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## 1. **GEOLOGICAL SERVICES DIVISION**

### **Introduction**

The year nineteen eighty-seven witnessed the now perennial trend of losses in staff, especially technical personnel. The Divisional Manager, Mr Mohabir Persaud resigned in July and his designated replacement, Mrs K. Livan, proceeded on a year's study leave at Camborne School of Mines; Dr. V. Harpaul terminated his employment in October and Mr. Christopher Barron finally resigned effective September, 1987.

In spite of staff shortages, a considerable amount of geological work was done. This included an exploration programme at 42 Mile, Issano by Kampta Persaud on Exclusive Permission 653 (held by Patrick Perreira); The Badidiku P.G.M. Reconnaissance Programme and the Aishalton Amethyst Re-evaluation Project by R.G. Elliott; and the Arawakai Feldspar Drilling Project by J. Ghansam.

The Chemical and the Petrological Laboratories continued with routine and some commercial analyses. Both laboratories benefitted from equipment and supplies through the U.N.D.P. Institutional Support Programme.

The Chemical Laboratory further benefitted from the attachment of Mr. Thomas, a Chemist attached to the United Nations.

The International Development Research Council (I.D.R.C) of Canada co-financed a clay research project, that was aimed at characterising the coastal clays; and a feldspar drilling project, aimed at evaluating the feldspars of the Arawakai Feldspar deposit.

The foreign mining companies operating in Guyana during the year included Golden Star Resources Limited with properties at Million Mountain, Arakaka and Baramita, whilst Paranapanema did exploration at Tassawini. Placer Dome Inc. joint-venture did work with Golden Star Resources Limited on the Omai property.

### 1.1 **Field Projects**

- (1) Arakaka Gold Project
- (2) The Appaparu Gold Exploration Project
- (3) The Rupununi Semi-Precious Stones and Platinum Group Minerals Expedition
- (4) Arawakai Feldspar Expedition
- (5) The Geochemical Exploration of a Portion of Exclusive Permission 653 at 42 Miles, Issano
- (6) I.D.R.C Clay Project Report.

### Arakaka Gold Project by Sat Narain - Snr. Geologist 1

Arakaka district has long been established in connection with gold workings. As a result, two areas comprising a total of 57.25km<sup>2</sup> were leased on a joint venture basis to this Commission and the Democratic People's Republic of Korea for exploration and exploitation of gold.

Three broad divisions may be made to describe the geology of the area:-

- (1) The Barama Group
- (2) The Granites - Younger granites
- (3) The Dolerites - metamorphosed basic rocks (including the Younger Basic Intrusive).

The Barama-Mazaruni super-group rocks found in this area consist of phyllites, sheared quartzites, chlorite schists and sheared quartz conglomerate. These were intruded by the younger granites comprising a reddish-pinkish pyroxene-amphibole variety and a biotite granite. Both have undergone intense shearing with the latter becoming distinctly gneissic.

Unaltered dolerites are relatively rare within this area and in places, they are seen cutting the phyllites, granites and also the metasediments. Gold occurs in the highly weathered schists and phyllites as well as the quartz veins and stringers. Some of the free gold resulting from the disintegration of quartz veins and stringers and the weathered schists and phyllites, accounts for the secondary enrichment of the hill slopes and placers at the lower level.

Exploration commenced in August 1986 on Site # 1 (Area# 1) approximately 5 kms on the Arakaka-Matthews' Ridge road. Exploitation commenced in January 1987 by bulldozing the side of a small hill into a pool and sucking up the gravel with an 8" gravel pump suspended above the pool.

The results are as follows:-

	ozs.	dwt.	grns.
January, 1987	2	3	4
February	1	11	0
March	-	10	20
	-----		
Total	4	5	0
	=====		

The above returns are very low considering the expected yield of 0.46 gm/m<sup>3</sup> from an estimated reserve of 76,000 m<sup>3</sup>. As a result this area was abandoned and an attempt was made to bulldoze the eastern slope of "Goat Hill", which was nearby, and jet the gravel accumulated, directly into a sluice box, but this operation was abandoned even before the results were made known.

Exploitation of the above area was undertaken simultaneously with exploration of Area # 2 and Site # 1 in this area was evaluated after pitting. This site is located approximately 3 kms east of the 'iron' bridge over the Barima River and approximately 6.5 km south of the Arakaka-Kaituma Road. Calculated reserves were put at 50,000 tonnes with a yield of 0.1437 gm/tonne. These returns are considered uneconomical for large scale mining especially when water has to be pumped directly from the Barima River, which is approximately 0.5km away. Porknockers have however, worked some of the 'hot spots' successfully during the rainy season. Area # 2 comprises 50 km<sup>2</sup> and extends eastwards from the 'iron' bridge over the Barima River to the Waratabaka creek. A total of 6 km of base line (550) and 60 km of cross lines (145°) were cut to provide access into this area. Sixty-four pits were dug, varying in depth from 1.0 to 2.0m. The results from this area were not encouraging and this, coupled with the low returns from Area # 1, promoted the decision to close operations in April, 1987.

### 1:3 **The Rupununi Semi-precious Stones And Platinum Group Minerals Expedition**

From 29th October to 9th December, Geologist R.G. Elliott carried out a field programme in the Rupununi area accompanied by Mr. J.N Singh as field assistant.

The primary objective of the expedition was to have an inventory of the semi-precious stone deposits, (agate, amethyst, rose quartz and green quartz) in the region. The Shishwa agate deposit was re-located on the Ireng River, 7 km south of Bon Millee and re-evaluation with minimum reserves estimated at 2,500 kg of good quality agate.

No further amethyst or green quartz deposits were located in the region. However, the existing deposits in the Aishalton area were surveyed and located accurately on 1:50,000 topographic maps. Very low grade amethyst is currently being mined from the original deposit under a locally authorized claim.

Despite an extensive search using a four wheel drive vehicle the 'missing' rose quartz reef which was reported by Dr. S. Singh in 1972 between Dadanawa and Katcliriwau could not be found.

A preliminary mineralogical examination of a routine heavy mineral concentrate sample collected from a spring 500m north of the bon Millee agate prospect indicates an abundance of a mineral which has been tentatively identified as Euclase, beryl -

aluminosilicate.

A reconnaissance soil sampling programme in areas underlain by the mafic/ultramafic, Lower Proterozoic Badidiku Suite was carried out to investigate potential platinum group mineral (PGM) deposits. The equivalent suit in neighboring Suriname - The Goeje Gabbros are platinum bearing although no information is available.

Three ultra-basic stocks in the South Savannahs namely Badidiku, Achiwuib and Tamton were thus targeted for inspection and subsequently 200 soil samples and 28 rock specimens were collected for analysis. The soil samples are to be assayed abroad - the costs to be met by overseas investors. However, some duplicate samples will be analysed at the Guyana Geology and Mines Commission laboratory.

#### 1:4 **The Appaparu Gold Exploration Project**

An eight-week exploration programme was carried out in the Appaparu area, Upper Demerara River by Dr. V. Harpaul in March and April. The principal aim of the project was to establish a relationship between geology and gold mineralization.

The Appaparu area is underlain by Precambrian basement which is comprised of 'Older Basic Intrusive' and the volcano-sedimentary sequence of the Barama Mazaruni Supergroup. The basement is intruded by a series of Mid Proterozoic dolerite dykes belonging to the Avanavero Suite. Laterite caps and the white sands of the Plio-Pleistocene Berbice Formation make up the surficial deposits.

The results of the integrated exploration programme of geological mapping (1:25,000) and soil sampling helped to determine that primary gold mineralization is confined to an E-W trending shear zone, 30m wide in the Winter Mine area where auriferous quartz veins are hosted within chloritic schists. High Au values in the soil of the Winter Mine area correspond to anomalous G values.

Gold values ranging from trace amounts to 2.97 gm/ton were also recorded in stream sediment samples collected from the local drainage pattern. The highest values were recorded at the confluence of black Creek and above the confluence of Black Creek towards the vicinity of Winter's Mine.

#### 1:5 **Arakawai Feldspar Expedition (an I.D.R.C Project)**

##### Introduction

Cameron (1971) reported the occurrence of a 50ft wide pegmatite dyke in the upper reaches of a tributary (near to Ituni) of the Arawakai Creek. F. Weihrauch and S.

Narain (1977) sampled the said dykes. S. Narain (1984) found a dyke approximately 525ft north of the south dyke. Both dykes intrude granite. Clutterbuck and S. Narain (1925) mapped visible out-crops and boulders of pegmatite and collected samples for analyses. The observation made by Mr. Clutterbuck were super-imposed on the (Nov. 1986) preliminary map of Arawakai.

#### Objectives

- a. To carry out geological work and pitting to trace the strike continuity and dip of both north and south dykes, to investigate further pegmatite occurrences and to collect rock and soil samples for laboratory testing (petrological, etching, chemical and physical).
- b. To complete a topographic map at 1:1200 scale of 2600' by (0.2)ml<sup>2</sup> area encompassing the lower drainage basin of the 'White Water' tributary of Arawakwai River and traverses along the two contiguous creeks to the west. Field methods include line cutting, geological traverses, scintillometer survey using an SPP2 scintillometer to measure K<sub>40</sub> and K<sub>42</sub> values. Topographic survey including levelling is to be done by Guyana Geology and Mines Commission's surveyor.

#### Work Done

- a. A base line was cut for 2,000 ft along the projected strike (328° magnetic) of the South dyke, commencing at the waterfall (station 00 ft N.). Cross lines (21) were cut at right angles at 100 ft intervals and extended for 600 ft and 200 ft west and east of base line.
- b. A second base line (425' east) of the first was out in a parallel direction (see map).
- c. Twelve cross lines (E-W) were cut at right angles at 100 ft intervals in the southern section of the area to facilitate topographic surveying.
- d. Scintillometer survey was done over the grid at 50 ft intervals (see map).
- e. Soil samples were taken in representative areas over pegmatites, granites, laterites, in and around pits 24, 19 and 27 where lighter soils occur and around lines 18-20 in areas of higher readings. Sixty-eight (68) soil and 63 concentrate samples were submitted to the Geology and Mines Commission Laboratories for chemical (Na, K, Li, Fe) and mineralogical tests to be carried out on them.
- f. Geological mapping of the investigated area was completed as well as traverses were done along the lower drainage basin of the 'White Water' tributary of the Arawakai River and the two contiguous creeks to the west.

Rock samples - pegmatite, granite and dolerite were collected from outcrops. Chemical and petrological tests on six (6) pegmatite samples (mainly for sodium and potassium) are being carried out by Guyana Geology and Mines Commission Laboratories. Physical tests for ceramic properties will be done by IAST.

Geologically, laterites form a cap to an east-west ridge of mid-Tertiary age whose summit lies between 300 ft - 340 ft A.S.L. It is underlain by an extension of the Tiger-Hill-Malali Ridge quartz dolerite sill which is intruded into granitic rocks. The ridge is concealed by Plio-Pleistocene Berbice (white sand) formation, clay loams and brownish to bleached white sands.

The pegmatite dykes found in the White Water creek are sandwiched by a biotite-granite, which is intruded by a dolerite dyke (see map). The south dyke (45ft wide) causes a sharp link in the creek course, and a 15 ft water-fall. It strikes approximately 328° magnetic and seems to dip 40-50° NE.

The North dyke consists of two creek bed out crops approximately 30ft across. Approximately 25 ft northwest of these two exposures (pegmatite) were found at the base of a hill slope. Both the creek bed out crops and the exposures possibly belong to one complex aligned roughly 315° magnetic. This may not necessarily be the trend direction. Dip direction is difficult. It seems to be in a north-eastern direction. The "so-called" dyke has the tendency to plug south easterly. From visual observation, potash and soda feldspars are predominant with subordinate quartz and minor mica. The feldspars occur as large crystals with intergrowth, of quartz, and sometimes it is more granular with interstitial quartz.

#### 1.6 **Geochemical Exploration of a Portion of Exclusive Permission # 653 at 42 Miles, Issano**

A geochemical sampling programme was conducted over a portion of Exclusive Permission # 653 held by Mr. Patrick Perreira of Buxton, Guyana. The area is contiguous to the well known and extremely rich '9 Mile deposit. This survey was basically one of orientation and was effected to test the applicability of soil geochemistry in definition of potential auriferous zones in this terrain.

The regional geology of the area consists of the OKUWA Granite, which is a coarse-grained granoliorite with a marginal porphyritic phase, intruding into a metamorphosed greenstone sequence. Abundant quartz - veining is present. Gold is reported from most of the large creeks in the area.

Seven hundred and fifty-four geochemical soil samples were collected from the area and analysed for gold. Iso value (Au) curves showed two areas that require follow-

up work by deeper sampling.

The area lies in the vicinity of the granite/greenstone boundary and gold mineralisation is likely. Statistical treatment of the results show a mean value of 0.08 ppm Au with standard deviation of 0.11. Deep pitting and/or augering is recommended to test for potential primary eluvial gold.

1:7 **Technical Report on the International Development  
Research Council Clay Project**

Sixteen auger holes were drilled up to a depth of 8 m in the Essequibo, Demerara and Berbice coastal regions. Subsequently 97 samples were collected for physical and chemical analyses. A further 7 holes were drilled in Berbice, Mahaica River and West Bank Demerara. Results for the latter set of samples are not yet available.

**Summary of Technical Data**

**A. Physical Tests**

*Clay Type*

The dominant clay type throughout is kaolinite with minor quartz. Gibbsite and anatase were recorded in a few samples. The absence of illite is conspicuous as this should be present in marine clays due to a more reducing environment.

*Plasticity Index*

The Plasticity Index varies from 14.258 in the Bartica area (Torani Canal) to 53.313 at Mon Bijou on the Canje River. No apparent relationship exists between Plasticity Index and depth.

*Plastic Limit*

The Plastic Limit varies from 16.77 at Ebini to 30.527 at Mon Bijou. The clay samples from the Canje area have higher plasticity limits than samples from other areas.

*Liquid Limit*

The Liquid Limit varies from 35.729 at Bartica (Torani Canal) to 83.840 at Mon Bijou (Canje River).



### *Particle Size*

Particle size range from 10.35m at # 44 Village Corentyne to 74.09 m at Mon Bijou. Particle size distribution analyses were carried out by the Institute of Applied Science and Technology on 16 samples.

### **Chemical Tests**

#### *ppm Li*

The six samples from the BV holes contained the highest Li content ranging from 72 to 89 ppm. In this hole the Li content increases with depth.

The lowest values of Li were recorded in samples from a borehole at Lemona, Supenaam River. Values ranged from 7 to 13 ppm Li.

#### *% K*

The borehole at BV contained the highest % K values which range from 2.14 to 2.20 % K. The lowest value, 0.35%, was recorded in a sample taken from Tabela Creek (Canje River).

#### *% Na*

The % Na values range from 0.13 to 2.20%. In the BV hole high % Na associated with high values of % N and Li ppm. However, this relationship does not hold for other localities.

## **2. THE OTHER MINERALS UNIT**

During the year the Other Minerals Unit continued to attempt to quantify and characterize some of the ceramics raw materials of Guyana.

### **2:1 Arawakai Feldspar Project**

In 1971, N.R. Cameron reported the occurrence of a 50 ft wide pegmatite dyke in the upper reaches of a tributary of the Arawakai Creek near Ituni. In 1977, F. Weihrauch and S. Narain sampled the said dyke. In 1984, S. Narain discussed a 15ft wide dyke about 525 feet north of the above mentioned dyke. In 1985, J. Clutherbuck and S. Narain mapped outcrops and boulders of pegmatite and collected samples for analyses.

On account of the limited accessible feldspar reserves at Flat Rock Quarry on the Cuyuni River, the Guyana Geology and Mines Commission (GGMC), the Institute of Applied Science and Technology (IAST) and the International Development Research Centre (IDRC) of Canada agreed to study the feldspar occurrence at Arawakai. This area was considered to have larger reserves of feldspars and to be more accessible than Flat Rock.

In 1986, a decision was taken by the above mentioned institutions to undertake geological investigations to be followed by drilling, if necessary, in order to determine the strike continuity of the observed dykes, to check their attitudes and dimensions and to evaluate their tonnage.

The pegmatites found in this area are sandwiched by biotite - granites and biotite - genesis which are intruded by a dolerite dyke. The South outcrop (45 feet wide) causes a sharp bend in the course of the Creek and dips 50° NE. The North outcrop consists of two creek bed exposures about 30 feet wide. It strikes approximately N315° NE.

The methods used in the geological exploration included line-cutting topographic surveys, soil sampling, pitting and a scintillometric survey using a 5PP2 scintillometer to measure K40 and K42 values in order to locate any potassium - rich pegmatites which might contain these isotopes.

One hundred and fifty one (151) soil and concentrate samples were taken from pits, other representative areas over pegmatite, granite, laterites where light coloured soil occurred and in areas of high scintillometer readings. Rock samples - pegmatite, granite and dolerite were collected from outcrops for petrological examination and chemical analyses. During drilling, the cores were placed in plastic boxes to be logged.

A total of 1281 feet 6 inches was drilled in nine holes with an average overburden depth of 56 feet. The average core recovery was 99.5 percent. Four holes were drilled vertically and the others were inclined at 45° W. All the holes showed pegmatite of variable thicknesses (ranging from 6 inches to 44 feet) without lateral continuity. The Pegmatites found at Arawakai are associated essentially with granites and biotite - gneisses and do not appear to extend as a continuous lateral dyke. There is no evidence of continuity between the North and South outcrops. These are apparently separate outcrops or exposures.

The pegmatites are mineralogically and chemically similar to the parent rock (granite) in that their main constituents are quartz and alkali feldspar with minor muscovite.

Petrological mineralogical and etching studies of the pegmatities revealed potassium feldspar to be the dominant mineral. The average K<sub>2</sub>O content of the pegmatites is 4.4 percent. The tonnage of the pegmatite reserves varies from a minimum

of 30,000 to a maximum of 328.000 tons according to the area of influence used.

Because of the thickness of the overburden, it is considered that it would be uneconomical to mine the pegmatite and further work on this project is not recommended.

## 2:2 Clay Project

The main objective of the Clay Project was to characterize the clays of the readily accessible coastal areas of Guyana. Specifically, this project aimed to establish the spacial distribution of the various units of the Demerara Formation and to determine the mineralogical, chemical and ceramic properties of the clays and their lateral and vertical variability. The localities originally identified for augering and sampling were as follows:

### Set # 1

Essequibo	-	Lima, Amazon and Chalk Hill & Aratak (Supernaam River)
Demerara	-	Beterverwagting (East Coast)
Berbice	-	Ebibi, DeGoed Hoop (Canje River), Kari Kari Creek, Tabela Creek, Mon Bijon, Tarani Canal, Bartica (on Tarani Canal), Crabwood Creek, Rose Hall and # 44 village.

A decision was subsequently taken to auger and sample a few other localities as follows:-

Demerara	-	Handsome Tree and St Cuthberts' Mission (Mahaica River), Canals Polder (West Bank).
Berbice	-	Rosignol, Ithaca, Onverwagt, Still Horn (Berbice River)

Sampling was done by auger, and at each locality, samples were taken at each meter to a depth of 8 m where possible. All samples were to undergo a preliminary x-ray diffraction scan at Guyana Mining Enterprise Limited (Guymine). Chemical analyses were undertaken by Guyana Geology and Mines Commission (GGMC). Physical Tests (particle size analysis, liquid limit, plastic limit, plasticity index and firing colour) were undertaken by the Institute of Applied Science and Technology (IAST).

## 2:3 **Laboratory Results**

### a) *Chemical Tests*

Chemical analyses were completed on all samples from Set. # 1.

Na varied between 0.13 and 2.20 percent  
K varied between 0.35 and 2.20 percent  
Li varied between 7 and 89 parts per million

### b) *Physical Tests*

Physical tests were completed on a few samples selected at random from each locality. Particle size passing 2 varied between 10.35 and 74.09 percent. Plastic limit varied between 16.77 and 33.30. Liquid limit varied between 35.73 and 83.84. Modulus of rupture at 110 C varied between 14.70 and 111.08. Modulus of rupture at 900 C varied between 19.53 and 194.74.

Shrinkage at 110 C varied between 4 and 10 percent Shrinkage at 900 C varied between 2.5 and 11 percent.

Temperature at 900 C was reached when determining firing colour, which varied from reddish orange to orange pink and light red and light brown.

Steel hardness was not reached.  
Shrinkage data are for both drying and fired shrinkage.

### c) *XRD Seans*

XRD Seans were completed on samples from all localities except five. The dominant clay is kaolinite with minor quartz. The absence of illite is conspicuous.

## 2:4 **Dimension Stone**

As a result of his visit to Guyana during 24 November - 7 December, 1986, and to Teperu Quarry on 5 December, 1986, Dr. U. Kretschmar submitted a report on Dimension Stone and this report was discussed by Cde. W.King, Executive Chairman, Guyana Natural Resources Agency, with Cde. E. Ralph, Director, Project Development Unit of GNRA, Cde. E. Hopkinson, Director of Other Minerals Unit of GGMC in June 1987.

## 2:5 **Sand**

Mineral and Chemical Technology Limited bought a portion of the Sand Hills estate on the left bank of the Demerara River and plan to mine sand there for sale to North America. The Company also built a wharf capable of accommodating ocean-going ships, at the same location.

## 2:6 **Ceramics Raw Materials Meeting**

On 16 - 17 March, 1987, a meeting was held to discuss the establishment of a Ceramics Body Preparation and Raw Materials Processing Facility in Guyana. The meeting, which was sponsored by CARICOM with assistance from the Canadian International Development Agency (CIDA), was attended by representatives of four ceramics companies in Trinidad and Tobago and one in Jamaica, together with representatives from Guyana Natural Resources Agency, Guyana National Engineering Corporation, Guyana Geology and Mines Commission, Guyana Manufacturing and Industrial Development Agency, Vanceram Tableware Limited and Mineral and Chemical Technology Limited of Guyana.

The objectives of the meeting were:

- a) to review the existing ceramics industry capacity levels in Caricom countries and plan for additional capacity in the short and long terms,
- b) to ascertain the degree of commitment of regional ceramics manufacturers towards utilization of prepared ceramic bodies and beneficiated raw materials processed by a plant established in Guyana, and
- c) to promote joint venture participation by regional industrialists in the establishment of a ceramics Body Preparation and Raw Materials Processing Facility in Guyana.

## 2:7 **Guyana/Cuba Joint Commission**

The Cuba/Guyana Joint Commission approved two projects under the Scientific and Technical Co-operation Programme relating to the Other Minerals Unit as follows:

1. A training visit to Cuba for one month to examine the methods and equipment used in exploitation and processing of industrial minerals.
2. Characterization and utilization of Guyana silica sand.

## 2:8 Visits

Dr. D. Scafe, Research Geologist of the Alberta research Council of Canada, visited Guyana Mining Enterprise during the period 20 February - 6 March. He reviewed literature at the Guyana Geology and Mines Commission and visited the Institute of Applied Science and Technology and the Guyana Natural Resources Agency. Together with Guyana Geology and Mines Commission staff, he undertook field sampling, visited pegmatite outcrop at Arawakai and he presented a short workshop at Guymine on the preparation of clay samples for X-ray diffraction analysis and the identification of minerals from the patterns obtained.

Dr. U. Kretschmar of Kretschmar International Geoscience Corporation of Canada visited Guyana during the period 24 - 29 June. He had discussions with the Heads of the Guyana Natural Resources Agency, the Institute of Applied Science and Technology, the Guyana Geology and Mines Commission and the DIEC on the subject of a preliminary study of markets for Guyana's silica sand to be funded by IDRC.

## 3. **MINES PRODUCTION AND DEVELOPMENT DIVISION**

### 3.1 **Dickman Hill**

The Dickman Hill Mine is situated approximately four (4) miles South of the village of Mahdia, in the Potaro Mining District, Region 8. The Dickman Hill deposit is primarily alluvial, being a part of the paleo-channel known as the Proto-Mahdia.

Mining at Dickman Hill commenced in March 1980, where hydraulicking was used to excavate the lateritised auriferous gravels. Processing was accomplished by sluicing which produced a primary concentrate of the heavy minerals and the free-milling gold. Hand-jigging through Brazilian sieves and batelling were used to produce a final concentrate of gold and black sands (mainly ilmenite). Amalgamation with mercury, followed by roasting of the amalgam completed the recovery and production of a raw gold, respectively.

During 1983, the mining method was changed from hydraulicking to bulldozer excavation (Caterpillar D65) and shortly afterwards, haulage by front-end loader (Terex SR-71), was introduced to increase the through-put of the mine. The excavated gravels were slurried by manually operated hydraulic monitors and the slurry was channeled to flow through the sluice boxes. This method of mining and processing remained unchanged. Operations at Dickman Hill ceased in August, 1987.

## **Mine Plan 1987**

The 1987 Mine Plan was embodied in the then three (3) year mine plan which was initially implemented in 1986. The Mine Plan for 1987 set a target of 150,000  $\text{Lyd}^2$  of auriferous gravels to be mined from the Dickman Hill deposit. The processing target was set at 100,000  $\text{Lyd}^3$ . The mine plan proposed a daily processing target of 500  $\text{Lyd}^3$ , using two (2) ten hour shifts daily. Maximum dozing distance was calculated and set at one hundred (100) feet with the maximum haulage distance set at one thousand (1000) feet.

Proven reserves at the end of 1986 stood at 744,000  $\text{Byd}^3$  at an average grade of 0.023  $\text{ozs/yd}^3$ . Recovered grade was estimated to be 0.01  $\text{ozs/yd}^3$ .

## **Mine Development**

Mine development at Dickman Hill during 1987 was minimal, and consisted of the opening of a new mining face which necessitated the repositioning of the "slurring bay" and the line of sluice boxes. The quantity of debushing and overburden stripping done during 1987 was only that which was necessary to facilitate the opening of the new face, as the decision to cease operations at the mine was made towards the end of 1986. The total area debushed was 2000  $\text{yd}^2$  and the volume of overburden stripped was 1200  $\text{Lyd}^3$ .

## **Mining**

At the cessation of mining operations at the end of the first week of August in 1987, a total of 12,000  $\text{Lyd}^3$  of auriferous gravels was excavated from the Dickman Hill Mine. Due to the imminent cessation of operations, there were several deviations from the existing Mine Plan. A single shift was used during 1987, as only one Caterpillar D6 bulldozer and a Caterpillar 920 Wheel Loader were available for excavation and haulage respectively. The severe shortfall in the volume excavated was the direct result of the extremely poor mechanical performance of the mine equipment and the constant lack of fuel.

## **Processing and Recovery**

Slurring of excavated gravels and primary processing through the sluice boxes were done for an average of 6.83 hours per day for 73 days, and a total of 10,300  $\text{Lyd}^3$  of auriferous gravels was processed. No changes were made to the recovery system which functioned efficiently, despite its limitations. The average recovered grade for 1987 was 0.0063 and 68.5  $\text{ozs}$  of raw gold was produced.

## **Mine Equipment Performance**

The mining equipment at Dickman Hill did not perform as required, but unfortunately, as expected. Though the mine plan required the use of two (2) bulldozers (Caterpillar D6 size) and one front-end loader (Caterpillar 950 size), only one (1) Caterpillar D6 bulldozer and one Caterpillar 920 loader were available for excavation and haulage.

A total of 570 bulldozer excavation hours, and 220 wheel loader haulage hours were recorded. Based on the originally required 450 total mine equipment hours, the overall mechanical availability (for 1987) was 49%. Downtime due to non-mechanical causes reduced the overall availability to 30%.

The 135 H.P Leyland and the 140 H.P engines which powered the 6 x 4 and the 8 x 6 high pressure Berkeley water pumps, performed efficiently (during 1987), recording mechanical availabilities of 100% and 88% respectively. It should be noted that the overall performance of the Mine was directly linked to that of the excavating machines. The poor performance of these machines resulted in the poor overall performance of the mine.

## **Administration**

The Manager, Mines Production and Development has the over-all responsibility for the management of the Dickman Hill Mine. Mine site management was effected through a rotating tour-of-duty system of a team consisting of two (2) mining engineers and a mining technician. A tour-of duty was a nominal eight (8) weeks. The mine-site manager was assisted by a mine administrator, who was responsible for non-technical matters concerning the mine. During 1987, the labour force at the mine averaged fifteen (15), ten (10) of whom were directly employed in the mine.

## **Finance**

No capital expenses were incurred during 1987. Operating costs for the year totaled \$700,724.00, which included labour and security costs, incurred after the cessation of operations. Income from gold production totaled \$18,405.00. The poor financial performance of the mine can be directly attributed to four (4) factors, viz:-

- a) The poor excavation and haulage equipment performance;
- b) The delay in a partial execution of the planned development work for 1987.
- c) The processing problems encountered, and
- d) The downtime caused by non-mechanical problems, mainly the irregular fuel and



ration supply.

### 3:2 **Drilling Operations**

#### *Omai*

Drilling at Omai recommenced in September 1987, after a drilling agreement was reached between Placer (Guyana) Limited and the Commission. Omai, which is situated approximately ten (10) miles below the mouth of the Potaro River, on the left bank of the Essequibo River, is held under an Exclusive Permission by Golden Star Resources, a company incorporated in Guyana.

Although the initial contract discussions with Placer (Guyana) Limited specified the drilling of six (6) boreholes through the saprolite zone of the Exclusive Permission, an extension to drill a further twenty-one (21) holes was requested by the Company.

Consequently during 1987, a total of twenty-five (25) holes were drilled, having a total depth of 544.8 meters. The boreholes, which were all drilled through the saprolite horizon to bed rock, were sampled at one (1) foot and two (2) feet intervals, using BW 2 Feet carbide casing or diamond shoes to take the samples. The overall percentage core recovery was 87.2%, and the average drilling rate was 8.9 meters per shift. Drilling for this contract was done on a two (2) shifts (20 hours) per day system. The operation was managed by a Project Officer and the drilling was supervised by a mining driller. Personnel at the operations site totaled thirteen.

A Longyear 34 drill was used throughout the duration of the operations in 1987. A combination of NW, BW and HW Diamond casing shoes were used, along with NW and BW carbide shoes.

The major problems experienced during 1987 were the several tardy arrivals of all supplies from Georgetown.

#### *Arawakai*

During the first half of 1987, the Guyana Geology and Mines Commission, Institute of Applied Science and Technology and the Industrial Development Research Council agreed to undertake a study of the feldspar occurrences at Arakawai.

As part of a detailed geological investigation a crew of twenty (20) drillers and a geologist from the Guyana Geology and Mines Commission carried out drilling in the White Water Creek area of Arawakai. Drilling was done to determine the attitude and dimensions of the pegmatite dykes and to quantify the reserves of feldspar which occur on the numerous dykes which traverse the area. Drilling commenced on 20th August and

was completed on 7th October, 1987. A total depth of 1282 feet was drilled in four (4) vertical and five (5) inclined boreholes (45° to the horizontal). A total of eighty three (83) core samples were recorded. These samples were analysed for the following content:

SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, K<sub>2</sub>O, CaO, MgO,  
Fe<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub>, MnO

### *Harbour Investigations*

In November, the Guyana Geology and Mines Commission was awarded a drilling contract by the Ministry of Transport to complete the preliminary phase of a geotechnical investigation. This phase of the investigation required the drilling and logging of bore holes, the recovery of undisturbed soil samples and the performance of penetration tests at the following stelling locations: Parika, Leguan, Wakenaam, Supenaam, Adventure, Goodman Freetown, Rosignol and New Amsterdam.

The entire investigation required the sinking of 450 meters in clay, sand and gravel; the performance of 360 penetration tests and the recovery of 80 undisturbed piston samples. The estimated duration of the contract is approximately five months. Boring commenced on the 1st December at Parika Stelling and continued until closure for the Xmas holidays on 18th December.

During the period 50.10 meters of drilling was carried out, 11 piston samples were recovered, and 35 penetration tests were performed. Work was scheduled to recommence on 12th January 1988 at Leguan.

### *Arakaka*

On the 17th November, the Arakaka Drilling Project was launched with an approved estimate of expenditure of \$372,527.00 to drill (diamond drilling) three (3) angled holes to an approximate depth of 115m each for Golden Star Resources Limited.

Mobilization of drilling equipment and crew commenced on the 20th November, and ended on the 14th December, Diamond drilling started on the 15th December, and stopped on the 20th December for the Xmas season with an achieved penetration of 67' (21.32m).

### **Training Programme**

Towards the end of the second quarter, the Mines Production Division of the Commission, planned and executed a drilling training programme for potential drill-runners.

Participants for the programme were drawn from the core of drill-helpers who are normally employed on the Commission's drilling operations. The basic aim of the training programme was to enhance the theoretical and practical knowledge of the drill-helpers with a view towards the upgrading of their skills to the level of drill-runners.

The duration of the training programme was nineteen (19) days and consisted of a series of lectures and practical sessions. Included in the lectures were topics such as:

- i) The classification and identification of rocks;
- ii) The properties of rocks with respect to drilling;
- iii) Drilling tools, and
- iv) Safety and proper work habits

The practical sessions highlighted the following:

- i) Identification, selection and uses of drilling tools and equipment.
- ii) Special drilling techniques.
- iii) Dry and wet borehole sampling.
- iv) The operation and servicing of drilling and drilling support equipment, and
- v) Setting-up dismantling operations.

Resource personnel for the training programme were drawn entirely from the staff of the Commission and included mining engineers, geologists and mining drillers. Thirteen (13) drill-helpers participated in the programme. The theoretical sessions and lectures were conducted at the offices of the Commission whilst the practical drilling sessions were done at a nearby field.

### 3:3 Lapidary

During 1987, the Lapidary continued to be managed by the Manager of the Mines Division. Lapidary Staff, which totaled thirteen (13) was supervised by a Senior Lapidary Technician.

#### *Production*

Based on the available resources of the Lapidary, production can be considered good. Among the twenty-seven (27) different artifacts produced for the local market were two hundred and fifty five (255) agate clock faces, one hundred and eighty four (184) clock stands, two hundred and fifty eight (258) paper weights, two hundred and thirty five (235) oval cabochons, and one hundred and eleven (111) Maps of Guyana with map stands. A number of special order artifacts were also produced, among them were one (1) pair of agate earrings, one (1) glass base, two (2) egg bases and one mug rest.

During 1987, the Lapidary also fulfilled an export order for slabbed and squared agate of the fire and banded varieties, along with a quantity of rough agate. It is anticipated that the efforts made towards the expansion of this market will bear-fruit and 1988 promises to be a good year for the export of this lapidary product.

#### *Sales*

The lapidary recorded local sales totaling over two hundred and eighteen thousand dollars \$218,000.00. This figure exceeded that of the previous year by thirteen percent (13%). This increase was largely due to the increased number of special orders from local government and diplomatic agencies. The value of the export order was eighty five thousand Guyana dollars (G\$85,000.00). The Lapidary achieved both its local and foreign sales target for the year.

#### *Others*

A pioneering study of the technical and economic feasibility of expansion of the Lapidary was completed during the second quarter of 1987. The study included time-motion studies of the Lapidary operations and analysis of the direction lapidary development in Guyana should take. During 1987, the Lapidary also participated in two (2) local exhibitions.

### **3.4 Research Projects and Mining Studies**

#### *Mineral Processing Research Institution*

A bench-mark study on the need for a mineral processing research facility for Guyana was completed during the second half of 1987. The study examined the concept of the proposed facility and the current local infrastructure that would be a necessary part of the institution. The role such a facility would play in the development of Guyana's mineral resources is a major feature of the report. The unit sections of the proposed facility are discussed in detail and the need for an inter-relation between each unit section are also examined. The report suggests an area for priority research and arguments in support of this suggestion are cited. The report also suggests a management approach for the proposed institution which, it is argued, would minimize the duplicity of costly resources. This report will form the basis for requests for funding of appropriate research facilities in the area of mineral processing.

### *Beach Sands for Water Filtration*

A study of the filter sand needs of the nation's capital water treatment system was undertaken during 1987. Areas of deposits of sand along the coast-line and river banks were identified and post hole samples taken. The samples were sent to the University of Guyana Civil Engineering Laboratory (Soils) for analysis and determination of their physical properties.

Filter sands are used extensively in the water purification process and a periodic replenishing of the fine sand fraction is required. In 1987, the Georgetown Sewerage and Water Commission (GSWC) required 1,000 tons of fine sand, and this research project was undertaken to assess the possibility of import substitution.

Analysis of the coastline and riverain samples revealed that there are areas of deposits of sand with specifications similar to those of the sand currently used by the Georgetown Sewerage and Water Commission. The best sand was, deemed unsuitable by the Georgetown Sewerage and Water Commission for the following reasons:

- i) The sands were too fine, i.e. its effective size was too low,
- ii) The grains of sands were too friable, which rendered the sand unsuitable for the turbulent conditions that prevail in the filters.

Unfortunately, Georgetown Sewerage and Water Commission as not in a position to provide the technical specifications on the friability of sands currently used in their filters and as a consequence, the filter sands research project has been expanded to determine these specifications. The effective size of the sand can be increased by screening out the finer fractions and the suitability of local sands will be determined after their friability characteristics have been established.

### *Dimension Stone*

A study of the dimension stone possibilities of the dark coloured rocks of central Guyana, was started during 1987. Samples of the rocks are presently being prepared for analyses according to procedures established by the ASTM and results are expected by the first quarter of 1988. The analyses will be done by the Civil Engineering Department of the Faculty of Technology, University of Guyana.

Quantitative assessment of reserves of suitable stone and petrographic tests on samples of these rocks are scheduled to commence after the analyses by the University, and be completed by the end of 1988.

### *Others*

Detailed project proposals were prepared for research in the following areas:-

- i) The design of a sampling system for submerged unconsolidated deposits.
- ii) The design of a sampling system for rapid assessment of alluvial reserves.
- iii) A study to facilitate the improvement of the excavation and processing capabilities of the small land based gold mining operation and if necessary to design, build and test a portable gold processing plant suitable for same.
- iv) A study to facilitate the development of an alternative energy system for small-scale land and river operations. Unfortunately, the paucity of suitable locally available data prevented the literature research phase of these projects from being completed on schedule. Relevant data and information are still being awaited from overseas sources. Research efforts have also been delayed as a result of the on-going field duties of the principal research officers.

## **3.5 Mines Inspectorate Division**

### *Introduction*

Throughout the year, positive efforts were made by the Inspectorate Division to maintain its presence in mining areas in keeping with its role of servicing the mining sector. To this end, additional field staff was recruited and their deployment to new mining stations afforded wider coverage of activities without de-emphasizing the monitoring of areas of more intense mining.

The average period spent at out-stations by field officers was four (4) months. Despite the obvious concentration on the monitoring of the areas of built-up mining activities, periodic visits were also made to other locations. Out-stations may well have been manned for longer periods, had it not been for the incidence of malaria, which severely affected field personnel and mining activities.

### *Staffing*

Relief in this regard, with the recruitment of both field and office staff, was indeed heartening to the Inspectorate Division. However, because of the momentum the mining industry recently gained in terms of local as well as foreign involvement, the need for further recruitment of field personnel is envisaged. In addition, auxiliary staff such as

steersmen and bowmen, of which there is a drought presently, would need to be recruited.

**Current Staff and Existing Vacancies**

<b><u>Position</u></b>	<b><u>Requirement</u></b>	<b><u>Vacancy Filled</u></b>	<b><u>Positions</u></b>	<b><u>Officer</u></b>
C.M.O	One (1)	Nil	One (1)	R. Henry
D.C.M.O	One (1)	Nil	One (1)	K. DeFlorimonte
S.M.O	Two (2)	Nil	Two (2)	I. Smith
M.O.'s	Six (6)	One (1)	Five(5)	S. Persaud L. Butters H. Ramkhelawan C.A. Robinson W. Alleyne
A.M.O	Eight (8)	Three	Five (5)	M. Persaud T. Reid Mata Persaud G. Squires D. Loy
Snr. Ranger	Two (2)	One (1)	One (1)	N. Bourne
Ranger	Six (6)	Two (2)	Four (4)	S. Branford D. Garraway G. Smith C. Bradford
Female Searcher	One (1)	Nil	One (1)	-
Steersmen	Eight (8)	Nil	Eight (8)	P. Agrippa M. Wilson B. Ramsamujh
Boathands	Nil		-	
Clerk 111				
Clerk 11	Three (3)	Two (2)	One (1)	D. Persaud
Typist Clerk	Two (2)	One (1)	One (1)	S. Dannett
Records Clerk	Two (2)	Nil	Two (2)	H. Gilkes P. Luke

The following tables show half-yearly allocations inclusive of Special Tours made by the various Field Officers for the year.

**Allocations/Special Tours**  
**January to June, 1987**

<b><u>Stations</u></b>	<b><u>M.d. #</u></b>	<b><u>Officer</u></b>	<b><u>Designation</u></b>	<b><u>Period</u></b>
Bartica/Cuyuni	3 & 4	T. Reid	A.M.O	-
Bartica	3	C. Bradford	Female Searcher	-
North West Dist.	5	J. Morgan	S.M.O	Jan 29 -May 15
		S. DeYoung	Ranger	- do -

Allocations/Special Tours Cont'd  
January - June 1987

<u>Stations</u>	<u>M.d. #</u>	<u>Officer</u>	<u>Designation</u>	<u>Period</u>
Ya-Ya, Essequibo	2	I. Smith	S.M.O	May 12 -June 3
Sherima	3	K. Branford	Ranger	Mar 15 -May 16
		C. Bradford	Female Searcher	- do -
Kurupung	3	M. Persaud	A.M.O	Feb 27 - May 30
		N. Bourne	Snr Ranger	stationed
Tiboku/Kaburi, Mazaruni River	3	C. Robinson	M.O.	Feb 2 - Jun 5
Upper Maz./Upper Cuyuni	3 & 4	L. Butters	M.O	Mar 7 - Jun 6
Kuribrong	2	S. DeYoung	Ranger	June 16 - 26
42 Miles Issano	3	C. Robinson	M.O	Jun 28 - Jul 13
- do -	3	L. Butters	M.O	Jun 12 - 30
- do -	3	I. Smith	S.M.O	Jan 19 - 26
Ya-Ya, Essequibo River	2	I. Smith	S.M.O	Mar 21 - 26
		K. DeFlorimonte	D.C.M.O	Mar 21 - 23
Sherima/Bartica/ Marshall Great Falls, Dem. River	3	- do -	- do -	
Pott Falls, Essequibo River	2	S. Persaud	M.O	June 20 - 21
Mapari, Rupununi	6	R. Henry	C.M.O	April 3 - 6
	6	S. Persaud	M.O	April 12 - 21

July - December, 1987

Bartica	3	T. Reid	A.M.O	Jul 1 - Oct 22
		Mata Persaud	-do-	Oct 23 - Dec 31
		C. Bradford	Female Searcher	Entire period
North West Dis.	5	I. Smith	S.M.O	Dec 9 - 15
		T. Reid	A.M.O	-do-
Ya-Ya, Essequibo River	2	I. Smith	S.M.O	Dec 9 - 15
		T. Reid	A.M.O	-do-
Upper Maz. Upper Cuyuni	3 & 4	L. Butters	M.O	
Konawaruk	2	K. Branford	Ranger	Aug 15-Dec 13
Appaparu	2	G. Squires	A.M.O	Oct 7 - Dec 13
14 Miles Kaburu	3	G. Garraway	Ranger	Sep 12-Dec 17
Puruni	3	G. Smith	-do-	Sep 12-Nov 24



<u>Stations</u>	<u>M.d. #</u>	<u>Officer</u>	<u>Designation</u>	<u>Period</u>
Akaiwana	6	S. DeYoung	-do-	Aug 3-Dec 14
Potaro/Kuribrong	2	H. Ramkhelawan D. Loy	M.O A.M.O	Oct 19-Dec 11 -do-
Marudi Mountain	6	Mohan Persaud	A.M.O	Dec 3 - 15
Mid Maz/Potaro	3 & 2	- do -	A.M.O	Oct 8 - 21
Puruni	3	C. Robinson	M.O	Oct 21 - Nov 11
Appararu	2	I. Smith	S.M.O	Nov 16 - 17

### Appointments/Resignations

The following seven officers were appointed:

<u>Name</u>	<u>Designation</u>	<u>Date</u>
Wendell Alleyne	Mines Officer	July 1, 1987
Deryck Loy	Asst. Mines Officer	Sept.1, 1987
Gavin Squires	- do -	- do -
Mata Persaud	- do -	July 1, 1987
David Garraway	Ranger	Aug 3, 1987
Gilbert Smith	- do -	- do -
Hazel Gilkes	Records Clerk	Oct 12, 1987

Comrade Anthony Motayne was appointed Mines Officer on June 1, 1987, but he resigned on June 11, 1987.

### **Dredge Licences and Dredge Review**

The total number of dredges registered with the Commission, up to December 31, was five hundred and fourteen (514); one hundred and nine (109) of which were new registrations. An estimated three hundred and thirty registrations represent a 67% increase on last year's figure, thus emphasizing the attraction that dredging continues to enjoy in the local mining industry.

A comparison of the distribution of the dredges for 1986 and 1987, with respect to their sizes and systems used, is shown in Appendix 1. It will be observed that the latter reflects a definite increase in gravel pumps and particularly those within the 6" - 10" category. On the other hand, Couple Jets, is apparently being phased out in the higher

category, but is increasing in the lower category.

Contrary to what obtained in 1986, there was no biannual dredge review for 1987. Legislation in October, 1986 precluded this, since therein, it was stipulated that licences would only be renewed subsequent upon the owner's application and the Commissioner's sanction in the succeeding year. Of principal concern to the Commission, would be the declared production of the owners as against the fuel received. The submission of operational reports by those who have not attained an accepted level of production would be a requirement prior to re-licensing.

### **Price Increase for Gold**

As a consequence of the devaluation of the Guyana dollar in mid-January, 1987, it became the general consensus of the mining sector that the price then payable by the Guyana Gold Board was unrealistic. The price was then calculated at 14 times the Second London Daily Fixed price or approximately \$6,000.00 (Guy) per ounce of gold.

However, subsequent negotiations for an increase made by the Guyana Gold and Diamond Miners' Association, on their behalf, did not bear fruit until September 14, 1987. Commencing on that date, the price of gold was increased to approximately G\$10,000.00 or twenty one (21) times the Second London Daily Fixed price.

No fixed date for a review of the price was stipulated by the Government, but their intimation was that this is possible. The new price, however, remained in force until the end of the year.

### **Moratorium**

Simultaneously with the announcement of the price increase for gold, a moratorium was also declared. This was meant to afford all persons in illegal possession of raw gold, the opportunity of declaring same for sale to the Guyana Gold Board without fear of prosecution. The normal procedure, pertaining to documents etc., was waived. The duration was from September 14 to December 31. This decision was no doubt prompted by the positive response received during the moratorium of 1986.

### **Gold and Diamond Declaration/Royalty**

#### ***Gold***

Declared production for 1987 was 21,424 ozs. This figure by far surpassed that of 1986 to the tune of 52 percent. In addition, ever since 1955, this was the first time that the 20,000 ounce mark was exceeded. Since the target set at the beginning of the year

was 25,000 ounces, this figure therefore represents an achievement of 85 percent of the target.

Of the total declared production, 8,469 ounces and 12,955 ounces were declared for the first and second half of the year respectively. Comparatively for the corresponding periods for 1986, it showed a significant increase. See Appendix 2. One contributory factor could be P. Pereira's acquisition of gold claim "Return" at 42 Miles Issano Road and the subsequent efficient way in which he exploited same. Production won from the claim during the second half of the year was approximately 3,000 ounces. Royalty collected on Gold for the year was \$8,653,678.86.

### ***Diamonds***

Unlike gold, Diamond production for 1987, fell from 9,142 carats in 1986 to 7,287 carats. This represents a percentage drop of 20.3 when compared with 1986. Three thousand, three hundred and thirty four (3,334) carats and 3,952 carats were declared for the first and second half of the year respectively. See **Appendix 3** for comparison. Royalty collected on diamonds for the year was \$73,435.64.

### **Mineral Exploitation**

Throughout the year, no significant change to the methods of extraction of both gold and diamonds was evidenced. Once again suction dredging was used for river operations and group-slucing, quartz-milling and hydraulicing were used for land operations. What was noticeable, however, was that some operations opted for bigger and hence more powerful equipment. In the case of dredging, the diameter of suction nozzles was increased to as much as 10", while the replacement of the couple jet system by the gravel pump system, continued apace. Land operations were enhanced by the introduction of hynacs/backhoes, bulldozers and gravel pumps.

### **River Operations**

The rivers that were heavily worked for the year were the Essequibo, Potaro, Konawaruk, Mazaruni, Ekereku and Kuribrong. Some amount of work was however done in the Cuyuni, Siparuni, Morabisi, Kaburi and Demerara Rivers. The heaviest concentration of dredges was found in the Essequibo, Konawaruk and Mazaruni Rivers. Then forecast of the previous year, with respect to an increase in the level of activity in the Kuribrong, did not materialize. Towards the end of June, claim held by J. Fitzpatrick, which seemed to be the main attraction were placed under a Cease Work Order and were not released until October 23, 1987.

The Essequibo River between Ya-Ya landing and the Potaro mouth was the scene of great activity during the first half of the year, but the second half showed a decline.

Contributory factors included the quest for more lucrative work-grounds, with nearby Konawaruk River as the main attraction, and claim holders' reluctance to sublet their claims in large numbers. Particularly on account of the latter reason, the State Mining Reserve in the vicinity of Kumaka Hole, though far from being the most productive area, continued to offer refuge to a number of operations. Other claims worked were those held by S. Jardine, D. Fiedtkou, Joe Vieira and P. Pereira.

Continuing above Potaro mouth and extending as far as Siparuni mouth, some amount of dredging was attempted, but with minimal success, during the second half of the year. This was all done on state Reserves in the vicinity of Konawaruk mouth and between Siparuni and Itaname Falls. On the latter reserve, J.& R. Company worked firstly under an Exclusive Permission over part of the area then subsequently under a signed agreement. However, they closed operations at the end of October when the area did not yield as they expected.

In terms of production, the Essequibo River maintained a reasonable level particularly on account of S. Jardine's claims immediately below Omai. Once again, Jardine and N. DeSantos, chief exploiters of these claims, ranked among the top dredge producers in the country.

The Konawaruk River, between Temple Bar and Long Falls, was a hive of dredging activity for at least two-thirds of the year. Nevertheless, it was only suited to the 6" or smaller category of dredges. This was on account of its narrowness and its sustained, low level of water due to dry weather. An estimated thirty-five dredges worked continuously in this area. The main operator and fore-runner to all the others, was E.C Vieira, who had, at most times, no fewer than six dredges in operation. Below Temple Bar up to the mouth of the Konawaruk River, a distance of two miles, only two 8" Gravel pumps operated. Production for most of the conscientious operators was good with E.C. Vieira being the most outstanding. Areas worked were the State Reserve and E. Vieira's claims, viz "Rebecca #1 and #2, the concentration being on the former.

Once again, the area of most intense activity in the Potaro River was between its mouth and Tumatumari. The claims worked were the State reserve and H. Evans' "Nora #1 - #6". Approximately, sixteen dredges operated for varying periods of the year, with fair results. Between Tumatumari Falls' Top and Tukeit, there was very little activity. Whatever work was done was concentrated on River locations, viz "Florie", "Lucky 2" by "Joy" and "J8", held by Matthew Ernest, C. Davis & D. Ramchurjee, S. Willie and W. Rambarran respectively. The first three claims are immediately above and below Kangaruma Landing, while the latter is in the vicinity of Garraway Stream Bridge. An estimated nine dredges worked and the leading producer was Compton Davis. Though no visits were made above Kaieteur Falls, it was learnt that there was a little activity towards the end of the year.

In the Kuribrong River, K. Correia and A. King continued to exploit King's claims below Mona Falls while Kay's Diamond Enterprise worked on their's in the vicinity of the mouth. Success for them was just fair. During the second quarter of the year a few dredges attempted to work J. Fitzpatrick's claims, but their efforts were aborted in June, following the imposition of a Cease Work Order on the said claims. This was not rescinded until October 23, 1987, by which time most operators had become tired of waiting and had moved. An attempt was also made by a few operators to work claims held by N. Vansluytman and W. Swain, but they were severely hampered by transportation difficulties. The crashing of the G.D.F helicopter in the Kuribrong River, while on a flight there, only compounded matters.

In the Upper Mazaruni River, there was a slight increase in activity as compared to the previous year. Between Chiti-go-Keng to Chi-Chi, sixteen dredges operated, though the area of most concentration was between Messetta Falls and Kebezik. Those dredge owners who worked most consistently, were P. James, A. Bishop and W. DeGoeas, and needless to say, they were the main producers. Claims worked were owned by S. Jardine, M.C. Correia, C. Mendonca, E. Peters, R. Corids and V. Mfacedo and the State. The State reserve, however, attracted most activity. Inadequate air transportation, the only means of transportation to the Upper Mazaruni, may well have affected the efforts of the dredge owners.

The Lower to mid-Mazaruni, as far as Semang, continued to attract dredging activity perhaps on account of its reasonably easy access either by road or river. Approximately thirty-five dredges operated for varying periods of the year, though activity was most intense between Kaburi and Semang. Production for most fair. Claims attracting most attention were M. Sears' "Junior, Junior #1 - #4" and Vangenderen's "Van #1 - #7." Others worked were owned by I. Jones, V. Daniels, D. Wilson, D. Shepherd, A. Seon, L. Obermuller, E. Wells and the State. Activity between Marshall Falls to Kaburi was minimal.

In the mid-Mazaruni between Topoko Falls and as far as Apaiqua, approximately twenty dredges operated for the year. Work was mostly done on the State Mining Reserve, immediately below Kurupung Creek. Other claims worked were those of D. Bacchus, A. Fredericks, T. Urquhart and L. Agrippa, and O. Gouveia. Gold production, was far from good for most operators. Diamond production was, however, fair for most.

In the Ekereku River, Cde. Cyrilda DeJesus continued to work her claims "CB" and "CB #1 - #7" with good results. Both gold and diamonds were realized. No doubt transportation difficulties may have been the deferent to others desirous of working there.

Though the upper reaches of the Cuyuni were not visited for the year, it is known that a few dredges operated in the Makapa area.

## **Land Operations**

Much more attention was directed this year towards the monitoring of land operations. This was made possible by the recruitment and deployment of additional field staff without having to disrupt normal visits to known areas of land mining and dredging within the various Mining Districts. In addition, five (5) State Mining Reserves were created with the intention of better controlling the working of State Lands under a pre-arranged system. It was also meant to legalize the working of small miners in areas deemed closed to prospecting and mining for which they had been clamoring for some time.

The State Mining Reserves created were as follows:-

- 1) Appaparu - encompassing the old Appaparu Mine - M.D.#2.
- 2) Konawaruk - between the bridge and Mountain Foot -M.D #2.
- 3) Puruni - encompassing Peter's Mine - M.D #3.
- 4) West Kaburi encompassing Peter's Mine - M.D #3.
- 5) Akaiwanna encompassing Peter's Mine - M.D #6

The Commission's intended method of working the Reserves was the application of the 'block-system'. This involved the division of the various Reserves by a Surveyor into equal blocks no bigger than the size of a land claim. Lines would be out to demarcate the blocks which would then be numbered. Subsequently, miners, with the approval of the Commission, would be free to prospect and identify the block of their choice. However, time and expertise only permitted the blocking out of the Akaiwanna Reserve, prior to its allocation to miners. In the case of the others, miners were nevertheless, permitted to prospect and identify areas of their choice, subsequent to which their demarcation by the Officer in charge took place.

Production from the Akaiwanna Reserve was encouraging. Approximately thirty-two ounces of gold were produced. With the exception of the West Kaburi and Puruni Reserves, which were closed in October, all others remained in existence up to the end of the year.

An area of land operation to which lots of attention was focused for the year, both by miners and the Commission, was an area popularly known as '9 Miles'. Actually, the claim attracting attention was "Return", owned by D. Manning and R. Emanuel. Controversy over imposition of a Cease Work Order on it and subsequently to its revocation, by the Commission, on June 29. Approximately 3000 ounces from it between then to the end of the year.

Other areas of traditional land mining, visited within the various Mining Districts, for at least once during the year, were as follows:-

Min. Dist. #3 - Quebenang, Chi-Chi, Meamu, Orikang, Haieka, Tacouba, Eping Mountains, 14 Miles Issano, Enachu, Kaworieng and Portang. Of these, work was most intense at Chi-Chi and Kawarieng.

Min. Dist. #4 - Kaikan

Min. Dist. #5 - Arakaka, Matthew's Ridge, 4 Miles Port Kaituma/Matthew's Ridge Railway.

Min. Dist. #6 - Maikwak.

The usual methods of extraction were employed.

### **Hydraulic**

Miners in the Arakaka/Matthew's Ridge area continued to use this system almost exclusively. A constant flow of water was essential, however, and the miners in the area were either forced to dig canals from nearby creeks or to discontinue operations for long periods during the dry weather.

### **Quartz-Milling**

The Smiths in the Barama/Yakishurlu area continued to employ this method, as they have been doing for several years. The only other users of this method, the Higginses, discontinued operations early in the year due to inefficient machinery. They operated in the Annie Creek/Arakaka area.

### **Ground Sluicing**

This is the most common method and is popular, particularly among small miners. It is relatively cheap to set up, hence the obvious attraction. Equipment used is a sluice box, built either of wood or metal. Water is supplied by a pump when available. Alternatively, water can be fed into the sluice either by a bucket or by setting the sluice in such a way that running water, controlled by man-made dams, washes freely over the gravel. This method is applicable in all Mining Districts for the extraction of both gold and diamonds.

### **Location/Registration of Claims**

A comparative statement of claims located/registered for 1986 and 1987, as shown in Appendix 4, reflects an increase of 74% on the total number of claims. Of particular note is the increase, of almost 50%, of the River locations made. This is no doubt reflective of the significant increase in dredging activity and the dredge owners'

awareness of the need to acquire their own claims for ease of work.

### **Bauxite**

Guy mine, Linden operations, continued to work the East Montgomery, North Dorabece and Kara Kara Mines, the former being State owned land and the latter two, privately held lands. A comparison of 1986 and 1987 shows that tonnage mined increased by 13 percent for 1987. See Appendix 5.

Royalty collected for 1987 was \$538,657.60.

### **Transportation**

Inadequate river, land and air transportation once again proved a hindrance to mobility by field officers with respect to river and land transportation, boats, outboard engines and, to a lesser extent, vehicles, continued to be in short supply. Hiring and borrowing of these facilities could not be avoided. Needless to say, this resulted in time loss and at times negated the element of surprise which is sometimes essential.

Air transportation was provided by G.A.C whenever possible and, invariably, with the assistance of the Regional Ministry. Otherwise, privately owned aircraft were used.

Since easy mobility directly enhances the smoothness and effectiveness of monitoring activities planned by the Inspectorate, the acquisition of these essential facilities will need to be addressed in the new year. Towards this end, it was indeed heartening, at the end of the year, when positive steps, aimed at the relief of river transportation, were taken by the Commission. Building of six (6) new boats imitated.

### **Communication (Radio)**

No relief in this regard was enjoyed by the Inspectorate for the year. Receiving sets were bought but were found to be unsuitable for use in remote interior areas. Transmitting sets were non-existent. It is hoped that this need particularly for transmitting sets, would be addressed by the Commission in the new year, so that the link between Head Office, family and Officer could be re-established.



**Appendix I**  
**Distribution of Dredges**

<u>SIZE</u>	<u>1986</u>		<u>1987</u>	
	<u>C.J.</u>	<u>G.P.</u>	<u>C.J.</u>	<u>G.P.</u>
2"	2	-	-	-
3"	3	1	3	1
4"	28	4	36	25
5"	3	1	1	4
6"	65	23	61	32
8"	21	90	13	140
10"	-	3	-	14
<b>Total</b>	<b>122</b>	<b>122</b>	<b>114</b>	<b>216</b>

Note: C.J.= Couple Jet

G.P = Gravel Pump

**Appendix 2**

**Comparative Statement of Raw Gold and Diamonds Declared  
& Royalty Paid for Period January - June, 1986 & 1987**

District	1986				1987			
	Gold		Diamonds		Gold		Diamonds	
	Ozs	Royalty	Carats	Royalty	Ozs	Royalty	Carats	Royalty
Berbice (1)	-	-	-	-	-	-	-	-
Potaro (2)	1,673	172,160.30	478.00	692.50	3,938	1,177	528.00	5,279.38
Mazaruni (3)	2,774	286,524.81	2,136	21,380.29	3,625	1,076	1,566	16,180.78
Cuyuni (4)	227	24,173.22	2,103	21,036.87	795.00	239	694.00	6,979.89
North West (5)	48	5,037.35	-	-	82.00	23	-	-
Rupununi (6)	-	-	372.00	3,739.39	29.00	8	546.00	5,463.13
<b>Total</b>	<b>4,722</b>	<b>487,895.68</b>	<b>5,089</b>	<b>50,849.05</b>	<b>8,469</b>	<b>2,525</b>	<b>3,334</b>	<b>33,903.13</b>

**Appendix 3: Comparative Statement of raw gold and diamonds declared and royalty paid for the period July-December, 1986 & 1987**

DISTRICTS	1986				1987			
	GOLD Ozs	ROYALTY	DIAMONDS Carats	ROYALTY	GOLD Ozs	ROYALTY	DIAMONDS Carats	ROYALTY
Berbice (1)	2	420.35	-	-	-	-	-	-
Potaro (2)	3,849	1,063,993.60	387.00	3,889.30	5,277	2,440	627	6,278.00
Mazaruni (3)	4,680	1,228,971.70	1,919	14,211.61	6,933	3,355	2,498	24,978.96
Cuyuni (4)	682	186,446.25	1,155	11,579.38	511.00	229	319	3,198.62
North West (5)	83	24,050.75	-	-	148.00	61	-	-
Rupununi (6)	12	3,568.02	592.00	5,948.76	86.00	40	508	5,076.88
<b>Total</b>	<b>9,308</b>	<b>2,507,450.67</b>	<b>4,053</b>	<b>35,629.13</b>	<b>12,955</b>	<b>6,128</b>	<b>3,952</b>	<b>39,532.46</b>

**Appendix 4: Comparative Statement of Claims located/registered for 1986 and 1987**

DISTRICT	1986				1987				TOTAL
	GOLD	P/S	GOLD & P/S	RIVER	GOLD	P/S	GOLD	RIVER	
1	-	2	2	24	1	-	-	-	-
2	41	16	11	85	175	54	69	222	520
3	42	51	55	134	37	52	112	82	283
4	14	19	10	75	42	12	56	40	150
5	40	-	1	11	108	-	15	79	202
6	-	70	32	43	13	50	6	131	200
<b>TOTAL</b>	<b>137</b>	<b>158</b>	<b>111</b>	<b>372</b>	<b>375</b>	<b>168</b>	<b>258</b>	<b>554</b>	<b>1,355</b>

## Appendix 5

### A comparative statement of tonnage mined and Paid by Guymine, Linden Operations, for 1986 & 1987

Months	State Lands	Private Lands	Total Mined	Total Royalty	Private Lands	Total Mined	Total Royalty
January	54,736	54,490	109,226	43,690.40	47,523	100,544	40,217.60
February	37,197	37,918	75,115	30,046.00	58,589	109,934	43,973.60
March	34,910	43,916	78,826	31,530.40	51,151	101,863	40,745.20
April	42,251	27,804	70,055	28,022.00	54,237	111,726	44,690.40
May	-	-	97,101	38,840.40	64,138	150,870	60,348.00
June	37,993	51,921	89,914	35,965.60	55,221	112,248	44,899.20
July	64,205	32,801	97,006	38,802.40	52,078	104,471	41,788.40
August	60,521	56,718	117,239	46,895.60	57,033	127,507	51,002.80
September	63,262	64,881	128,144	51,257.60	52,143	122,656	49,062.40
October	47,994	53,776	101,770	40,708.00	58,928	103,021	41,208.40
November	46,398	62,738	109,136	43,654.40	49,539	99,880	39,952.00
December	51,036	62,527	113,563	45,654.40	62,003	101,924	40,769.60
Totals	-	-	1,187,095	474,838.0	662,583	1,346,644	538,657.60

#### 4. **ADMINISTRATIVE DIVISION**

##### 4:1 **Personnel & Industrial Relations Department**

###### *Workshop*

A Workshop on Small Scale Mining and Precious Minerals in a Superficial Environment sponsored by the Commission was held in early January. A cross-section of persons from the Mining Industry attended this Workshop.

###### *Medical Scheme*

The implementation of a Medical Scheme had to be shelved because the devaluation of the Guyana dollar (has) affected the costing of the scheme. A reassessment of the entire scheme will have to be done and a new costing arrived at.

### *Computer Facilities*

Computer facilities were installed, and Comrade Rajkumarie Karamat, Secretary, Personnel and Industrial Relations Department was transferred to the Computer Room, to work along with, Comrade Margaret Shaw, who was employed as a Consultant.

### *Welfare*

Efforts were made to improve (the) employees' welfare within the Commission. The Board approved expenditure in the sum of \$19,040.00 for the provision of uniforms for female staff. This sum represented two-thirds of actual cost of the uniforms for female staff. This sum represented two-thirds of the actual cost of the uniform and the female employees gladly met the remaining one-third of the cost. The smartly attired females, who began wearing their uniforms on 1st June, certainly presented a better image to the Public.

The Security staff, as well as the Office Assistants were also provided with uniforms and where procurement proved to be difficult for all other staff entitled to this benefit,, cash-in-lieu of uniforms was paid.

The Commission's Canteen was opened on 1st August, and was staffed by a total of three persons - a canteen supervisor and two assistants who were charged with the responsibility of providing low-cost meals to the employees.

### *Wages and Salary Agreement*

Implementation of Government/Trade Union Congress Wages and Salary Agreement was effected and workers received their retroactive pay with minimum of problems, since all activities were carried out strictly on the basis of the guidelines issued by the Public Service Ministry's.

### *Eighth Anniversary Celebrations*

The opening of the Canteen coincided with the Commission's Eight Anniversary Celebrations for which a day of activities was planned. Apart from a dominoes competition and other sports there was the presentation of the Bursary Awards. Three monetary awards in the sum of two hundred and fifty dollars (\$250.00) each were given to Misses Natasha Ghansam, Shaleena Alli and Master Sydney DeYoung (Jr.), children of Mr. Jagdeo Ghansam, Geologist, Asheek Alli, Technical Assistant 1 and Sydney DeYoung, Senior Ranger, respectively.

Employees who attended the day's function which was chaired by Comrade Kenneth Bancroft, Chairman of the Commission, were treated to lunch and snacks prepared by the staff of the Canteen. Comrade William Woolford who was acting as

Commissioner vice Comrade G. Walrond who was abroad, gave a talk addressed to the recipients of the awards.

#### *Work Study Programme*

Ten students from several Secondary Schools around Georgetown participated in a two-months Work-Study Programme during the Summer vacation and were attached to various sections within the Commission. The programme was a success and students were paid a stipend at the end of their attachment. Two of the students gained employment with the organization upon obtaining the required passes at the G.C.E and C.X.C examinations whilst one other was temporarily employed vice an employee who was on leave.

#### *Annual Performance Appraisal*

The Annual Performance Appraisal exercise was completed, with a total of one hundred and eighty-four (184) employees being assessed.

#### *Guest House*

Operations at the Guyana Geology and Mines Commission's Guest House ceased in February. The personnel who were employed there proceeded on annual leave prior to their transfer to the Guyana Geology and Mines Commission's Canteen which will be opened shortly.

#### *Assignment of Security Personnel*

Assignment of Security Personnel to the Omai and Dickman's Hill operations continued throughout this period.

#### *Christmas Party*

The Organisation's Annual Christmas Party was held on 18th December at the Water Chris Ballroom. (The total expenditure incurred was twenty-five thousand, two hundred and eight dollars and seventy-four cents (\$25,208.74).

#### *Training*

A seminar on the "use, care and maintenance of Laboratory instruments and glassware" conducted by the Institute of Adult and Continuing Education (IACE) from April 13 - 24, was attended by Comrades G. Singh, D. Singh and L. Thomas, Laboratory Assistants and by Comrade Leslie Thomas from November 9 to November 27, 1987.

A training session was held for all Registry Staff and Records Clerks on the afternoons of June 12<sup>th</sup> and 19<sup>th</sup>.

A Drilling Training Programme was conducted by the Engineers and Drillers of the Guyana Geology and Mines Commission from May 27, to June 22, for members of the drilling crew, (with an aim of up-grading skills to an acceptable level).

A Training Course in Cartography sponsored by the United Nations Development Programme and held in the United States of America, from March to June, 1987 was attended by Comrade Hansraj Makardajh, Cartographic Supervisor.

Comrades C. Aaron and J. Primo attended an Office Assistants Seminar in March and June respectively. These seminars were sponsored by the Public Service Ministry.

Comrade Kampta Persaud, Senior Geologist II attended a Workshop at the Exploration '87 Geochemical Field School, Ontario, Canada from September 13<sup>th</sup> to 26<sup>th</sup>.

The Third Decennial Conference on Geophysics and Geochemistry held in Toronto, Canada from September 27, to October 1 was attended by Comrades G. Walrond, Commissioner and K. Persaud, Senior Geologist II.

All staff from the Lapidary section and a number of students from Beterverwagting Community High School attended a nine (9) weeks Lapidary Training Course at the Guyana Geology and Mines Commission from July 20 to September 17.

Comrade Edward Hopkinson, Director (Other Minerals Unit) attended an IDRC sponsored programme on Market Study of Guyana's White Sand from 1<sup>st</sup> - 31<sup>st</sup> October in Canada.

Comrade Karen Livan departed for Cambourne School of Mines, England to undergo a one year programme leading to an MSc in Mining Geology.

Comrade Jacqueline Vieira commenced a one-year, part-time course at the University of Guyana on Techniques in Geography.

### Acting Appointments

<b>Names</b>	<b>Designation</b>	<b>Acting</b>	<b>From</b>	<b>To</b>
		<b>Appointments</b>		
L. Dhanraj	Typist Clerk II	Secretary	18/03/87	19/07/87
P. Leitch	Office Assistant	Typist Clerk II	11/02/87	31/05/87
L. Garnett	Personnel Office	Asst Manager (P. & I. R.)	1/01/87	-
G. McFarlane	Clerk III	Chief Clerk	1/01/87	-
C. Teixeira	Chief Clerk	Assistant Manager (Services)	1/01/87	31/03/87
H. Makardajh	Draughtsman	Carto. Supervisor	1/01/87	31/03/87
K. Livan	Senior Geologist II	Manager (G.S)	4/05/87	-
P. Luke	Typist Clerk II	Clerk III	11/02/87	12/09/87
W. Woolford	Manager	Commissioner	13/07/87	12/09/87
S. Edwards	Snr. Engineer I	Manager (Mines)	13/07/87	12/09/87
K. Persaud	Snr. Geol. II	Manager (G.S)	13/07/87	12/09/87
L. Butters	Mines Officer	Snr. Mines Officer	01/10/87	24/12/87

### Promotions

<b>Names</b>	<b>New Designation</b>	<b>Effective Date</b>
Clarice Teixeira	Assistant Manager (Services)	1/04/87
Hansraj Makardajh	Carto Supervisor	1/04/87
Vernel Chisholm	Tradesman III	1/06/87
Wendy Gray	Clerk III (Accounts)	1/04/87
Sandra Persaud	" "	1/04/87

**Promotions cont'd**

<b>Names</b>	<b>New Designation</b>	<b>Effective Date</b>
Karen Nestor	Clerk 111(Accounts)	1/04/87
Paul Lord	Assistant Purchasing Officer	1/05/87
Sookdai Sookraj	Secretary I	1/04/87
Dawn Budhan	Senior Assistant Draughtsman	1/06/87
Joselyn Grimmond	Assistant Draughtsman	1/06/87
Clairmonte Nedd	Tradesman III	6/11/87
Leslie Scott	Driver	9/11/87
Devdatt Persaud	Mining Technology I	1/06/87

**Appointments**

<b><u>Names</u></b>	<b><u>Designation</u></b>	<b><u>Effective Date</u></b>
G. Hughes	Canteen Supervisor	06/08/87
J. Sandiford	Canteen Assistant	10/08/87
K. Hughes	" "	06/08/87
D. Forris	Canteen Attendant	07/09/87
W. Alleyne	Mines Officer	01/07/87
Mata Persaud	Assistant Mines Officer	01/07/87
B. Semple	Field Assistant Trainee	15/07/87
P. Garnett	Cleaner	07/08/87
G. Smith	Temporary Ranger	03/08/87



D. Garraway	" "	03/08/87
G. Mangra	Security Guard	12/08/87
D. Loy	Assistant Mines Officer	01/09/87
G. Squires	" " "	01/09/87
T. Moore	Apprentice Draughtsman	19/10/87
R. Smith	" "	19/10/87
D. Farnum	" "	10/12/87
G. Persaud	Gardener	13/10/87
N. Proffith	Laboratory Attendant	05/10/87
T. Duke	" Assistant	01/10/87
H. Gilkes	Clerk III (Records)	12/10/87
S. Montouth	Lapidary Attendant	01/10/87
J. Greene	" "	16/11/87
G. Jaspar	" "	16/11/87
S. Richmond	Laboratory Assistant	01/10/87
N. Trelfall	Temp. Diamond Valuator	01/12/87

### **Terminations**

<b>Names</b>	<b>Designations</b>	<b>Effective Date</b>
S. MacDonald	Security Guard	01/01/87
T.A. Singh	Draughtsman	01/02/87
J. Sandiford	Assistant Caretaker	30/03/87
A. Harry	Stores Porter	11/03/87
R. Singh	Security Guard	01/03/87
T. Sarjoo	Gardener	25/03/87
J. Jones	Lapidary Attendant	04/87
H. Klass	Driver	09/04/87
C. Albert	Driver	09/04/87
R. Baveghems	Lapidary Attendant	27/03/87
C. Jones	Security Guard	24/04/87
M. Hamer	Clerk III	06/05/87
P. Krishna	Field Asst. Trainee	01/05/87
A. Shivdayal	" "	31/05/87
A. Motayne	Mines Officer	11/06/87
R. Khan	Welder	30/06/87
M. Persaud	Manager (Geol. Servs.)	13/07/87
E. Wood	Field Assistant	03/07/87
R. Sinclair	Security Guard	19/07/87
S. DaSilva	Stores Clerk	27/07/87

<b>Names</b>	<b>Designations</b>	<b>Effective Date</b>
H.. Makardajh	Cartographic Supervisor	13/07/87
V. Rambharose	Lapidary Attendant	26/09/87
Y. Wilson	" "	31/08/87
D. Singh	Laboratory Assistant	01/10/87
L. Halls	Legal Officer/Secretary	10/10/87
G. Williams	Gardener	10/10/87
J. Pollard	Security Guard	1987
T. Welch	Assistant Mechanic	31/10/87
D. Chase	Tradesman I	29/10/87
S. Richmond	Laboratory Assistant	25/11/87
G. Haynes	Mining Engineer	30/11/87
D. George	Accounts Clerk	26/10/87
H. Mohabir	Surveyor	13/11/87
V. Harpal	Geologist	01/12/87
B. Nwobosi	Scientific Assistant	14/12/87

## **Staff List - 1987**

### **CHAIRMAN'S OFFICE**

K. Bancroft  
M. Austin  
M. Rasheed

### **COMMISSIONER'S OFFICE**

G. Walrond  
J. Allen  
R. McPherson

### **PERSONNEL SECTION**

L. Garnett  
R. Karamat  
A. Vieira  
H. Welch

### **REGISTRY**

G. MacFarlane  
G. Lord  
L. Dhanraj  
A. Mitchell  
C. Aaron  
C. Harding  
J. Primo  
P. Leitch  
H. Gill  
M. King

### **CANTEEN**

D. Forris  
G. Hughes  
K. Hughes  
J. Sandiford

### **SECURITY**

B. Telack  
A. Mohamed  
A. Nelson  
C. Daniels  
L. Hinds  
V. Waldron  
W. Scott  
R. Springer  
K. Mitchell  
G. Thom  
G. Maloney  
C. Joseph  
D. Mangra

### **INFORMATION AND PUBLICATION**

A. Phillips	I. Lowe
W. Sumner	D. Budhan
T. Moore	F. Kerr
R. Smith	A. Fraser
D. Farnum	J. Vieira
D. Kellman	L. Moe
M. Collymore	M. Mingo
J. Grimmond	R. Narine

### **CARPENTER SHOP**

V. Marks	N. Barnes
E. Crum-E-Wing	W. Lord
G. Daniels	O. King
T. Hemraj	J. McIntyre
G. Boyce	G. Persaud

**LEGAL OFFICER/SECRETARY**

N. Newark

**LIBRARY**

M. Hope

G. Barkoye

D. Bobb

**SERVICES**

C. Teixeira

C. Blackman

R. Harte

H. Jules

I. Thompson

M. Forte

P. Garnett

C. Nedd

J. Chance

C. Ferdinand

C. Ralph

Y. Dyer

J. Darlington

**INTERNAL AUDIT**

F. Razack

T. McKenzie

**CHEMICAL LABORATORY**

K. Sukhdeo

N. Proffith

A. Hosannah

J. Layne

H. Bharat

G. Singh

C. Thompson

T. Duke

T. Persaud

T. Persaud

J.N. Singh

G. Nieuenkirk

V. Persaud

R. Adams

**MECHANIC SHOP**

L. Walrond

H. Baird

N. Musa

L. Scott

G. Johnson

B. Moore

M. Benjamin

M. Taylor

L. Hughes

W. Noble

T. St. Hill

V. Chisholm

M. Benjamin

**STORES**

C. Patterson

M. Freeman

N. Danjou

P. Moore

**PETROLOGICAL LABORATORY**

S. Narain C. Rambali

S. Kumar

**GEOLOGICAL SERVICES**

K. Livan

K. Persaud

J. Ghansam

R. Elliott

R. Vieira

B. Semple

R. Ragnanan

**MINES ADMINISTRATION**

R. Henry	D. Persaud
B. Ramsamujh	G. Smith
P. Agrippa	B. Ramsamujh
M. Wilson	P. Agrippa
D. Dannett	M. Wilson
P. Luke	D. Danett
H. Gilkes	P. Luke
K. DeFlorimonte	H. Gilkes
J. Morgan	K. Bradford
I. Smith	N. Bourne
L. Butters	N. Trelfall
S. Persaud	D. Garraway
M. Persaud	M. Persaud
W. Alleyne	C. Robinson
T. Reid	D. Loy
H. Ramkhelawan	

**ACCOUNTS**

R. Foster  
 A. Baird  
 G. France  
 M. Meredith  
 S. Persaud  
 W. Gray  
 K. Nestor  
 J. Carter  
 M. MacDonald  
 L. Murray  
 T. Singh  
 P. Warner  
 N. Brijmohan  
 H. Moore  
 C. Roberts  
 P. Lord

**OTHER MINERALS UNIT**

E. Hopkinson

**MINES**

W. Woolford	B. O'Selmo
S. Edwards	R. Squires
G. Best	R. Glasgow
E. Henry	C. Amos
S. Ghanie	G. Gaspar
J. Greene	G. Stuart
R. Austin	S. Sookraj
J. Mortley	D. Persaud
S. Munroe	

**LAPIDARY**

A. Alli  
 G. Holland  
 G. Taylor  
 R. Best  
 S. Montouth  
 D Baird  
 B. Fontanelle  
 J. Young  
 A. Beaton  
 C. Martin

4:2 **Information and Publications Division**

Two Apprentice Draughtsmen were recruited and two other members of Drawing Office staff were promoted to Assistant Draughtsman and Senior Assistant Draughtsman, respectively.

Two vacancies occurred during the year affecting the Work Programme and Personal Emoluments projections for the Drawing Office. They are: Draughtsman 1 from February, and Cartographic Supervisor 1 from June. No suitable candidate applied when the former post was advertised.

Good progress was made on the drafts for the new Geological Map of Guyana and the new Mineral Exploration Map of Guyana with corrected proofs forwarded to enable U.N to print early in the new year. MacDonald's Bulletin #38 was reprinted and by the end of the year copies were available for sale.

Copies of the Commission's 1980 Annual Report, complete with Financial Supplement, were cyclostyled.

The Mineral Investment promotion campaign had its impact by increasing activities in the Cartographic Drawing Office during the second half of the year. Increases were evident in the number of users seeking map information and requesting topographic sheets, with diazo printing services showing a 300% increase in utilization.

Advantages were taken of an opportunity afforded to the Commission to train members of the Drawing Office staff in Cartographic Mapping at the Lands and Surveys Department. Four (4) persons, including two newly recruited Apprentices, began a one-year full-time course which commenced late in the years.

*Income Generating Activities*

1. Diazo Printing: This activity raised twenty-two thousand four hundred and ninety-nine dollars (\$22,499.00) and showed accelerated activity in the second half of 1987 as follows:

<u>January to June</u>	<u>July to December</u>
\$5,708	\$16,791

2. Photo-copying:

Ten thousand, nine hundred and sixty dollars (\$10,960.00) was channelled into revenue by receipts from users of the service.

3. Sale of Technical Publications:

There was a remarkable increase over the previous year's earning. Thirty-three thousand, five hundred and seventy nine dollars and forty cents (\$33,579.40) including sixteen thousand, five hundred and twenty six dollars and ninety cents (\$16,526.90) in November alone.

The impact of accelerated demand from Golden Star Resources and other mining interests became evident from August to December. In this five month period 82% of the year's revenue was collected.

4. Supplies for Sale to Miners:

Three hundred and forty (340) "Dredge Operating and Fuel Statement" (formerly Gold Production) books were supplied to be sold to miners (\$36 each), as were twenty (20) Daily Precious Stones Transaction books (\$80 each).

A total of eleven thousand and fifty (11,050) forms in nine (9) titles specially designed for mining administration purposes and sold at \$1.00 were also produced.

*Cartographic Activities*

As the year opened, Cartographic staff were engaged in services connected with the staging of the workshop on Small Scale Mining viz. preparing banner, name tags, posters, etc.

*Geological Atlas Sheets*

This project had to be suspended from January due to the resignation of the Draughtsman. Advertisement of the post failed to attract suitably qualified candidates.

*Cartographic Supervisor*

The Assistant Manager - Information and Publications assumed first line supervision, after the departure on an attachment to U.N Cartography office of the Cartographic Supervisor in March. When the latter did not resume duty in June, the arrangement continued to year-end.

*Mineral Exploration Map*

A first draft for the new Mineral Exploration Map of Guyana was prepared and forwarded to the U.N Cartographic Office to be made ready for printing.



### *Mineral Potential Maps*

Six (6) compilations were made of portions of Guyana selected as 'mineral Potential' areas, and copies of these maps along with a Reference Map were hand-coloured for use as illustrations for draft Prospectus on Investment.

### *Mining Support Activities*

The stepping up of interest in gold mining was reflected in increased demand for mining information in particular 1:50,000 topographic sheets, of which five hundred and fifty (550) were diazo - printed. In the first half of the year, demand was for 140 and in the second half just over 400 distributed almost equally between officials of the Mines Division and members of the public including mining companies. Another area of involvement was the preparation of descriptions of individual areas applied for as exclusive permissions, several of these along with areas currently held, being plotted on 15' sheets.

Around 25 such areas were plotted on to 1:1,000,000 maps which also showed coverage of Amerindian Reservations, State Reserves and closed areas. The demand for these maps was considerably greater than capacity to supply them, owing to manpower limitations.

The same limitations prevented progress on the mapping of individuals land claims and river locations for gold and precious stones, as had been programmed. Ninety-two (92) pages containing List of Claims in existence of December 1986 were processed up to negative stage.

### *Geological Map of Guyana*

The colour proof of the new 1:000,000 Geological Map being prepared for printing at UN Cartographic Office was received. It was checked in detail and returned with the necessary changes listed.

### *Training in Cartography*

From November, Comrades T. Moore and R. Smith, newly recruited Apprentice Draughtsmen, and Comrade F. Kerr - Senior Assistant Draughtsman - reported to Lands and Surveys Department for training (one year) in Cartographic Mapping - made available through the kind courtesy of the Commissioner of Lands and Surveys. They reported to that Department on a full-time basis.

### *Printing Production Activities*

Output included the processing up to litho-printing stage of:-

1. Programme for Opening Ceremony for Workshop on small scale mining.
2. Programme for Opening Ceremony for Miners' Conference.
3. Invitation to Reception (Miners' Conference)
4. Cover and text for Bulletin # 38
5. Official Christmas Card
6. Text of Bulletin 38 (involving 52 litho plates)
7. Maps for Bulletin 38 (involving 23 litho plates)

### *Litho Printing*

Frequent power outages affected the programme limiting the number of jobs to 68. Fifteen (15) jobs completed the printing of the text (94 pages) and cover of Bulletin 38, 150 copies of which were done. Seventeen (17) of the illustration maps were completed (2594 copies). In all 96,529 forms and book pages were printed. In addition, 4030 cards and 5990 letter heads were produced. The cards included 200 stores ledger record cards and 480 map filing cards. The printing press developed minor faults which was ably repaired by the Offset Press Operator.

### *Bindery Service*

Various kinds of business books used in the Commission were assembled. (From pages printed in the printery totaling 579 books including 340 Dredge Operating and Full Statement books. Eight (8) copies of Bulletin 38 were assembled from lith-printed pages and six (6) from photo-copied pages). Other services included the making of envelopes of various sizes for cards, salaries and documents. (4024 in all compared with 1655 in 1986). In addition, forty-three (43) hard cover binding (reinforcements) were done and fifteen (15) ledgers with ruled lines made.

### *Photographic Laboratory*

The work in the Photographic Laboratory was also affected by the frequent power outages. Ninety-seven (97) jobs were executed compared with one hundred and eighty six (186) in 1986. Flats and plates (52 each) were made for Bulletin 38 text and for maps to illustrate the Bulletin (13 each). Output was 705 film and paper reproductions, along

with 126 flats and plates. The Photographic Laboratory undertook a limited amount of work for external clients.

### *Library Services*

Visitors and technical staff using the library services averaged 286 per month. They used research and reading facilities and purchased technical reports and illustrations. An average of 42 loans was made per month. G\$70,000.00 was disbursed in order to settle outstanding debts to overseas periodicals suppliers and to acquire 1987 issues. Seventy-eight (78) newly acquired publications were accessioned. Papers/reports on geology of Guyana included those authored by Richard Teeuw, C.N. Barron and R.G Elliott. Some printed lists of mining claims in existence and of mining claims surrendered were also part of the collection in the Library.

Action is being taken to up-date the price list of available publications which should be ready for issue in 1988. A record \$33,579.40 was realized from sale of maps (1323 sold) and reports (337 sold). Amounts sold were five (5) times the number of maps and reports sold in 1986. Yearly rental of photo-copying machines increased from \$1585 to \$3500 with effect from May. Cash payment from external customers totaled \$10,960.90.

For this division operational expenditure fell within budgeted estimates.

## **4.3 Services Division**

The Services Division comprised:

- (i) Carpentry Workshop and Maintenance
- (ii) Electronic Workshop and Maintenance
- (iii) Mechanic Workshop and Transport Section

This section provided common services to the various Divisions of the Commission.

It was required to:

- (i) fabricate furniture and mining accessories, repair, paint and renovate furniture and buildings;
- (ii) repair and maintain communication equipment, electrical appliances, installations, and electronic instruments;

- (iii) repair, rehabilitate and maintain all mechanical equipment and provide transport services in and around Georgetown and interior locations.

#### *Carpentry and Maintenance Workshop*

The Carpentry Workshop created history when the staff constructed the Canteen, which was the first building to be erected by them.

The Section constructed the ceiling of the Field Section and Drawing Office consecutively, saving the Commission approximately \$11,000.00.

Repairs were done to the offices of the Commissioner and his Secretary, the Mines Officers' house and fence at Bartica and the front fence of the compound.

Approximately 4 months of the year was spent on work in the Laboratories, such as building walls, cupboards, shelves, etc., U.N. Institutional Research Project.

The stairway was removed and a stump wall erected to extend the area occupied by the Confidential Secretary to the General Manager, Guyana Gold Board.

A trestle was also constructed and erected for the second overhead tank.

#### *Radio and Electronic Workshop*

The Chief Electrical Inspector, Ministry of Works carried out an inspection of the Commission's buildings, as a consequence of which, several areas were rewired upon his recommendation.

A circuit breaker was also installed for the extractor fan and furnace. Equipment electrical repairs and maintenance of electrical were done throughout the year.

#### *Mechanical Workshop*

Despite the shortage of staff in the workshop, which was due to the attachment of three mechanics to projects in the interior, the section carried out routine maintenance and repairs and overhauled and made road worthy two vehicles which were laid up for some time.

Repairs were also carried out to seven (7) outboard engines and ten (10) Power Saws (8 Stihl and 2 Tomas).

An overhead tank was fabricated to supply water to the Commissioner's Office, Canteen and Mines Building.

The Welder was also engaged in the making of grilles for windows, exhaust boxes, and tripods and in effecting body repairs to vehicles.

Chief Mechanic prepared a syllabus and put in place an apprenticeship programme.

This Section was able to fulfill most of the transportation needs of the Commission in Georgetown and its environs and for projects/expeditions in the interior.

5. **FINANCE DIVISION**

**Income**

The Commission's receipts for 1987 totaled \$16.831 M, which, when compared with the budgeted figure of \$15.444M gave a favourable variance of \$1.387M.

The receipts for the year 1987, however, included \$1.410 M which was contributed by the I.D.R.C for use in the Ceramic Raw Material Project sponsored by that body. The Commission was the local co-ordinator for the Project, and the monies received were placed in a separate bank account which showed a balance at 31st December, of \$969,867.85.

Therefore, a restatement of receipts showing locally generated funds would reflect a total of \$15.421M compared with a budgeted figure of \$14.986M. A favourable variance of \$0.435M would then be reported.

**Income to December 31, 1987**

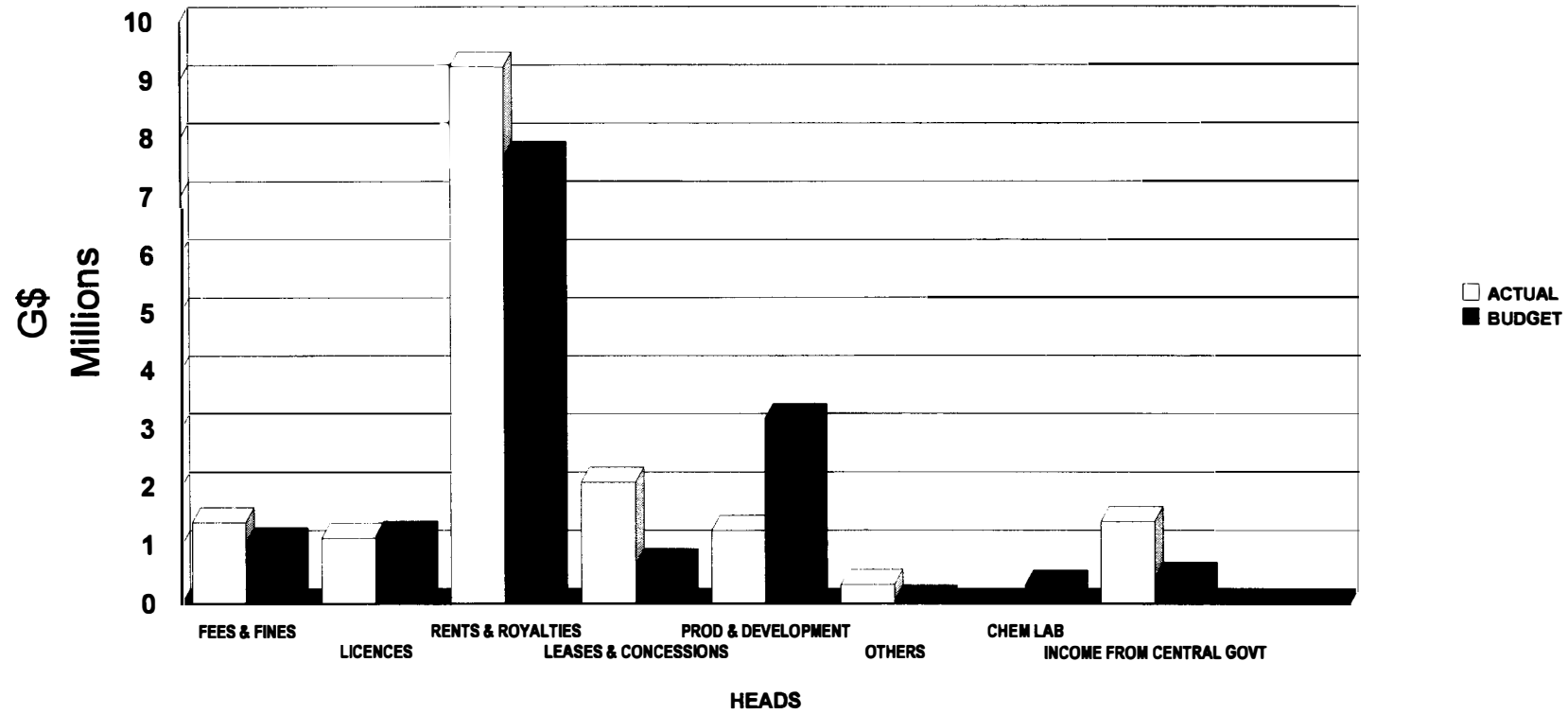
	Actual	Budget	Variance	% to total Income
	\$	\$	\$	\$
Fees, Fines etc	1,398,073	1,050,520	347,553	8.31
Licences	1,126,200	1,159,600	(33,400)	6.69
Rents, Royalty etc	9,227,330	7,687,800	1,539,530	54.82
Leases & Concessions	2,082,143	686,080	1,396,063	12.37
Prod. & Development	1,254,868	3,175,000	(1,920,132)	7.46
Others	331,892	62,000	269,892	1.97
Chem. Lab.	-	315,364	(315,364)	-
Income from Other agenc.	1,410,327	457,550	952,777	8.38
Contri. from Central Govt.	-	850,000	(850,000)	-
	-----	-----	-----	-----
	16,830,833	15,443,914	1,386,919	100
	-----	-----	-----	-----

The graph at Appendix A indicates the trend of the Commissions's revenue earnings for the year 1987, which rose sharply from September, 1987 when the price of raw burnt gold was increased.

**Expenses**

The total expenses for the year under review was \$9.557M, which when compared with the budgeted figure of \$13.285M, gave a positive variance of \$3.728M.

**APPENDIX A**  
**Income to December 31, 1987**  
**Actual -vs- Budget**



**Expenses to December 31, 1987**

	<b><u>Actual</u></b>	<b><u>Budget</u></b>	<b><u>Variance</u></b>	<b><u>% to Total</u></b>
	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>
Employment Costs	4,746,721	6,078,412	1,331,691	49.67
Ration & Supplies	212,329	436,429	224,100	2.22
Fuel & Lubricants	209,555	240,126	30,571	2.19
Maintenance & Repairs	746,949	758,502	11,553	7.82
Transportation	320,015	694,369	375,354	3.35
Projects	1,566,618	1,365,000	(201,618)	16.39
Office Supplies & Services	551,200	616,099	64,899	5.77
Other (minus depreciation)	487,459	908,831	421,372	5.10
Drilling	716,316	2,187,500	1,471,184	7.50
<hr/>				
Total Expenditure	9,557,162	13,285,268	3,728,106	100
<hr/>				
Surplus/(Deficit)				
before Deprec.	7,273,671	2,158,646	5,115,025	-
<hr/> <hr/>				

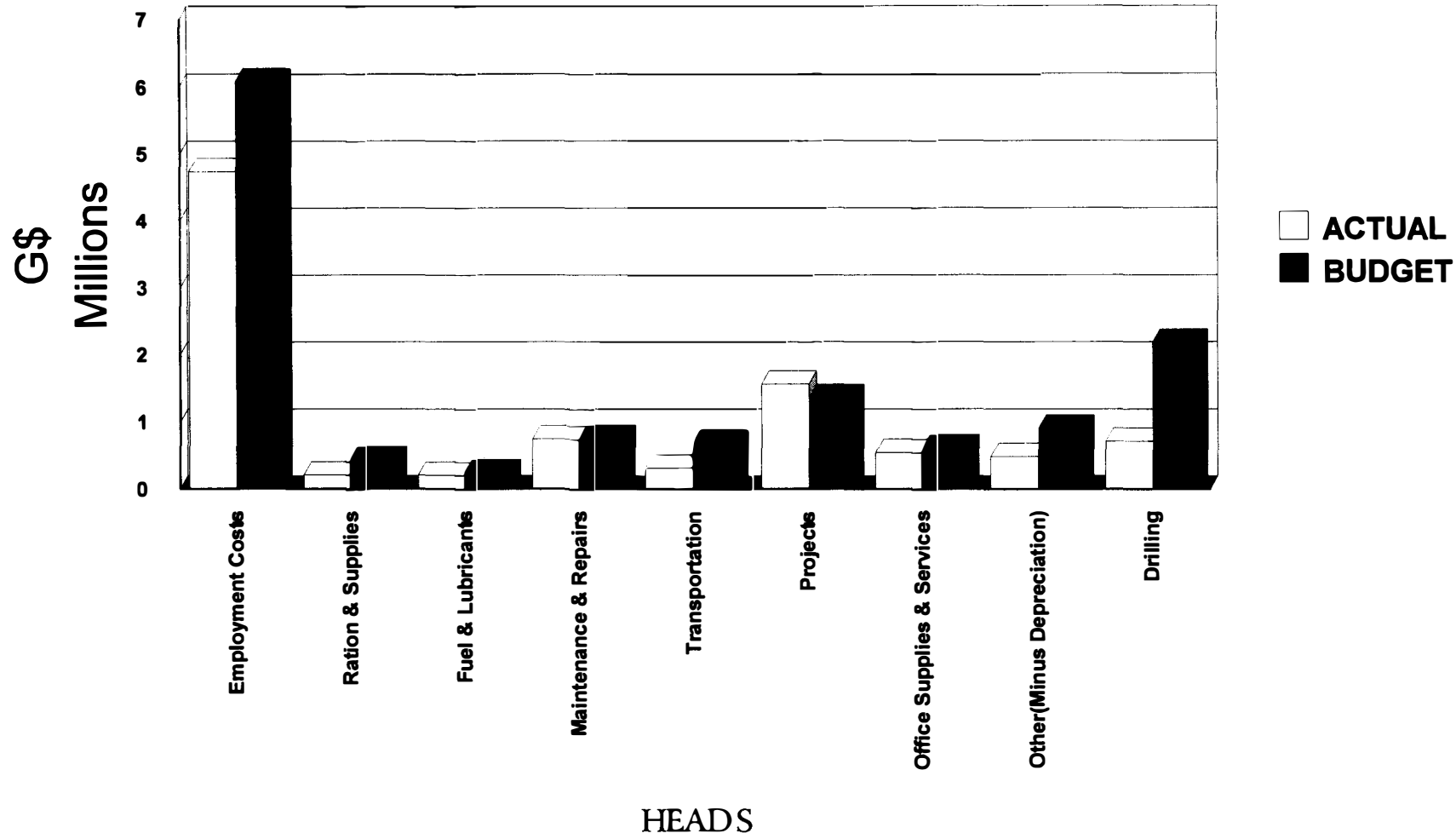
The graph at Appendix B gives a pictorial account of the Commission's expenses over the year 1987.

**Creditors**

The Commission's accounts showed creditor balances at December 31, 1987 totaling approximately \$1.301M. The major liabilities were refundable deposits \$0.134M and amounts owing to the Accountant General and Plant Maintenance and Hire Division totaling \$0.97M and \$0.19M, respectively.



APPENDIX B  
**EXPENSES TO DECEMBER 31, 1987**  
 Actual -vs- Budget



## Debtors

The Debtor balances recorded in the Commission's Debtors Ledger at December 31, 1987 totaled \$0.653M of which amount \$0.282m were with the expeditors on a roll-over basis.

The Debtor balances were aged as follows:-

3 mths and under	Over 3 mths & under 6	Over 6 mths & under 9	Over 9 mths & under 12	Over 12 mths.	Total
-----	-----	-----	-----	-----	-----
\$	\$	\$	\$	\$	\$
0.282M	0.062M	0.012	0.038	0.259M	0.653M

-----

The Accounts Department initiated action to recover those debts which were aged over 12 months, but the exercise was not concluded because of the resignation of the Legal Adviser/Secretary during the latter part of 1987.

## Cash Position

The unreconciled balance in the Commission's Cash Book at December 31, 1987 was \$2.327M, and it is worthy of mention that the cash position remained stable throughout the year devoid of the cash flow difficulties experienced in previous years.

## Investments

The Commission invested a total of \$5.9M in short term securities during 1987, and maintained securities totaling \$4.9M at December 31, 1987. There were four (4) fixed deposit accounts in the sum of \$2.8M at the Guyana National Co-operative Bank, \$2.0M in Treasury Bills and \$100,000 in Defense Bonds.

## **Interest Earned**

The Commission earned interest on its investments totaling in excess of \$0.110M for the year 1987.

## **Loan Repayment**

The Commission liquidated its indebtedness to the Guyana Gold Board in the sum of \$200,000.00 within the year 1987.

## **Surplus**

The Commission recorded a surplus of \$5.86M before depreciation of \$0.353M and after discounting I.D.R.C. funds of \$1.410M the budgeted figure was \$1.701M and a positive variance of \$4.162M resulted when the actual surplus was compared with the budgeted figure Appendix C is relevant.

## **General**

### *Final Accounts*

The Accounts Department was committed to completing the draft final accounts for the years 1981 - 1986, and presenting same to the Commission's external Auditors - Thomas, Stoll, Dias & Company, but that objective was attained. The data at our disposal proved too unreliable to be accepted in its entirety, and extensive preparatory work had to be undertaken.

There was, however, some success in that the External Auditors, Thomas, Stoll, Dias & Company did complete the 1981 Audit during the year 1987.

### *Stores Accounting Systems*

The upgrading of the Commission's Stores Inventory Systems was not completed during 1987, because of other overriding activities. The faults found in the Stores accounting system were mentioned in the External Auditors' Management Letter associated with the 1981 Audit.

### *Asset Register*

The value of the Commission's assets could not be verified at December 31, 1987 with any accuracy because of the inadequacy of the information available. A proper accounting record in the form of an accurate Asset Register was not available.

*Stock Valuation*

Stock values at December 31, 1987 could not be ascertained because there was no Stores Ledger from which the relevant stock values could have been obtained.

*Contribution to Central Government*

The following contributions were made to the Central Government:

P.A.Y.E	\$150,859.80
N.I.S	<u>467,904.00</u>
Total	<u>\$618,763.80</u>

*Stores Services*

The Stores served fourteen (14) Mining Stations, seven (7) projects and nine (9) expeditions during 1987, and ensured that despatches were on time. However, owing to the state of the Stores Systems, stocking of essential items could not be entertained during 1987.

The Stores also received twenty (20) batches of laboratory and other equipment, including two (2) computer units and several air conditioners.

*Purchasing Section*

The staff of this section, though small in number, performed quite admirably and managed to satisfy the numerous purchasing requests made by the Commission in general. There were a number of difficulties that they had to overcome, and in some instances a lack of transportation to acquire supplies proved to be agonizing. The staff of this section handled in excess of \$2.5M during January to December, 1987, and were at risk without due compensation.



Republic Of Guyana



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Office of the Auditor General  
P.O. Box 1002  
Georgetown, Guyana

AG:109/95

20 December 1995

**REPORT OF THE AUDITOR GENERAL  
TO THE MINISTER  
ON THE FINANCIAL STATEMENTS OF  
THE GUYANA GEOLOGY AND MINES COMMISSION  
FOR THE YEAR ENDED 31 DECEMBER 1987**

I have audited the financial statements of the Guyana Geology and Mines Commission for the year ended 31 December 1987 as set out on pages 1 to 13 attached hereto.

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

As explained in Note 11, fixed assets have been stated in the accounts at a total cost or valuation of G\$4,672,589. No physical verification to determine the existence and condition of these assets was ever done. As a result, the completeness, accuracy and validity of this balance could not be satisfactorily ascertained.

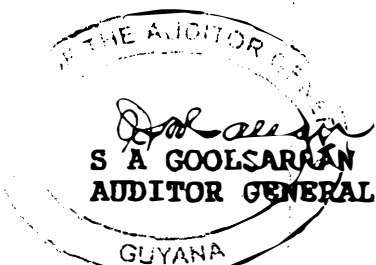
No stock count was carried out at 31 December 1987 and there were no practicable auditing procedures that could have been applied to confirm quantities and values. Further, adequate accounting records in relation to inventories have not been kept. Accordingly, the information and explanations necessary to verify the existence and valuation of inventories stated at G\$1,144,218 in the balance sheet at 31 December 1987, were not obtained.

A difference of \$452,869 was noted between the sundry debtors balance of \$2,583,244 and the total of the individual debtors' accounts. In addition, several pages in the sundry debtors control account were missing. Further, no provision has been made for bad debts. As a result, the completeness, accuracy and validity of the balance of \$2,583,244 stated as sundry debtors could not be determined.

The completeness, accuracy and validity of the amount of \$2,927,184 stated as sundry creditors could not be determined as a schedule of creditors was not produced and because several pages in the general ledger sundry creditors control account were missing.

Details of the Gaibank Line of Credit were not provided for audit, and there were no practicable alternative audit checks. As a result, the accuracy of the amount of \$134,293 stated as Gaibank Line of Credit at 31 December 1987 could not be satisfactorily verified.

Because of the significance of the matters referred to in the preceding paragraphs, I am unable to express an opinion as to whether the financial statements give a true and fair view of the state of the Commission's affairs at 31 December 1987 and the results of its operations for the year then ended.



THE AUDITOR GENERAL  
S A GOOLSARAN  
AUDITOR GENERAL  
GUYANA

OFFICE OF THE AUDITOR GENERAL  
63, HIGH STREET  
KINGSTON  
GEORGETOWN  
GUYANA

# **FINANCIAL STATEMENT 1987**

GUYANA GEOLOGY AND MINES COMMISSION  
STATEMENT OF INCOME AND EXPENDITURE  
FOR THE YEAR ENDED 31 DECEMBER, 1987

<u>INCOME</u>	<u>NOTES</u>	<u>G\$</u>	<u>1987</u> <u>G\$</u>	<u>G\$</u>	<u>1986</u> <u>G\$</u>
ROYALTIES	2	9,540,899		3,918,710	
LICENCES	3	1,082,852		925,369	
FEEs, FINES ETC	4	1,475,739		576,247	
CONCESSIONS	5	1,844,750		610,765	
PROJECT FUNDS	6	518,405		1,186,567	
OTHERS	7	<u>3,914,798</u>		<u>2,029,717</u>	
			18,377,443		9,247,375
 <u>EXPENDITURE:</u>					
EMPLOYMENT COSTS	8	5,646,412		4,353,173	
ADMINISTRATION	9	4,101,076		2,087,809	
TRAVELLING AND TRANSPORT	10	719,453		571,610	
DEPRECIATION		<u>343,461</u>		<u>296,263</u>	
			<u>10,810,402</u>		<u>7,308,855</u>
SURPLUS (DEFICIT):			<u><u>7,567,041</u></u>		<u><u>1,938,520</u></u>

STATEMENT OF ACCUMULATED SURPLUS (DEFICIT)

BAL. AT BEGINNING OF YEAR	989,934	(948,586)
SURPLUS (DEFICIT):	<u>7,567,041</u>	<u>1,938,520</u>
BAL. AT END OF YEAR	<u><u>8,556,975</u></u>	<u><u>989,934</u></u>



GUYANA GEOLOGY AND MINES COMMISSION

BALANCE SHEET AS AT 31 DECEMBER, 1987

	<u>NOTES</u>	<u>G\$</u>	<u>1987</u> <u>G\$</u>	<u>G\$</u>	<u>1986</u> <u>G\$</u>
<u>FIXED ASSETS</u>	11		3,197,188		2,540,989
<u>CURRENT ASSETS:</u>					
INVENTORIES	12	1,144,218		365,098	
SUNDRY DEBTORS	13	2,583,244		1,085,281	
CASH ON HAND AND IN BANK	14	3,982,119		1,146,624	
SHORT TERM INVESTMENT		<u>4,373,670</u>		<u>768,692</u>	
		<u>12,083,251</u>		<u>3,365,695</u>	
<u>CURRENT LIABILITIES:</u>					
SUNDRY CREDITORS	15	2,927,184		1,521,121	
DEFERRED INCOME		95,908		58,913	
ACCRUED EXPENSES	16	<u>905,754</u>		<u>542,098</u>	
		<u>3,928,846</u>		<u>2,122,132</u>	
			<u>8,154,405</u>		<u>1,243,563</u>
NET CURRENT ASSETS:			<u>11,351,593</u>		<u>3,784,552</u>
<u>FINANCED BY:</u>					
GOVT. OF GUYANA CAPITAL	17		2,374,825		2,374,825
NON DISTRIBUTABLE CAPITAL RESERVE			285,500		285,500
RESERVE FUND	18		<u>8,556,975</u>		<u>989,934</u>
SHAREHOLDERS' FUNDS			11,217,300		3,650,259
GAIBANK LINE OF CREDIT			<u>134,293</u>		<u>134,293</u>
			<u>11,351,593</u>		<u>3,784,552</u>

  
MEMBER

  
MEMBER

GUYANA GEOLOGY AND MINES COMMISSION

NOTES ON THE ACCOUNTS

ACCOUNTING POLICIES

ACCOUNTING CONVENTION

(a) The accounts have been prepared under the historical cost convention as modified for the valuation of certain fixed assets.

(b) Depreciation

No depreciation is provided on freehold land.

Depreciation on other fixed assets is on the straight line method calculated at the rates specified below which are estimated to write-off the assets over the terms of their useful lives as follows:-

Buildings	-	2%
Scientific, field and mining equipment	-	10% - 20%
Motor vehicles	-	25%
Office furniture, fixtures and fittings.	-	5% - 10%

(c) Inventories

These are valued at the lower of cost and net realisable value.  
Cost is arrived at using the first-in-first-out method.

**NOTE 2 - ROYALTIES - \$9,540,899**

ROYALTIES	-	GOLD	8,556,980
	-	BAUXITE	745,938
	-	PRECIOUS STONES	102,719
	-	STONES	121,675
	-	SAND	13,587
			<u>9,540,899</u>

**NOTE 3 - LICENCES - \$1,082,852**

LICENCES	-	OIL EXPLORATION	0
	-	PROSPECTING	55,275
	-	TRADING	133,600
	-	CLAIMS - P/STONES	15,640
	-	CLAIMS GOLD	19,710
	-	RIVER LOCATIONS	180,510
	-	GOLDSMITH	24,900
	-	DUPLICATE LICENCE	47
	-	DREDGE LICENCES	597,000
	-	MINING PRIVELEGES	56,170
			<u>1,082,852</u>

NOTE 4 - FEES FINES ETC. - \$1,475,739

801	FEES	53,267
802	FORFEITURES	299,413
803	TRIBUTES	1,101,749
804	APP. FOR DREDGES	10,810
805	REGISTRATION FEES	1,180
806	TRAN. OF DREDGES	420
836	DUTY ON TRANSFERS	8,900
		<u>1,475,739</u>

NOTE 5 - CONCESSIONS - \$1,844,750

827	MINING CONCESSIONS	121,745
829	CON. DREDGING	0
830	CON. DUPLICATE	0
831	MINING LEASES	13,752
832	EXCL. PERMISSION	1,709,253
		<u>1,844,750</u>

NOTE 6 - PROJECT FUNDS - \$518,405

841	DICKMAN HILL PROJECT	518,405
842	SUCTION DREDGE	0
850	ECLIPSE FALLS	0
		<u>518,405</u>

**NOTE 7 - OTHERS - \$3,914,798**

825	RENTS HOUSING	0
826	MINING EQUIPMENT	0
828	PROFESSIONAL SERVICES	0
834	REGISTRATION CERTIFICATE	39
838	INTEREST ON INVESTMENT	121,695
844	SALE OF LAPIDARY PRODUCT	245,909
840(b)	VERIFICATION OF CLAIMS	8,000
846	SALE OF SILVER	8,473
847	SALE OF DIAMONDS	0
871	CONTRIBUTION FROM OTHER EXT. AGENCIES - UNDP, MINERAL PROCESSING & INSTITUTE SUP.	1,617,863
873	CANTEEN SALES	60,941
837(a)	SALE OF OFFICIAL PUBLICATION	75,940
870	DRILLING	1,342,536
874	SURCHARGE	650
		<u>3,482,046</u>
835	MISCELLANEOUS	432,752
		<u>3,914,798</u>

**NOTE 8 - EMPLOYMENT COSTS - \$5,646,412**

701	-	SALARIES	3,150,409
702	-	WAGES	513,791
703	-	SALARIES OVERTIME	255,984
703(b)	-	COMM. OVERTIME	16,858
704	-	WAGES OVERTIME	223,032
705	-	STATION/BUSH ALLOWANCE	15,792
706	-	HOUSE ALLOWANCE	11,700
707	-	DUTY ALLOWANCE	10,589
708	-	SUBSISTENCE & TRAVELLING	370,344
709	-	RISK ALLOWANCE	8,133
710	-	CASH IN LIEU OF LEAVE	14,746
711	-	TRAVELLING ALLOWANCE	6,364
712	-	ENTERTAINMENT ALLOWANCE	7,000
713	-	TELEPHONE ALLOWANCE	300
714	-	PENSION SCHEME	248,530
715	-	N.I.S. EMPLOYERS	93,965
716	-	DIRECTORS EMOLUMENT	7,400
717	-	LEAVE PASSAGE	151,760
718	-	RESPONSIBLE ALLOWANCE	15,282
719	-	ACTING ALLOWANCE	19,389
720	-	UNIFORM AND SAFETY GEARS	75,582
721	-	TRAINING AND EDUCATION	27,595
724	-	PERSONAL ALLOWANCE	394,117
771	-	GRATUITY AND SEVERANCE PAY	7,750
			<u>5,646,412</u>

**NOTE 9 - ADMIN EXPENSES - \$4,101,076**

722	-	LUNCH & SNACKS	101,953
726	-	FUEL LUBRICANTS - VEHICLES ETC.	426,636
727	-	MAINTENANCE OF RADIO & COMM. EQUIP.	41,043
728	-	MAINTENANCE OF ELECTRICAL EQUIP.	155,355
729	-	MAINTENANCE OF VEHICLES	409,811
730	-	MAINTENANCE OF CRAFT	87,039
732	-	HIRE OF EQUIPMENT	35,250
733	-	TELEPHONE, TELEX, CABLES	85,645
734	-	ELECTRICITY	209,128
735	-	RENT OF OFFICE EQUIPMENT	32,670
736	-	MAINTENANCE OF OFFICE EQUIPMENT	13,347
737	-	PRINTING & DUPLICATING	35,898
738	-	MATERIALS & SUPPLIES - DRAWING OFFICE	1,119
739	-	PROFESSIONAL&CONSULTANCY SERVICES	70,054
740	-	AUDIT FEES	108,023
741	-	OFFICE STATIONERY	230,102
742	-	OFFICE PUBLICATION & NOTICE	72,894
743	-	POSTAGE	3,466
744	-	MICRO FILMING	7,531
745	-	MAINTENANCE & REPAIRS TO BUILDINGS	158,373
746	-	MAINTENANCE OF GROUNDS	493
747	-	JANITORY & CLEANING	16,962
748	-	CUSTODIAL SERVICE	7,265
749	-	LEASES, RENTAL & FARES	12,064
750	-	RATES & TAXES	0
751	-	BURSARIES	2,450
752	-	NATIONAL EVENTS	1,602
753	-	COMPENSATION	6,500
754	-	DRUGS & MEDICAL SUPPLIES	56,998
755	-	ASSAY LABORATORY SUPPLIES	8,188
756	-	CHEMICAL LABORATORY SUPPLIES	35,867
757	-	PET LABORATORY SUPPLIES	0
758	-	LAPIDARY LABORATORY SUPPLIES	59,459
759	-	INSURANCE OF ASSETS	17,427
760	-	BANK CHARGES	16,748
761	-	REVENUE PROTECTION	0
763	-	RATION	658,459
764	-	MISCELLANEOUS - OTHER EXPENSES	470,320
765	-	ROYALTIES	7,575
766	-	JEWELLERY FOR LAPIDARY	32,459
767	-	ADVERTISEMENT	12,114
768	-	PURCHASE OF SILVER & SEMI P/S	15,973
769	-	DONATIONS - GIFTS, WREATHS, ETC.	5,854

770	-	MISCELLANEOUS	226,241
772	-	INCENTIVES	4,252
773	-	EXHIBITIONS & SALES	10,065
774	-	ENTERTAINMENT EXPENSE	84,858
775	-	INTEREST PAID	8,498
776	-	STORAGE	20,949
777	-	CUSTOMS & EXCISE	0
778	-	FREIGHT & HANDLING	8,412
779	-	LEGAL EXPENSES	5,652
780	-	STOCK LOSSES & OBSOLENCE	50
781	-	AMMUNITION	50
782	-	WELFARE & SUNDRIES	1,655
783	-	REVENUE STAMPS	0
784	-	UN VOLUNTEERS	0
785	-	DEV. SUPP. COMM.	0
790	-	CASH LOSS	280
			<u>4,101,076</u>



**NOTE 10. - TRANSPORT AND TRAVELLING - \$719,453**

731	-	OVERSEAS CONFERENCE & VISITS	680,715
725	-	ROAD AIR AND OTHER TRANSPORTA	<u>38,738</u>
			<u>719,453</u>

**NOTE 11 - FIXED ASSETS**

	LAND & BLDGS.	MOTOR VEHICLES	OFF. FUR. FIX. AND FITTINGS	SCIENTIFIC FIELD AND MINING E/MENT	TOTAL
COST/VALUATION	G\$	G\$	G\$	G\$	G\$
At 1 January, 1987	1,272,235	365,438	422,537	1,612,719	3,672,929
Additions in 1987	57,709	0	39,006	902,945	999,660
Disposals	0	0	0	0	0
At 31 December, 1987	<u>1,329,944</u>	<u>365,438</u>	<u>461,543</u>	<u>2,515,664</u>	<u>4,672,589</u>

**DEPRECIATION:**

At 1 January, 1987	116,757	198,090	206,840	610,253	1,131,940
Charged for the year	16,031	80,196	43,979	203,255	343,461
Written back on disposal	0	0	0	0	0
At 31 December, 1987	<u>132,788</u>	<u>278,286</u>	<u>250,819</u>	<u>813,508</u>	<u>1,475,401</u>

**NET BOOK VALUES:**

At 31 December, 1987	<u>1,197,156</u>	<u>87,152</u>	<u>210,724</u>	<u>1,702,156</u>	<u>3,197,188</u>
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**NOTE 12 - INVENTORIES - \$1,144,218**

603	-	STOCK - OFFICE SUPPLIES ETC	0
609	-	STOCK OF DIAMONDS	1,685
611	-	STOCK - STORES LUMBER ETC.	1,142,533
			<u>1,144,218</u>

**NOTE 13 - SUNDRY DEBTORS - \$2,583,244**

601	-	SUNDRY DEBTORS CONTROL	2,552,575
856	-	DEPOSITS LODGED	380
613(a)	-	ACCOUNTS RECEIVABLE	28,593
613(b)	-	PREPAYMENTS	1,696
			<u>2,583,244</u>

**NOTE 14 - CASH ON HAND AND BANK - \$3,982,119**

605	-	BANK BALANCE (CASH)	2,955,249
606	-	PETTY CASH IMPREST	(8,855)
607(a)	-	SUB IMPREST NO. 12	5,000
	-	SUB IMPREST NO. 15	57,299
	-	SUB IMPREST NO. 5758	5,945
607(b)	-	STAMP IMPREST	(1,913)
607(c)	-	ICE IMPREST	(504)
614	-	CANTEEN IMPREST	100
615	-	IDRC BANK ACCOUNT	969,798
			<u>3,982,119</u>

**NOTE 15 - SUNDRY CREDITORS - \$2,927,184**

401	-	SUNDRY CREDITORS CONTROL	2,019,298
	-	PROVISION FOR AUDITING	448,336
432	-	REFUNDABLE DEPOSIT	459,550
			<u>2,927,184</u>

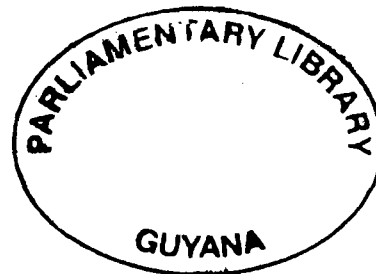
**NOTE 16 - ACCRUED EXPENSES - \$905,754**

402	-	ACCRUED SALARIES	227,580
403	-	ACCRUED WAGES	9,429
404	-	OTHER ACCRUED EXPENSES	301,439
405(a)	-	PAYE	18,855
405(b)	-	N.D.S.	(6,612)
406	-	SALARIES PAYABLE	199,849
407	-	N.I.S PAYABLE	74,974
408	-	WAGES PAYABLE	(6,717)
409	-	LIFE INSURANCE	6,842
410(a)	-	DEPENDANTS FUND PAYABLE	2,443
410(b)	-	DEPENDANTS FUND MORTGAGE	(413)
411	-	PENSION FUND PAYABLE	32,094
412	-	UNION DUES	6,823
413	-	P.S.U. CREDIT UNION	11,311
414	-	RENT DUE AND PAYABLE	(159)
416	-	MORTGAGE FINANCE PAYABLE	1,238
417	-	MAGISTRATE COURT	0
418	-	DIRECTORS FEE	100
419	-	MISCELLANEOUS	2,136
420	-	GNCB TRUST MORTGAGE	300
421	-	ACTING ALLOWANCE	0
423	-	RISK ALLOWANCE	0
424	-	RESPONSIBLE ALLOWANCE	0
427	-	SUB. & TRAVELLING	1,671
428	-	HOUSE ALLOWANCE	0
429	-	PERSONAL ALLOWANCE	0
430	-	SPORTS CLUB	254
431	-	D.I.A. PAYABLE	17,330
433	-	WITHHOLDING TAX	4,987
			<u>905,754</u>

**NOTE 17 - GOVT. OF GUYANA CAPITAL - \$2,374,825**

This comprised as follows:-

	<u>1984</u>	<u>1983</u>
Assets less liabilities at 1/8/79	2,139,306	2,139,306
Other expenditure	235,519	235,519
	<u>2,374,825</u>	<u>2,374,825</u>



The Commission came into existence on 1/8/79 by an order enacted through the Geology and Mines Commission Act 1979.

According to Section 35(1) and (2) of the Act, for the assets and liabilities vested at 1/8/79 the Commission shall issue to the Government debentures or debenture stock of such nominal value and bearing such interest rates and repayment dates as may be agreed upon between the Minister responsible for finance and the Commission.

The debenture stock has not been issued to the Government and the repayment terms and interest rates have not yet been agreed.

**NOTE 18 - RESERVE FUND:**

The Guyana Geology and Mines Commission Act 1979 Section 20 (1) provides that the Commission shall maintain a reserve fund and shall, out of the net surplus of each year, transfer to that fund a sum equal to not less than such sum as may be fixed by the Minister.