sleeping Giant	QUE	600	12	2000	78	18	6	102
Joe Mann	QUE	1200	10	2000	61	23	9	93

APPENDIX VII

RECLAMATION COST ESTIMATES
FROM BRODIE 1998

CONCEPTUAL RECLAMATION COSTS
FOR TAILINGS IMPOUNDMENT RECLAMATION ALTERNATIVE NO. 1 (preferred)
(RELOCATION AND COVERING WITHIN EXISTING IMPOUNDMENT)

Item	unit	cost	quantity	amount	total	
relocation of tailings *	m3	2.65	25000	$66,250		
tailings cover	m2	20	50000	1000000		
Dome Creek diversion				100000		
adit bulkhead *				200000		
reclaim rock dumps *	ha	1100	6.35	6985		
reclaim pit bottom				25000		
expln trenches *		4100	10.1	41410		
buildings *				121130		
other tasks *				122808		
seepage collection *				34400		
WTP upgrade *				299620		
sub total				2017603		
contingency *		28%		564929		
Total Cost					**$2,582,532**	
intensive treatment *	year	167216	3	fund		
follow up treatment *	year	146870	4	fund		
replace/repair cover	each 25 yr	500000	50%	fund		
on-going monitoring *	year	23500	100	fund		
Fund Required at year 0	interest	2.75%	lump sum	**treat 7 years**	**$2,260,489**	**** BEST**
				treat 10 years	$2,605,732	
				treat 25 years	$3,966,959	
				treat 100 years	$6,323,154	
TOTAL RECLAMATION COST ESTIMATE				**treat 7 years**	**$4,843,021**	**** BEST**
				treat 10 years	$5,188,264	
				treat 25 years	$6,549,490	
				treat 100 years	$8,905,685	

Notes: * unit cost, quantity and amount taken from Brodie 1998
** BEST based on 7 years for contaminated groundwater to pass
Low permeability cover funded for 50% replacement each 25 years

PRIMARY ASSUMPTIONS: (1) That the low permeability dry cover on the tailings will reduce the transport of contaminants from the tailings to the degree where surface water is not significantly impacted.
(2) That long term physical stability standards for the tailings dam will be met when no water is required to be impounded behind the dam.

KEY POINTS: $66,250 for relocation of tailings within the impoundment
$1 million for low permeability cover over tailings
$25,000 for reclamation of pit water/pit bottom
$100,000 for upgrade to Dome Creek diversion
cover replacement funded at 50% replacement each 25 years
intensive treatment of tailings seepage for 3 years
followup treatment of tailings seepage for 4 years
monitoring of physical stability and water quality for 100 years

CONCEPTUAL RECLAMATION COSTS
FOR TAILINGS IMPOUNDMENT RECLAMATION ALTERNATIVE NO. 2
(FLOODING OF TAILINGS IN PIT AND IMPOUNDMENT)

Item	unit	cost	quantity	amount	total	
relocation of tailings *	m3	2.65	25000	$66,250		
removal of tailings *	m3	3.65	25000	91250		
dam buttress *	m3	5.46	15000	103900		
extra dam stability				100000		
tailings spillway *	m3	6.68 avg	14140	94472		
adit bulkhead *				200000		
reclaim rock dumps *	ha	1100	6.35	6985		
pit dam				98306		
pit spillway				50000		
extra pit seepage control				200000		
expln trenches *		4100	10.1	41410		
buildings *				121130		
other tasks *				122808		
seepage collection *				34400		
WTP upgrade *				299620		
WTP connect to pit				25000		
sub total				1655531		
contingency *		28%		463549		
Total Cost					**$2,119,080**	
init intensive treatment (tailings) *	year	167216	7	fund		
follow up treatment (tailings) *	year	146870	3	fund		
treatment of pit water	year	125412	7	fund		
on-going monitoring *	year	23500	100	fund		
Fund Required at year 0	interest	2.75%	lump sum	treat 7 years	$2,638,306	
				treat 10 years	**$2,983,549**	** BEST
				treat 25 years	$4,344,776	
				treat 100 years	$6,700,971	
TOTAL RECLAMATION COST ESTIMATE				treat 7 years	$4,757,386	
				treat 10 years	**$5,102,629**	** BEST
				treat 25 years	$6,463,855	
				treat 100 years	$8,820,050	

Notes: * unit cost, quantity and amount taken from Brodie 1998
** BEST based on 7 years for tailings porewater flush plus 3 years for contaminated groundwater to pass.

PRIMARY ASSUMPTIONS:
(1) That the Brown-McDade pit can be flooded to an elevation adequate to submerge the tailings.
(2) That the tailings dam can be upgraded to meet long term physical stability standards while required to impound water.
(3) That seepage from the Brown-McDade pit and the tailings impoundment will not be contaminated to the point of impacting on surface water.

KEY POINTS:
$66,250 for relocation of tailings within the impoundment
$92,250 for removal of tailings to the open pit
$203,900 for physical stability upgrades to the tailings dam
$98,306 for construction of the small in-pit dam
$50,000 for the pit exit spillway
$200,000 for extra pit seepage control measures
$25,000 to connect the pit water to the treatment plant
7 years intensive treatment of tailings seepage for porewater flushing
3 years follow up treatment of tailings seepage for groundwater to pass
7 years treatment of open pit water

CONCEPTUAL RECLAMATION COSTS
FOR TAILINGS IMPOUNDMENT RECLAMATION ALTERNATIVE NO. 3
(FLOODING OF ALL TAILINGS IN PIT)

Item	unit	cost	quantity	amount	total	
removal of tailings	m3	3.65	300000	1095000		
removal of tailings dam				25000		
reclamation of tailings area	ha	1100	7	7700		
restoration of Dome Creek				25000		
pit spillway				50000		
adit bulkhead *				200000		
reclaim rock dumps *	ha	1100	6.35	6985		
pit dam				500000		
extra pit seepage control				300000		
expln trenches *		4100	10.1	41410		
buildings *				121130		
other tasks *				122808		
seepage collection *				34400		
WTP upgrade *				299620		
WTP connect to pit				25000		
sub total				2854053		
contingency *		28%		799135		
Total Cost					**$3,653,188**	
init intensive treatment (tailings) *	year	167216	3	fund		
follow up treatment (tailings) *	year	146870	0	fund		
treatment of pit water	year	167216	7	fund		
on-going monitoring *	year	23500	100	fund		
Fund Required at year 0	interest	2.75%	lump sum	**treat 7 years**	**$2,324,811**	** BEST
				treat 10 years	$2,670,053	
				treat 25 years	$4,031,280	
				treat 100 years	$6,387,475	
TOTAL RECLAMATION COST ESTIMATE				**treat 7 years**	**$5,977,999**	** BEST
				treat 10 years	$6,323,241	
				treat 25 years	$7,684,468	
				treat 100 years	$10,040,663	

Notes: * unit cost, quantity and amount taken from Brodie 1998
** BEST based on 7 years treatment of pit water including 3 years for contaminated tailings groundwater to pass

PRIMARY ASSUMPTIONS:
(1) That the Brown-McDade pit can be flooded to an elevation adequate to submerge the tailings.
(2) That adequate storage volume for all tailings can be created in the Brown-McDade open pit with a dam.
(3) That seepage from the Brown-McDade pit following flooding of tailings will not be contaminated to the point of impacting on surface water.

KEY POINTS:
$1.1 million for removal of tailings to the open pit
$57,700 for restoration of the tailings area and Dome Creek
$500,000 for construction of the large pit dam
$50,000 for the pit exit spillway
$300,000 for extra pit seepage control measures
$25,000 to connect the pit water to the treatment plant
3 years intensive treatment of tailings seepage for groundwater to pass
7 years treatment of open pit water