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| **Subject:** | re: Document for Filing to Giant Mine Public Registry |
| **Date:** | August-19-12 12:48:06 AM |
| **Attachments:** | Socio-Economic Impacts of Gold Mining in Yellowknife 2002.pdf |

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Shannon

Please file the attached document to the Giant Mine public registry. This study was conducted in 2002 by a federal and territorial government employee and discusses the socio-economic contributions of gold mining in the Yellowknife area, including production from Giant Mine. It is interesting to note the following:

- 7 million ounces of gold produced at Giant Mine between 1948 and 1999
- Estimated value of production at Giant Mine was $2.7 billion (all figures 2002 $)
- Profits for the owners of the Giant Mine were estimated at $867 million
- Total government revenues from Giant Mine were estimated at $454 million (personal income taxes $360 million, corporate taxes $78 million, royalties $16 million)

The document is also available on-line at:

http://www.miningnorth.com/docs/Socio-Economic%20Impacts%20of%20Gold%20Mining%20in%20Yellowknife%202002.pdf

This document supplements the historical information and data found in section 4 (Site History) of the Developers Assessment Report.

Kevin O'Reilly
Alternatives North

# SOCIO-ECONOMIC IMPACTS OF GOLD MINING IN THE YELLOWKNIFE MINING DISTRICT

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Note: All financial values are expressed in constant 2002 Canadian dollars, unless otherwise stated. This includes gold prices.

## Introduction

Over the last twenty years the concept of sustainable development has evolved from its origins in the Brundtland Commission to its current pervasive presence in virtually all aspects of public life. The minerals industry has not escaped this trend, with some going as far as to state the opinion that non-renewable resource development and mining in particular are incompatible with sustainable development, since any mine once opened is already destined to close. Gold mining in the Yellowknife area started long before concepts of sustainability entered the academic literature and by the time the term enjoyed the widespread public acceptance the Yellowknife gold mining industry was in its sunset years. Despite this, and largely because of the high profile environmental "legacy" associated with the Giant mine, some feel that gold mining activity in Yellowknife has been "negative" in terms of sustainability. They would argue that these external costs, once factored in, would greatly exceed any benefits created by the 70 or so years of gold production.

This paper will not attempt to answer all the complex issues surrounding gold mining in Yellowknife; it represents a start in outlining the complex social and economic aspects of the gold mining industry in the area. Eggert (2001) has developed a simple but powerful framework for assessing the sustainable development aspects of mining, particularly effects on local communities. In a paper written as a contribution to the Mining Minerals and Sustainable development Project he proposes that sustainable development of minerals essentially consists of meeting four challenges:

1) The Creation Challenge, i.e. the generation of wealth in a manner consistent with dominant social preferences regarding the environment and culture values.

2) The Distribution of this created wealth among various constituencies

3) Managing the broader economic and political effects of the creation and distribution of this wealth

4) Ensuring the economic benefits can be maintained, even as the actual mines are depleted or the investment challenge.

Eggert also discusses the roles that Government, Private Industry and Civil Society play in each of the sustainability challenges. This framework provides an excellent construct in which to begin to examine gold mining in Yellowknife through the lens of sustainable development.

**The Creation Challenge**

The following series of charts and notes outline quantatively how the three largest Yellowknife Gold Mines (Con, Giant and Discovery) have created wealth from the mineral resources exploited since mining commenced in the mid 1930's.

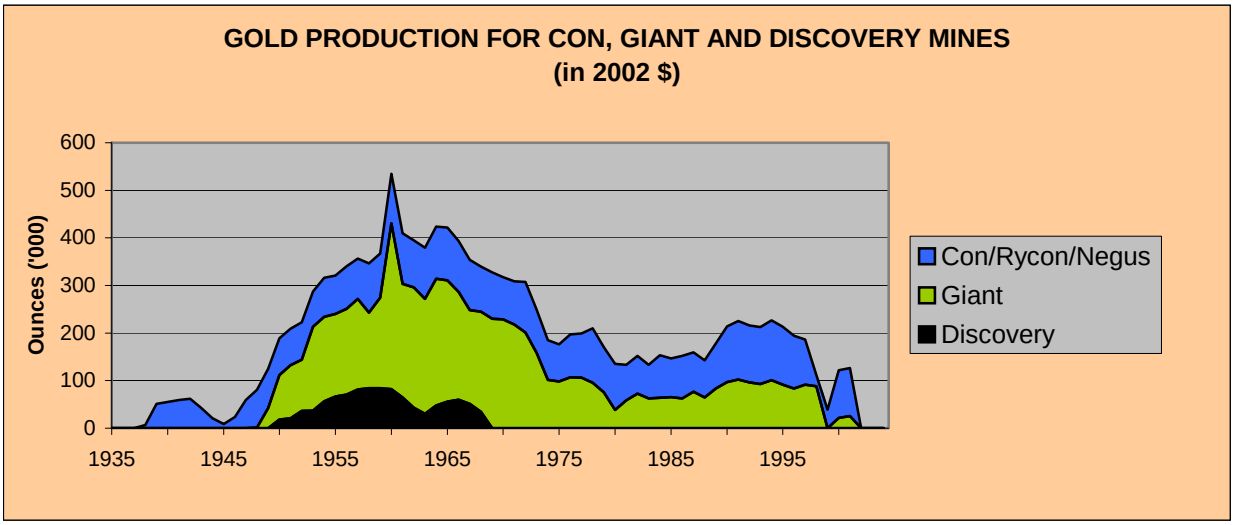


Figure 1. Graph showing the distribution of gold production for Con, Giant and Discovery mines, from 1938 to the present time.

Some 13.5 million ounces of gold have been produced from the Yellowknife Mining District since mining operations commenced at Con in 1938 (Fig. 1). The bulk of production has been from Giant mine, which has produced over 7 million ounces of gold since operations began in 1948. To date, Con mine has produced 5.5 million ounces of gold. Discovery mine, which operated from 1950 to 1968 and was the smallest of the three, produced just over 1 million ounces of gold during its life.

The bulk of gold production in the district occurred between 1952 and 1973. During this period, over 7.7 million ounces of gold were produced, accounting for 60% of the total. Gold production peaked in 1960 at 535,000 ounces, principally due to an 18-month reporting period for Giant as the mine switched financial year-ends.

Gold production decreased dramatically from mid-1990 owing to a combination of factors, including strike activity at both Con and Giant mines, production cutbacks in response to the rapidly decreasing gold price, and ore depletion. Annual production levels are currently in the 120 to 130,000 ounce range. However, this is time limited, as Con and Giant are slated for closure within the next few years.

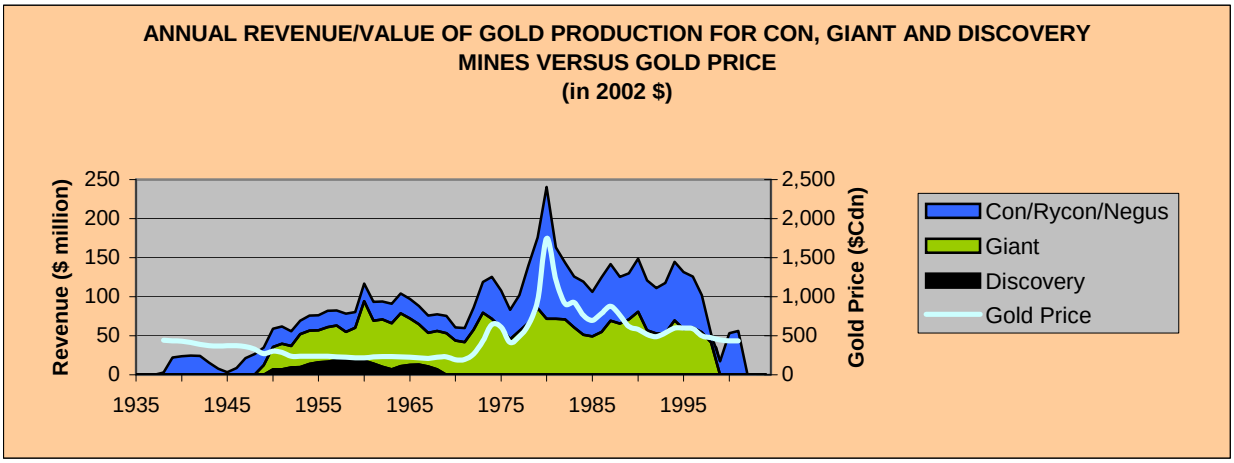


Figure 2. Graph showing the distribution of annual revenues for Con, Giant and Discovery mines, from 1938 to the present time, juxtaposed against the gold price. Note: figures for Giant represent reported revenues, including hedge gains and interest, up to 1998. Figures for Discovery represent reported revenues. Figures for Con refer to the value of gold produced, which was calculated by multiplying annual ounces by the average annual spot gold price in Canadian dollars. Giant and Con are combined from 2000 onwards.

Giant, Con and Discovery mines have generated revenues in excess of $5,510 million since mining first commenced in 1938 (Fig. 2). Giant and Con have contributed $2,743 and $2,528 million in revenues respectively, or some 96% of the total. The Discovery mine generated $240 million in revenues.

While the bulk of gold production occurred between 1952 and 1973, gold revenues were most abundant between 1974 and 1997 in response to significantly higher gold prices over this period. For example, revenues during the 1952 to 1973 period amounted to $1,839 million, whereas revenues over the 1974 to 1997 period were $3,157 million. Gold prices averaged $236 and $728 respectively over these two periods.

In recent years, revenues from gold production in the Yellowknife Mining District have decreased significantly owing to a combination of the declining gold price and production cutbacks. Since 1997, the gold price has averaged $447, while production has fallen from an average 180,000 ounces per year over the 1974 to 1997 period to an average of 100,000. Over the same period, annual revenues have decreased from an average of $132 million to just $45 million.

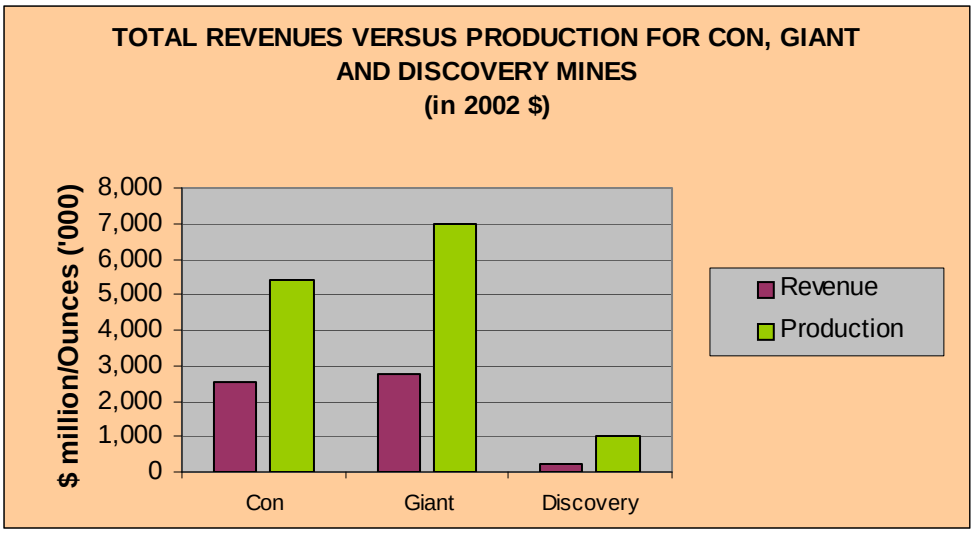

Figure 3. Graph showing revenue versus production for Con, Giant and Discovery mines.

Giant has produced significantly more gold than Con, yet total revenues are similar (Fig. 3). This is because production from Giant was most prolific during the 1952 to 1973 period when gold prices were lowest. Production from Con, on the other hand, was most abundant between 1991 and 1997, during a time of high gold prices.

Revenue/production ratios for Con, Giant and Discovery mines are 0.47, 0.39 and 0.23 respectively. The low ratio for Discovery is reflective of the low gold prices prevalent from 1950 to 1968, the period during which the mine operated.

The quantitative analysis above demonstrates that the gold mines of the Yellowknife Mining District converted the gold contained in the rocks underlying Yellowknife into a stream of highly significant cash flows.

The second part of the wealth creation challenge, namely the social and environmental acceptability of the process involved in creating the wealth, is more difficult to analyze.

Since the gold mines have operated continuously for over sixty years there has apparently never been enough opposition on environmental grounds to counter the pressure to maintain the mining operations in order to preserve the jobs and local economic benefits associated with the activity. Although never stated in the language of sustainable development, this represents an ongoing trade off with jobs and employment being favored over ongoing environmental impacts. Certain constituencies, notably the local First Nations, have long opposed the Yellowknife Gold mines, citing environmental degradation and inequitable distribution of benefits. However it would be wrong to say that the mines have operated in an environmental and social economic vacuum over the last sixty years. There was considerable pressure from Government on the Giant Mine management to quickly develop a solution to the Arsenic Trioxide dust issue in the late 1940's through to the early 1950's. Given the almost complete absence of environmental protection as an issue in this period the speed with which the option of sub-surface burial was developed and

implemented showed that, even then, all appreciated the seriousness of the issue. The environmental issues surrounding gold mining in Yellowknife have gradually increased as a factor since the 1950's resulting in tailings impoundments being constructed, and a new water intake system for the City of Yellowknife in the late 1960's. Pressure to resolve the environmental issues with the Arsenic trioxide at Giant increased significantly with the implementation of water licensing in the early 1970's and the resultant public health report in the late 1970's, the water treatment plant at Giant, increasing demands for emission controls and the arsenic sludge treatment plant at Con Mine.

Gold mining in Yellowknife has seen much more acceptance from a social perspective over the years, although this has also declined in line with the mines decreasing importance relative to Government following the decision to locate the capital in the community. The gold mines are responsible for much of the early "built capital" in the city including the hydro power developments at Snare (Giant) and Bluefish (Con), the highway connection (roads to resources program) and a significant amount of the down town Yellowknife housing stock, much of which is still in use. Significant contributions to early community facilities are also directly attributable to the mines – for instance Giants donation of the lumber for the Gerry Murphy Arena.

**Government Role the Wealth Creation**

Eggert suggests that the role of government is to facilitate the creation of mineral wealth by ensuring a stable political and legal framework, both in a general sense and more specifically in the area of mineral law and policy. In particular he suggests that the emphasis should be on "non distortionary" policy encouraging the investment in the most attractive commercial areas. This was clearly the intention of government in the immediate post was years, notably the focus on infrastructure to support the resource industries, and more importantly the Emergency Gold Mining Assistance program (EGMA), which was established to help rural, mostly northern communities, deal with the impact of steadily increasing inflation coupled with a fixed gold price. The following charts and discussion illustrate the importance of this program to the Yellowknife Mines.

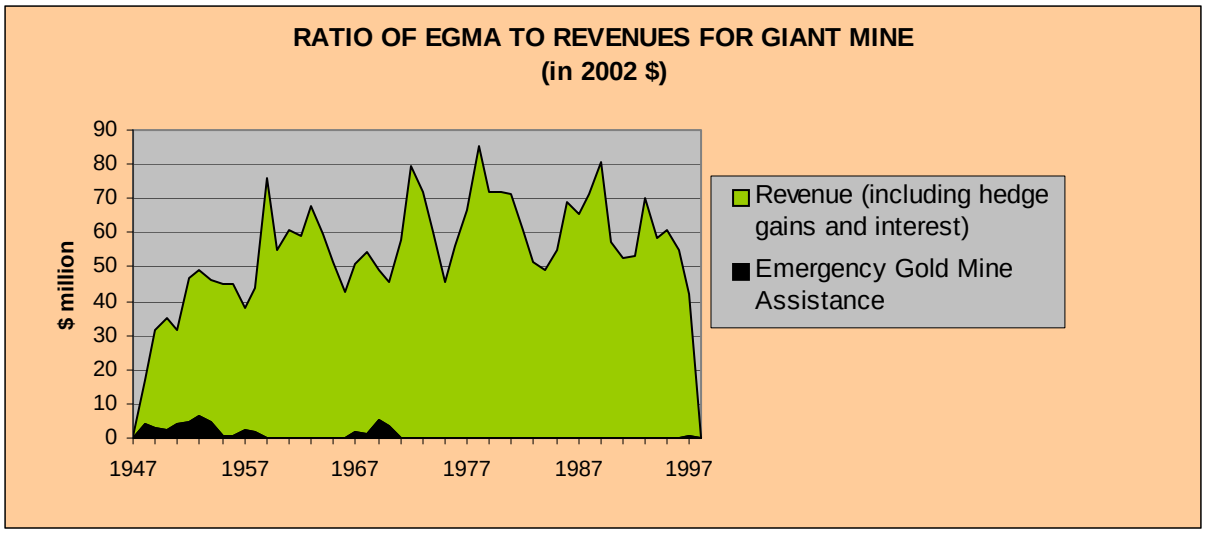


Figure 4. Graph showing the ratio and timing of Emergency Gold Mine Assistance versus revenue for Giant mine.

Giant mine received $47 million in EGMA from the federal government between 1948 and 1971 (Fig. 4). The mine generated over $1,000 million in revenues over the same period.

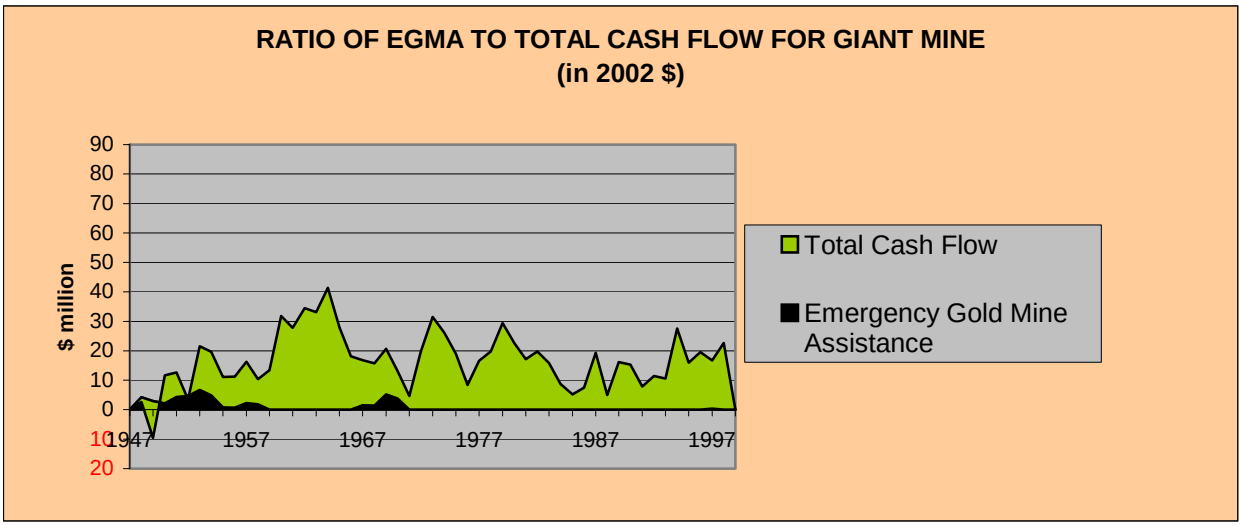


Figure 5. Graph showing the ratio and timing of Emergency Gold Mine Assistance versus total cash flow for Giant mine.

EGMA played a critical role during the first ten years of mining at Giant in helping to keep the mine profitable and establish itself (Fig. 5). For example, EGMA contributions between 1949 and 1955 totaled $30 million, while profits generated over the same period totaled only $44 million. EGMA again played an important role during the late-1960's in keeping the mine profitable, after a long period of steadily decreasing gold prices.

Profits generated by Giant mine to 1998, including EGMA contributions, totaled $867 million. Therefore, EGMA contributions amounted to only 5% of the total.

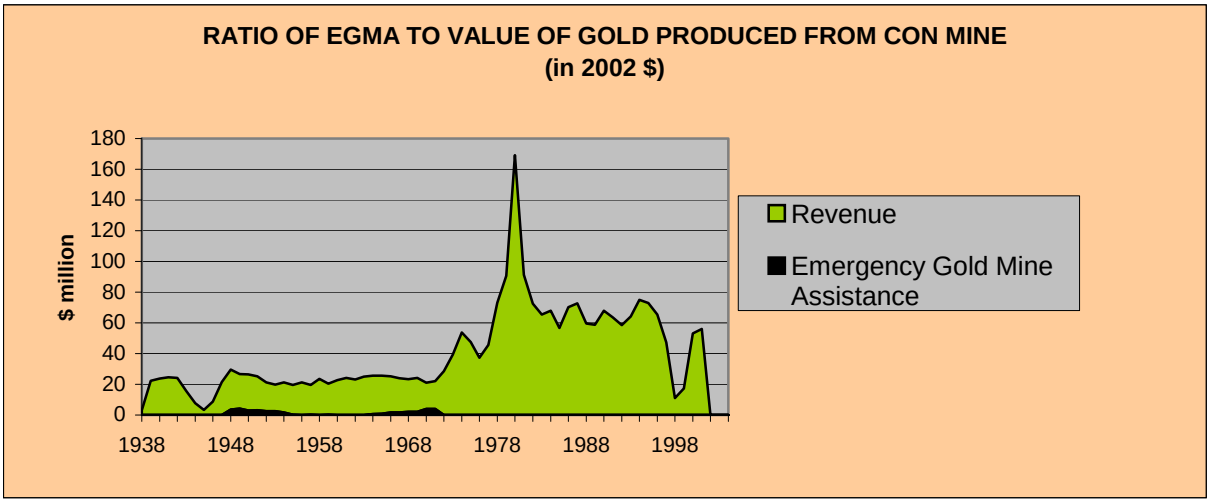


Figure 6. Graph showing the ratio and timing of Emergency Gold Mine Assistance versus value of gold produced from Con mine.

Con mine received $38 million in EGMA from the federal government between 1948 and 1971 (Fig. 6). Some $522 million worth of gold was produced from the mine over the same period.

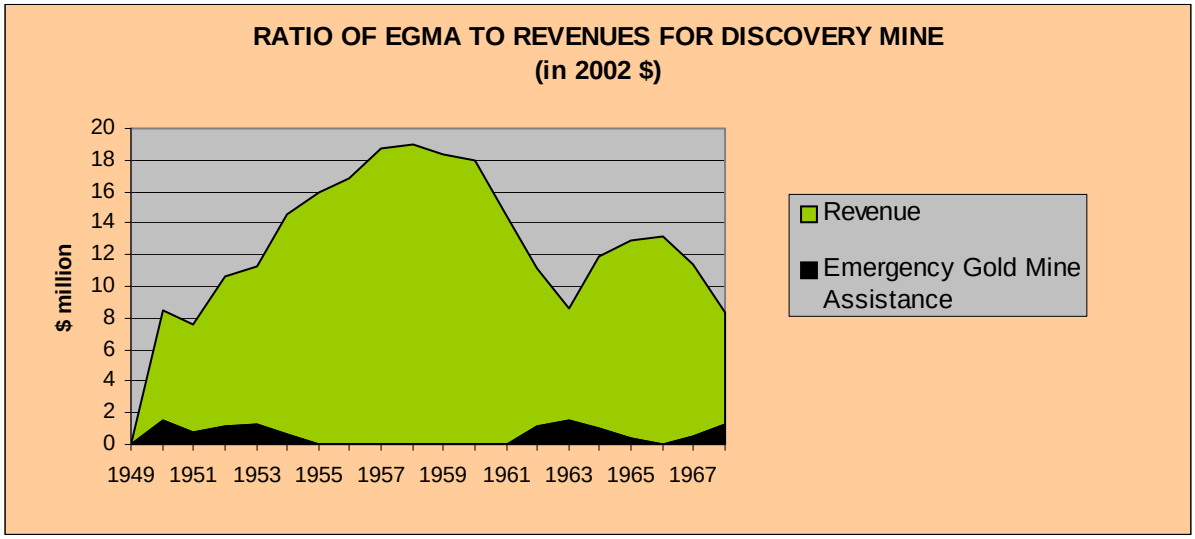


Figure 7. Graph showing the ratio and timing of Emergency Gold Mine Assistance versus revenue for Discovery mine.

Discovery mine received $11 million in EGMA from the Federal government between 1950 and 1968 (Fig. 7). The mine generated some $240 million in revenues over the same period.

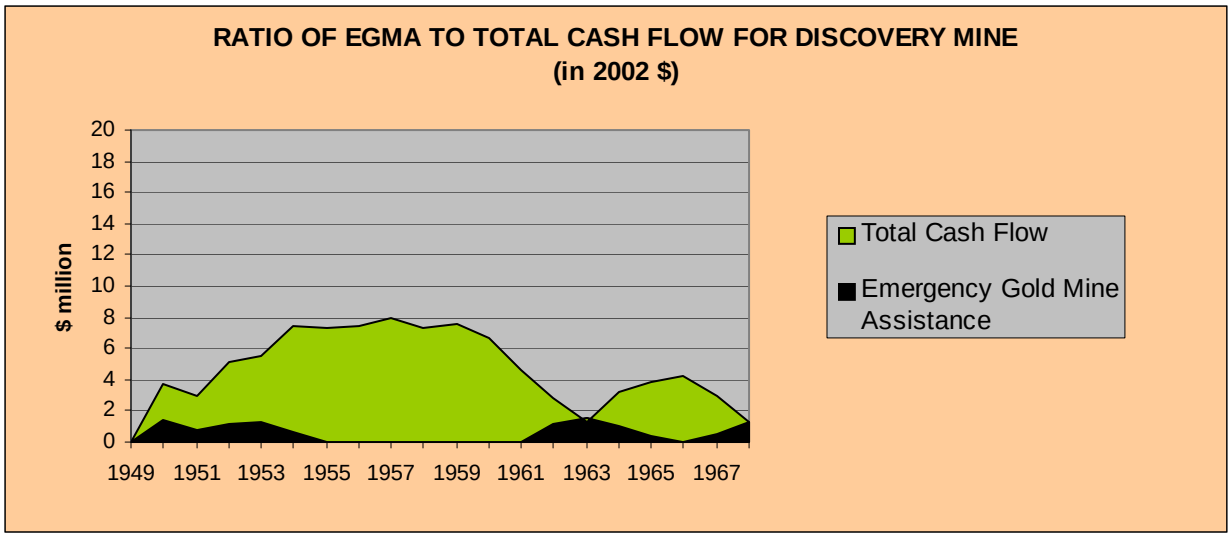


Figure 8. Graph showing the ratio and timing of Emergency Gold Mine Assistance versus total cash flow for Giant mine.

As with Giant, EGMA played a critical role during the initial years of Discovery mine in helping to keep the operation profitable and establish itself (Fig. 8). EGMA contributions during the first five years of mine life totaled $5 million. EGMA again played an important role during the early-1960's in keeping the mine afloat, most notably in 1963 during an unexpected decrease in production and increase in operating costs. However, increased EGMA contributions towards the end of the mine life were insufficient to stave off mine closure in the face of diminishing reserves and a decreasing gold price.

Profits generated by Discovery mine over the mine life, including EGMA contributions, totaled $93 million. EGMA contributions therefore amounted to around 12% of the total.

Since the end of the EGMA program the role of government in the creation of wealth from gold mining in Yellowknife has been less direct, with more emphasis on mineral policy and regulatory aspects. There has been a particular emphasis since the early 1970's on balancing the need to meet increasing environmental and social expectations with the decreasing ability of the mines to deliver on these demands as the resources became depleted. There has been none of the EGMA style "subsidies" although during the last five years of depressed gold prices there has been the provision of directed financial assistance from all three levels of government, in part to ensure a relatively orderly wind down of the operations. Assistance has included support for exploration, geological and other technical research, environmental management and also a negotiated deal to allow partial operation of the Giant mine following the bankruptcy of the last owner, namely Royal Oak Mines.

## Role of Private Industry in Wealth Creation

Private industry has played a traditional role in the Yellowknife Mining District, providing risk capital for initial startup and for various development projects in response to ongoing ore reserve definition and gold price movements. Significant projects include

the initiation of open pit mining at Giant and the sinking of the Robertson Shaft at Con in response to increasing gold prices in the seventies, and various investments in plant infrastructure (the Con autoclave, the Giant tailings retreatment plant), and environmental management initiatives in the eighties. Private industry also played its traditional role of ensuring the mines operated profitably and that ongoing exploration was conducted to replace deleted ore reserves. The three operating mines also invested considerable money in more regional exploration work to identify additional deposits – for example Giant Yellowknife Mines developed the Salmita Mine in the 1980's as a result of this work.

Because of the remoteness of the area all three Yellowknife mines invested a great amount of money in infrastructure normally associated with Governments – housing in particular. It was only in the late 1980's that the Giant mine finally sold off the majority of its wholly owned housing stock in the main part of the city. The charts and narrative below illustrate how the profitably of the Giant and Discovery Mines varied over the last sixty years. Unfortunately a similar level of information is not available for the Con mine as it was an operating division of Cominco for many years and reporting was not as detailed.

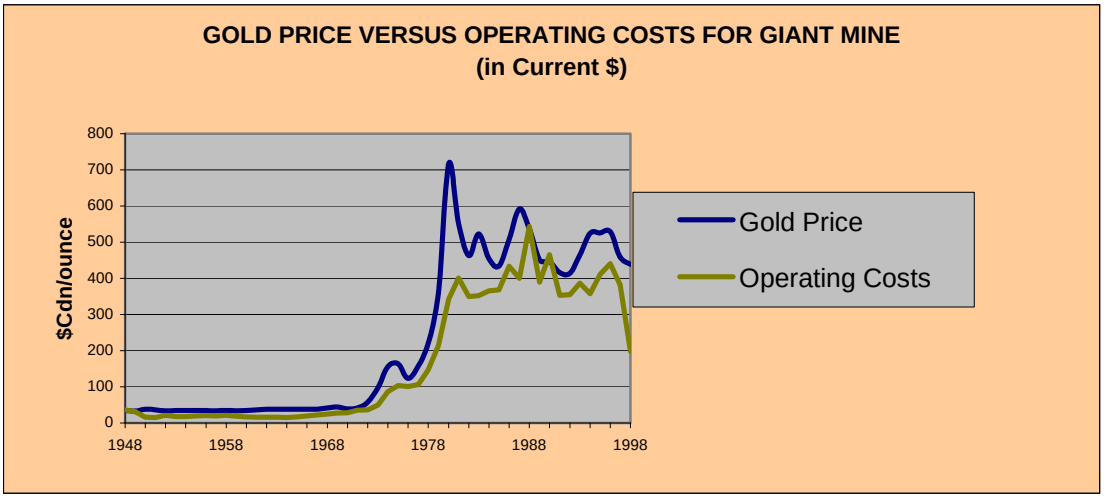


Figure 9. Graph showing gold price versus operating costs for Giant mine (in current dollars).

Operating costs for Giant mine followed a similar trend to the gold price over the first 35 years of mine life (Fig. 9). During this period, operating costs averaged $70 per ounce (in current dollars), while the gold price averaged $113 per ounce. This period also saw the highest gold production (Fig. 1), a factor that no doubt contributed to the evident control over operating costs. However, while operating costs continued to increase at Giant post-1982, the gold price trended downwards. This led to a marked drop in profitability, most notably in the mid-1980s (Fig. 5). The reality of the 1970's and 1980's was that Giant was a relatively unprofitable underground mine supported by a series of profitable open pit operations and the satellite Salmita mine. The resultant cash flow problems manifested in strike action in 1981 and ultimately the sale of Falconbridge's 19% interest in the mine in 1986, breaking a 40-year plus association of the Giant mine with the Falconbridge group and predecessor companies. The mine went through a

turbulent four years of ownership changes until the sale of the mine to Royal Oak Resources in 1990.

Royal Oak succeeded in capping operating costs at or below the $400 per ounce level during the 1990's, albeit with the painful and notorious strike of 1992 –1993, keeping the mine profitable until its sale to Miramar in 1999.

The detailed operating history of Con mine is less well known, although it followed a similar path to the Giant Mine, with three changes in ownership between 1985 and 1993, following the sale of the asset by long term owner Cominco.

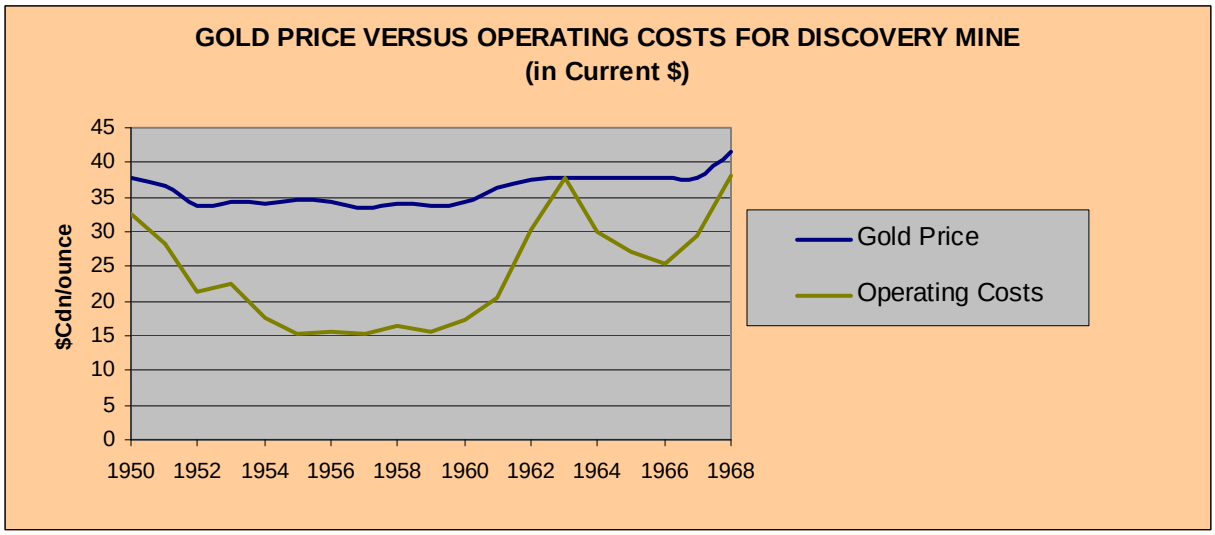


Figure 10. Graph showing gold price versus operating costs for Discovery mine (in current dollars).

Operating costs for Discovery mine were, for the most part, significantly lower than the gold price over the life of mine (Fig. 10). For example, operating costs averaged $24 per ounce (in current dollars), while the gold price averaged $36 per ounce over the mine life. Operating costs increased suddenly in 1963 and the mine posted a loss for the year of $190,000.

Increased operating costs, and a disastrous fire in the mill rather than the complete depletion of the ore reserve, led to the closure of Discovery in 1968.

**Contribution by Civil Society**

Three main groups of Civil Society have exerted an influence on the Yellowknife gold mines, namely organized labour, local First Nations and environmental non-governmental organizations. Organized labour has probably had the most influence on the creation of wealth through the various negotiated contracts at the mines and ongoing pressure in the area of health and safety at the operations. Labour availability was an ongoing concern throughout the life of the mines and much of the "social" infrastructure developed by the three mines was a response to difficulties to getting and maintaining an adequate workforce at the operations.

Environmental Non Governmental organizations, while common today, only became a factor that the Yellowknife Mines had to contend with in the early 1970's (in the form of Ecology North and later Canadian Arctic Resources Committee). These groups contributed and often led efforts to improve environmental management at the mines.

Local First Nations have long voiced opposition to the gold mines and to this day are ambivalent to openly negative to the whole issue. Intervention by the Indian Brotherhood at the first water license public hearing for the Giant mine in 1973 resulted in a six-month adjournment to undertake research, which in turn led to the public health research of 1976 – 1977.

**Distribution Challenge**

This refers to how the wealth created by the exploitation of minerals is shared among various parties, including various levels of government, private industry and investors, local communities and other organizations. This is possibly one of the more difficult areas to assess as it is where differences in what "equitable distribution" really means to various interested parties comes into play (see discussion by Eggert, page 61). The basic measure of economic contribution is GDP, in spite of limitations pointed out by the "green economists". As the charts below illustrate, the three mines have contributed over four billion dollars to the economy of the NWT over the last sixty-five years. What is interesting is the relatively constant contribution, with the exception of the exceptional but short-lived gold price spike of 1981. Following a slow buildup through to about 1954, the gold mines contributed between around 50 and about 80 million annually to the territorial economy till 1971 (17 years) and then in the order of 100 million annually through to 1998 (27 years). Apart from the short lived peak of 1981 through 1982 there is little evidence of much of the "boom bust" characteristics that critics of the industry often point too as a weakness of the industry.

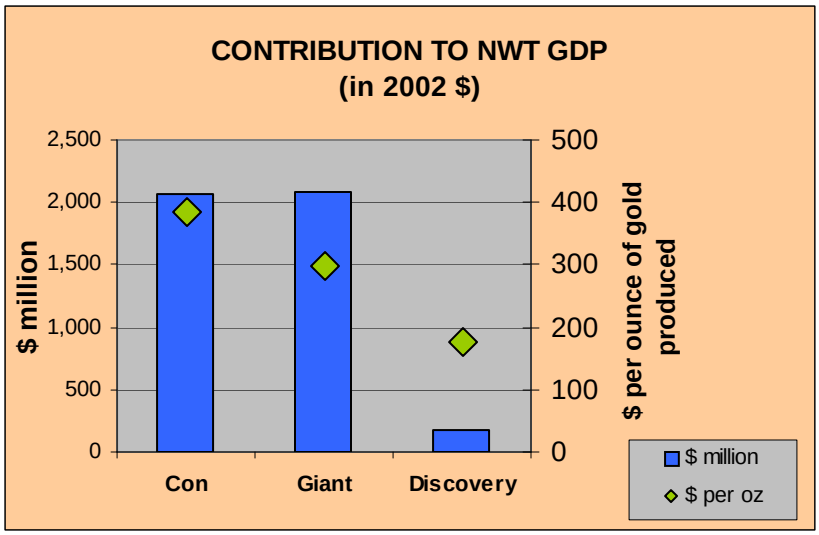


Figure 11. Graph comparing NWT GDP contributions for Con, Giant and Discovery mines. The figures were obtained using empirically determined multipliers supplied by the Investment and Economic Analysis Division of the Department of Resources, Wildlife and Economic Development, GNWT. The multiplier for Giant was considered applicable to Discovery and thus used to determine its GDP contribution.

To date, Con and Giant mines have contributed similar amounts of just over $2,000 million each to the NWT GDP (Fig. 11). Discovery is estimated to have contributed at least $182 million. However, on a per ounce basis, Con has added significantly more value to the NWT GDP than either Giant or Discovery - $348 versus $297 and $178 respectively. The reason for this, with regard to Con and Giant, relates to production efficiencies. Con mine generated more employment per value of output than Giant. Consequently, Con spent more on operating and capital costs per ounce of gold produced than Giant, thus impacting to a greater extent on the territories GDP.

The contribution figures for Discovery are regarded as minimum values, as the impact of additional revenues from hedge gains and interest earnings is unknown. However, the real per ounce value will likely be close to that of Giant.

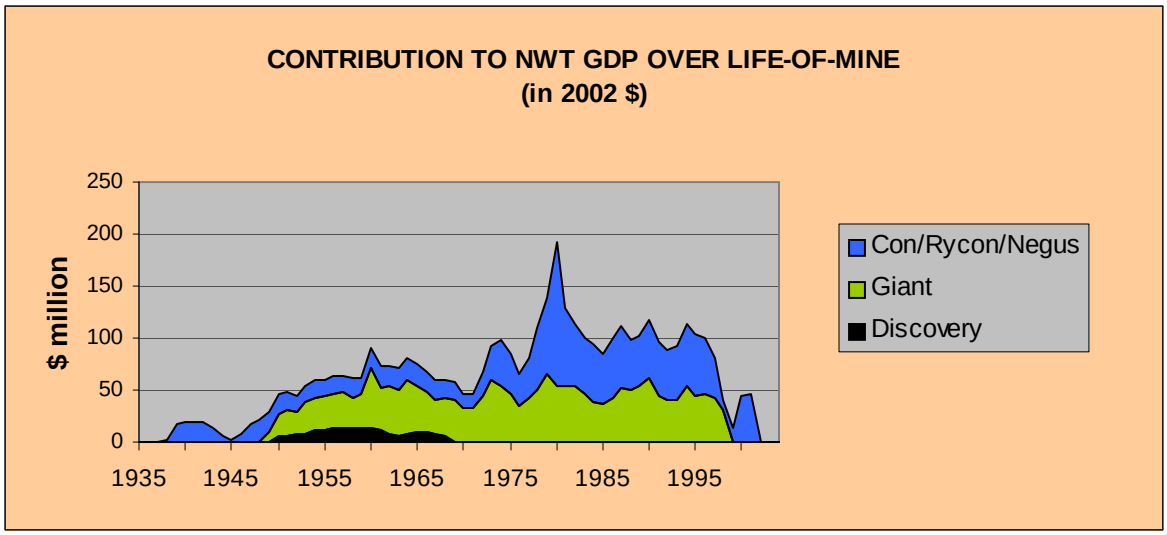


Figure 12. Graph comparing life-of-mine NWT GDP contributions for Con, Giant and Discovery mines.

Life-of-mine NWT GDP contributions for Con, Giant and Discovery follow a trend similar to that displayed by mine revenues (Fig. 12). As shown in Figure 2, gold revenues were most abundant between 1974 and 1997 in response to significantly higher gold prices. Consequently, GDP contributions were also greatest over this period. For example, of the $4,330 million in GDP contributions generated since mining operations commenced at Con in 1938, some 60% of the total, or $2,490 million, was generated over the 24 year period between 1974 and 1997.

In recent years, GDP contributions from gold production in the Yellowknife Mining District have decreased significantly in line with gold production cutbacks and the low gold price. Since 1997, Con and Giant have contributed $144 million to the territories GDP.

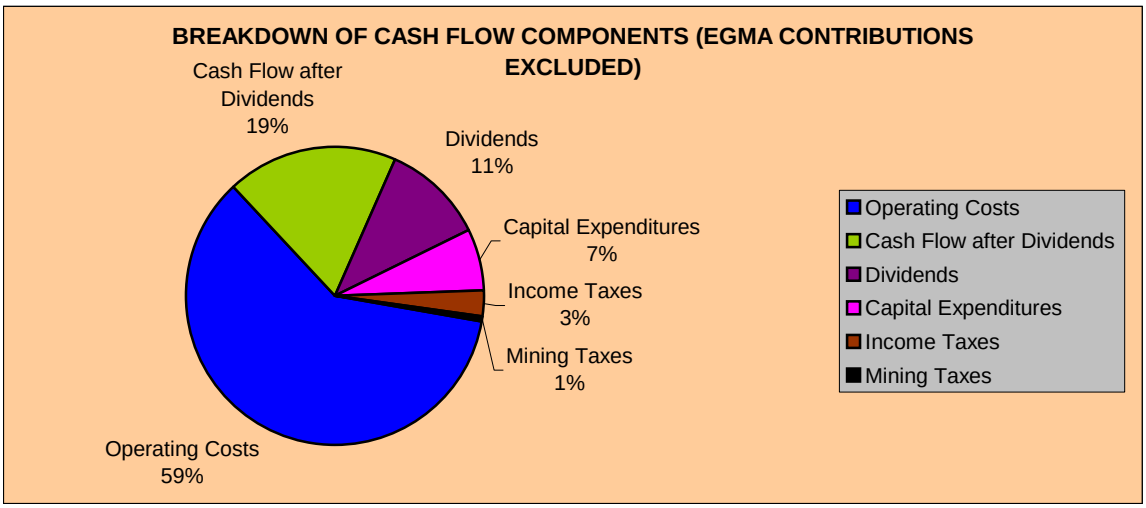


Figure 13. Chart showing breakdown of cash flow components for Giant mine.

Employment at the mines and indirect and induced employment in local area businesses represents the main distribution of wealth from the mines as the following charts and discussion illustrate. In addition both the Discovery and Giant Mines distributed a significant amount of profits back to shareholders in the form of dividends. As Figure 13 illustrates, the bulk of the $2.7 billion of wealth created by mining at Giant is accounted for by operating costs, capital expenditures, dividends and direct income and mining taxes paid.

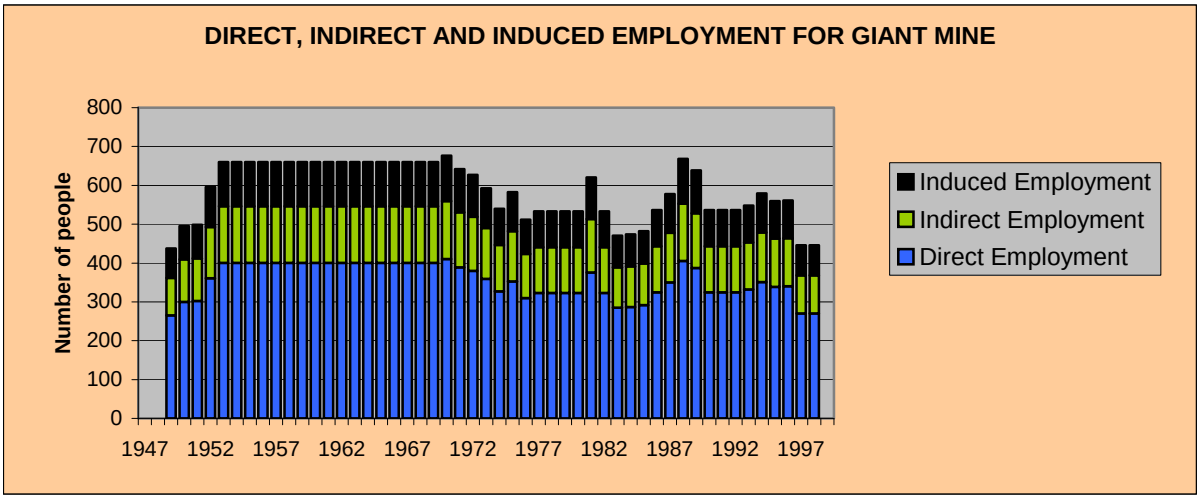


Figure 14. Graph showing life-of-mine direct, indirect and induced employment for Giant mine. Direct employment refers to personnel (including contractors) employed at the mine site itself. Indirect employment refers to personnel employed by firms offering services to the mine. Induced employment refers to personal employed generally to meet increased demand for products and services generated in response to the direct and indirect employment.

Giant mine generated an average of 355 direct employment positions annually from the commencement of mining operations in 1948 up to 1998 (Fig. 14), when the mine went into receivership. (Employment is currently around 50). Indirect and induced employment levels averaged out at 130 and 101 respectively over the same period.

Giant mine therefore generated a total of 586 positions annually over a 51-year period, equating to nearly 30,000 person-years of employment. (Life-of-mine employment figures for Con and Discovery are not available, although employment contributions from the two mines will have been similarly significant.)

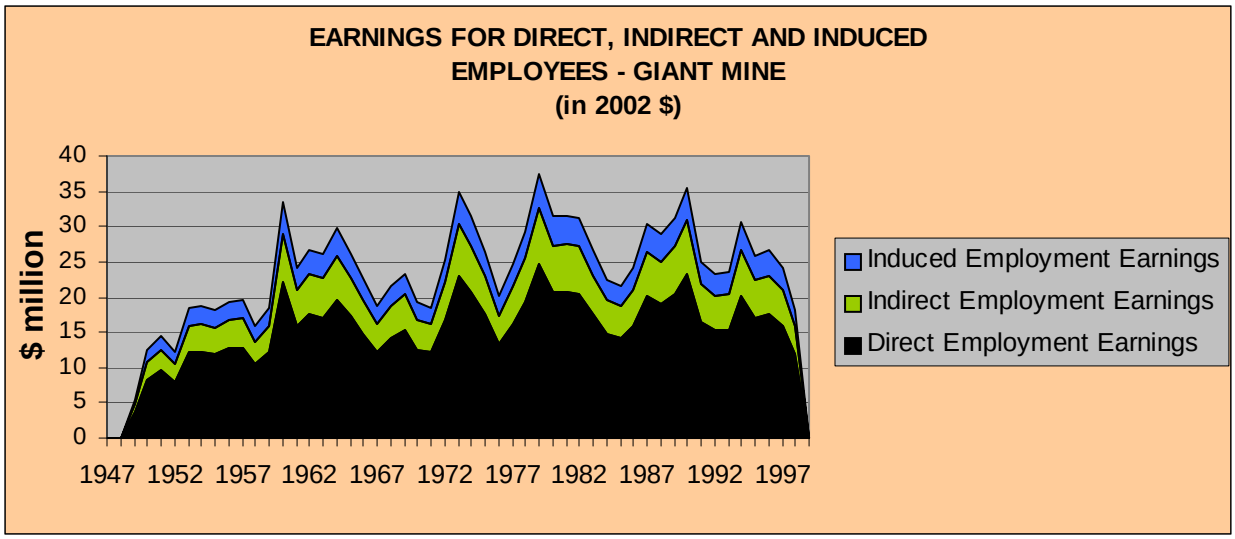


Figure 15. Graph showing life-of-mine direct, indirect and induced employee earnings for Giant mine. The figures were obtained using empirically determined multipliers supplied by the Investment and Economic Analysis Division of the Department of Resources, Wildlife and Economic Development, GNWT.

Direct employees at Giant mine earned an average of $45,000 annually (in 2002 dollars) over the life-of-mine to 1998, generating some $793 million in total earnings (Fig. 15). Annual indirect and induced employee earnings averaged out at $39,000 and $31,000 respectively, or $411 million in total over the same period.

Therefore, total direct, indirect and induced employee earnings from Giant have exceeded $1,200 million. Assuming personal income tax rates averaged 30%, some $360 million in personal income taxes would have been generated over the mine life. (Figures for Con are unavailable, although personal income tax revenues generated by the mine will likely have been equally impressive.)

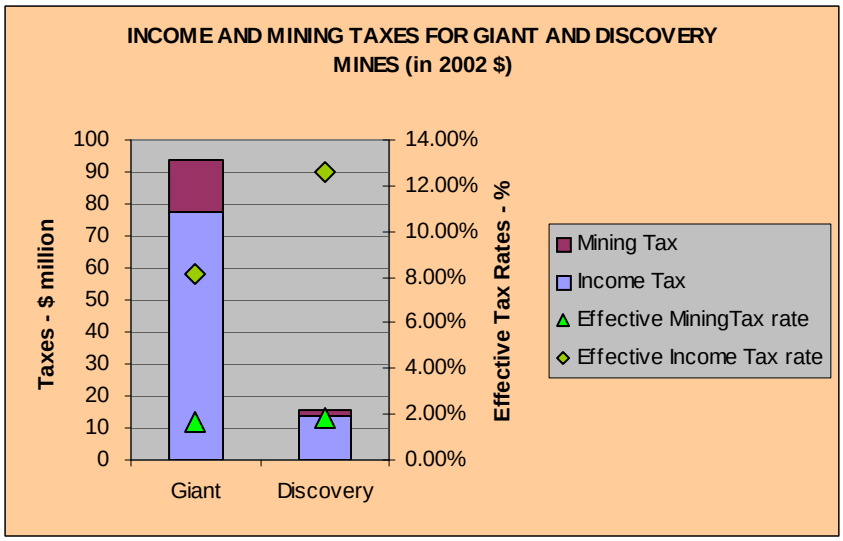


Figure 16. Graph showing income and mining (royalty) taxes for Giant and Discovery mines. Figures for Giant are from 1948 to 1986 – subsequent data is unavailable. Figures for Discovery are life-of-mine. Figures for Con are unavailable.

Corporate income and mining taxes generated by Giant mine totaled $78 and $16 million respectively over the life-of-mine to 1986 (Fig. 16). Hence, the effective income and mining tax rates[1] for the mine were 8.11 and 1.68% respectively. Income and mining taxes for Discovery mine were $14 and $2 million respectively. Effective income and mining tax rates for Discovery mine were 12.58 and 1.84% respectively.

Therefore, it can be seen that personal income taxes contributed substantially more to government revenues than did corporate taxes, underscoring the critical importance of employment on the gold mines to the Yellowknife economy.

[1] Defined as actual tax paid divided by net taxable income before taxes, expressed as a percentage.

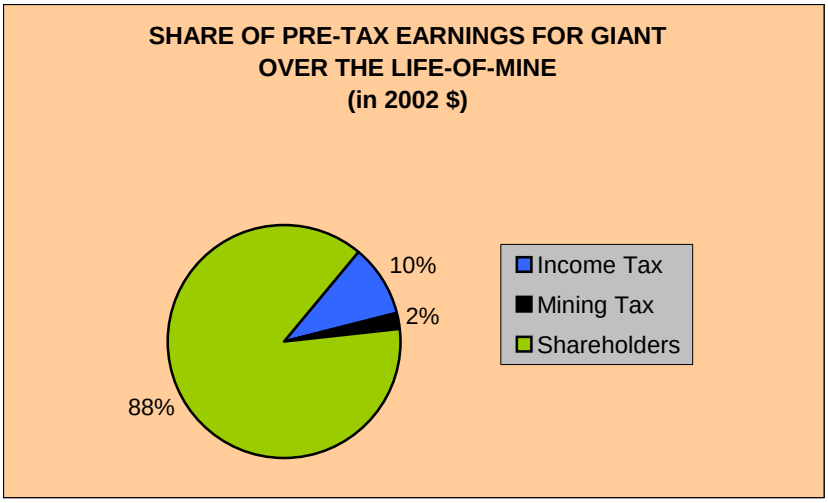


Figure 17. Graph showing the share of pre-tax earnings for Giant mine. Figures are for the years 1948 to 1986.

Giant generated a total of $677 million in shareholder's equity[2] over the life-of-mine to 1986 (Fig. 17). This equates to some 88% of the total pre-tax earnings generated by the mine. Income and mining taxes, on the other hand, accounted for a relatively small proportion of pre-tax earnings, i.e. 10 and 2% respectively.

By comparison, income and mining taxes generated by gold mines operating under the existing mining taxation regime should, according to models developed by the GNWT and others, account for some 25 and 9% of pre-tax income respectively. Shareholder's equity earnings should only be around the 66% mark.

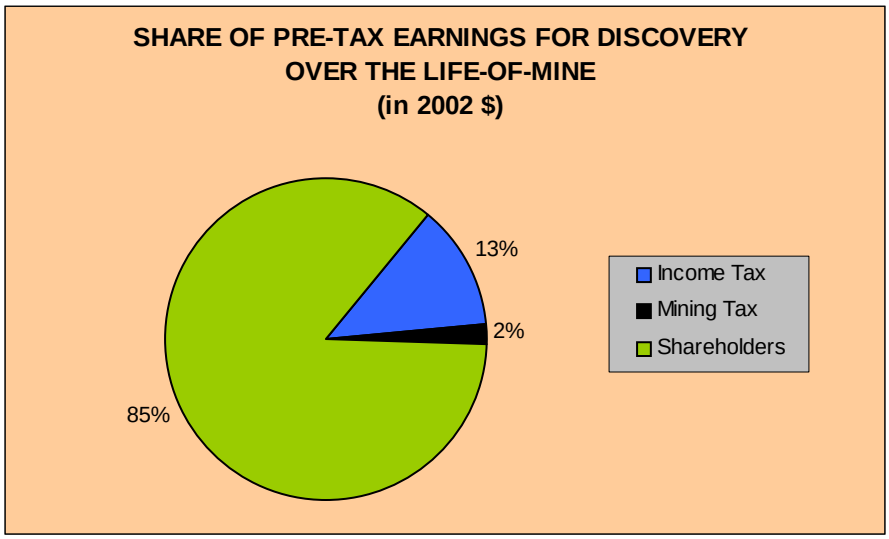


Figure 18. Graph showing share of pre-tax earnings for Discovery over the life-of-mine.

[2] Defined as the total cash flow over the life-of-mine. It is, in effect, the money made by the mine on behalf of the shareholders of the company.

Discovery generated a total of $93 million in shareholder's equity over the life-of-mine (Fig. 18). This equates to some 85% of the total pre-tax earnings produced by the mine. Again, income and mining taxes accounted for a relatively small proportion of pre-tax earnings, i.e. 13 and 2% respectively.

The Yellowknife mines have been less successful in the flow of benefits to local First Nations. Direct participation in the labour force at all three mines by aboriginals has never been significant, and while it could be argued that the local first nations have benefited from the infrastructure development associated with the mines this still results in a sense of inequity. This, when combined with the environmental legacy, is a negative impact of gold mining in the Yellowknife Mining District. Various initiatives to increase participation of the local first nations in the Yellowknife Gold Mines have not been successful, for a variety of reasons. However, lessons have been learned, by both industry and government and applied during the development of the diamond mines with significant success to date.

**Managing Broader Economic and Political Effects**

In the almost seventy years of the Yellowknife Gold Mines operating history there have been enormous changes in both the local, national and international economic and political environments. That the mines are still producing speaks to both the quality of the geological resource and the ability of successive operating management and personnel to adapt and innovate. Government, at various levels have also established and maintained mineral policy and regulatory regimes that have allowed the Yellowknife Gold mining industry to continue to create wealth, adapt to changing societal norms and also wind down in a reasonable orderly manner in comparison to other operations scattered around the country.

**Investment in the Future**

How the benefits that have been generated from the Yellowknife gold mines have been invested to ensure a sustainable future beyond mining provides an interesting example for "Mining and Sustainable Development". Yellowknife moved beyond "mining town" status following the decision to make it the territorial capital in the late 1960's. The growth of the city and nearby communities has been driven more by a steady increase in the contribution of the transportation and Government sectors since 1970. It is important to note the basic infrastructure of the city to which the gold mines contributed (power, highway access, housing, local mining industry supplier industry) as Yellowknife evolves into a government, transportation and diamond mining industry support center.

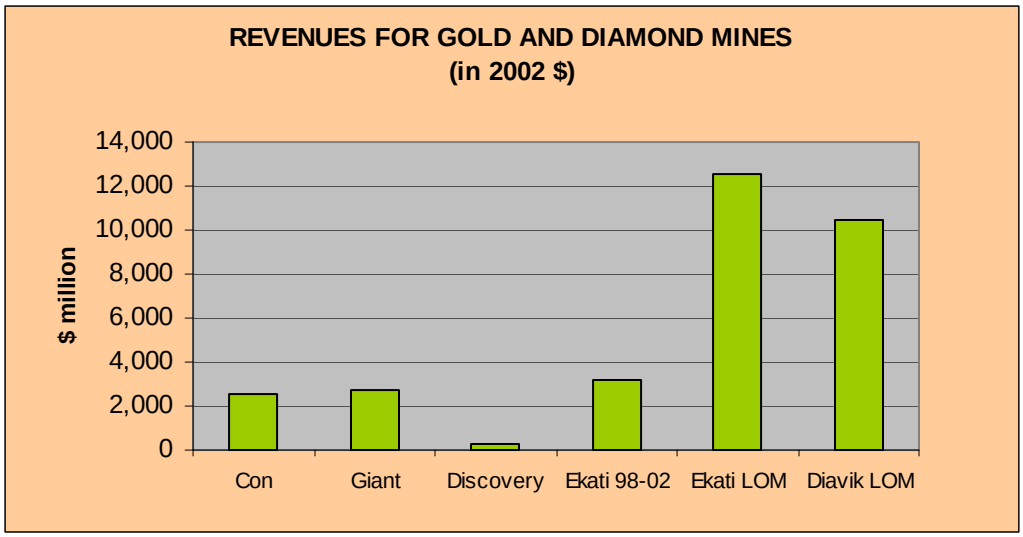


Figure 19. Graph comparing revenues for Con, Giant and Discovery gold mines with Ekati and Diavik diamond mines. LOM stands for life-of-mine.

As indicated previously, total revenues generated by Con, Giant and Discovery mines came to $2,528, $2,743 and $240 million respectively (Fig. 19). By comparison, Ekati diamond mine has, in just over four years, generated more in revenues than either Con or Giant did over 50-plus years of production – around $3,200 million. Furthermore, Ekati and Diavik together are expected to produce more than $22,000 million in revenues over the next 20 years, dwarfing the contributions made by the gold mines of the Yellowknife Mining District.

Yellowknife will long outlive the gold mines that it was built on, demonstrating not only that mining can build sustainable communities, but that sustainable mining as a concept is an entirely valid precept.

## References

Eggert, R.G. 2001. Mining and Economic Sustainability: National Economies and Local Communities. Mining Minerals and Sustainable Development, Background Paper # 19.