43-101 Report

on the

KGL MASTERS PROJECT

Provinces of Nord Kivu and Orientale
DEMOCRATIC REPUBLIC OF CONGO

Latitude 00° 65’ 00”N Longitude 29° 15’ 00”E

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1.0 SUMMARY

Property description: The mineral rights for the Masters project property is held under 11 contiguous *Permis de Recherches* (Exploration Licence), covering 3,894 square kilometres, granted to MASTERS sprl and subsequently transferred to KGL MASTERS sprl.

Location: The property is located in the Territories of Mambasa, Dtugu and Irumu in the Oriental Province (*Province Orientale*) and in the Territory of Beni in North Kivu (*Nord Kivu*) in the northeastern part of the Democratic Republic of Congo. The city of Beni is located on the southern part of the property

Ownership: The property is covered by eleven Exploration Licences held by KGL MASTERS sprl, a company incorporated under the laws of the Democratic Republic of Congo. MASTERS sprl and Kilo Goldmines Inc. jointly formed KGL MASTERS sprl and hold 10% and 90% respectively. MASTERS sprl assigned the Exploration Licences to KGL MASTERS sprl and Kilo Goldmines Inc will fund KGL MASTERS sprl to carry out exploration.

Geology: The youngest lithology on the property is the Post Karoo, essentially a lateritc cuiriasse. The underlying Karoo formation, of black shales, elluvial and alluvial deposits lies on the Lindian. The Lindian is composed of black argillite and sandstone intercalated with arkosic sandstone, red micaceous sandstone, conglomerates and a number of basic dykes.

The Archaean Kibalian (Burundian) formation consists of quartzitic sandstone often with pyrite, pellitic and graphitic shales and horizons intercalated with fine quartzitic sandstone, banded sericite schists, quartz-sericite schists, phyllites, spotted schists and red banded shale. Gold bearing quartz veins are hosted within the Kibalian formation.

Mineralization: Gold mineralization is present in quartz veins that are being mined by artisanals on the KGL Masters Project property. The gold bearing quartz veins are predominantly hosted within gneisses and quartz – mica schists of the Kibalian formation.

Exploration concept: Airborne geophysical surveys and regolith and stream sediment sampling surveys as well as geological mapping, diamond drilling, trenching and ground geophysics are warranted. Orogenic and/or intrusion-related gold deposit(s) are targeted.

Status of exploration: During the first half of the 1900's the property and vicinity was explored and exploited primarily for alluvial gold. During this time reconnaissance type exploration activity focused on the hard-rock potential was carried out over small selected areas. Exploration activities and exploitation of gold was virtually non-existent during the second half of the 1900's. The property has never been subjected to systematic exploration using current methods. KGL MASTERS sprl is currently collecting regolith samples.

Conclusions and recommendations: The property has the potential to host significant deposit(s) of gold either in the Kibalian gneisses, schist and volcanic rocks (orogenic type gold deposits) or in granitic intrusives and surrounding rocks (reduced-intrusive related gold deposits). A two-phase budget of US$11.5 million is warranted to evaluate the economic potential of the KGL Masters Project property.

2.0 INTRODUCTION

2.1 Report prepared for

Preparation of this report on the KGL MASTERS sprl Project, in the Democratic Republic of Congo, ("DRC") was requested by Kilo Goldmines Inc. ("Kilo"). Kilo Goldmines Inc. is a private company that was incorporated by a Certificate of Incorporation issued pursuant to the provisions of the *Business Corporations Act* (Ontario) dated January 18, 2006. The head office, and the registered office of the Corporation, is located at 141 Adelaide Street West, Suite 850, Toronto, Ontario M5H 3L5.

The author, S.D. Robinson is a consulting geologist independent of Kilo Goldmines Inc., and is a "qualified person" as defined by Canadian Securities Administrators ("CSA") National Instrument ("NI") 43-101. Preparation of this report is in accordance with the requirements of NI 43-101 of the CSA, as set out in Form 43-101F1.

2.2 Purpose of report

The purpose of this report is to disclose information on certain contiguous Exploration Licences in the DRC, namely the KGL MASTERS sprl Project property referred to herein as the "KGL Masters Project". This report will be used primarily for a qualifying transaction with a Capital Pool Company ("CPC") whereby a reverse merger is completed between the CPC and Kilo simultaneously with an equity financing. The CPC is Blue Ribbon Capital Corporation incorporated by a Certificate of Incorporation issued pursuant to the provisions of the *Business Corporations Act* (Ontario) dated September 12, 2006, which articles were amended June 25, 2007. The head office and the registered office of the Corporation are located at Suite 110, 141 Adelaide St. W, Toronto, Ontario, Canada M5H 3L5. Blue Ribbon Capital Corporation is listed on the TSX Venture exchange under the symbol BRQ.P.

2.3 Sources of information and data

The sources of information and data used in the compilation of this report is derived from published data, un-published reports prepared for Kilo, authors observations during site visits, as well as a compilation report of the historical records publicly available in the archives of the Tevuren Museum in Brussels, Belgium. All data reviewed is listed herein in alphabetical order in Section 21.0 entitled 'References' with the exception of the documentation pertaining to tenure of the property which is described herein in Section 4.2.

2.4 Property inspection by author

The author was not involved in the exploration work carried out by KGL MASTERS sprl on the KGL Masters Project, but visited the property during the periods of September 26th to 30th, 2006, May 29th to June 3rd, 2007, August 27th to 30th, 2007, December 10th to 15th, 2007 and February 16th to February 22nd, 2008.

3.0 RELIANCE ON OTHER EXPERTS

No disclaimer is included as the author has not relied on reports, opinions or statements of legal or other experts who are not qualified persons for information concerning legal, environmental, political or other issues and factors relevant to the technical report.

Kilo contracted the Royal Museum for Central Africa, (Tevuren) in Brussels, Belgium to compile historical archived records pertaining to the KGL Masters Project Exploration Licences. The reports cover the period prior to independence in 1960. The report findings are included herein in Section 6.0.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 Location and area

The KGL Masters Project property is located in the Territories of Dtuga, Mambasa and Irumu in the Oriental Province (*Province Orientale*) and in the Territory of Beni in North Kivu (*Nord Kivu*) in the DRC as illustrated on Figure 4.1a. The property lies between North Latitudes 00° 20' 00" and 01° 10' 00" and East Longitudes 29° 10' 00" and 29° 40' 00" and totals 3,894 square kilometres. The city of Beni, in the DRC, is located within the southern portion of the property. The geodetic Datum is Arc 1950 (Zaire); the ellipsoid has not been confirmed but it may be Clarke 1880.

Figure 4.1a. Location map of the KGL Masters Project area in the DRC.

The following is a brief synopsis of the Democratic Republic of the Congo according to CIA World Fact Book, Anonymous (2007):

History: Established as a Belgian colony in 1908, the Republic of the Congo gained its independence on June 30th, 1960 from Belgium and Independence Day, a National holiday is celebrated annually on June 30th. The early years following independence were marred by political and social instability. Col. Joseph MOBUTU seized power and declared himself president in a November 1965 coup. He subsequently changed his name to MOBUTU Sese Seko and the name of the country to Zaire. MOBUTU retained his position for 32 years through several sham elections, as well as through the use of brutal force. Ethnic strife and civil war, touched off by a massive inflow of refugees in 1994 from fighting in Rwanda and Burundi, led in May 1997 to the toppling of the MOBUTU regime by a rebellion backed by Rwanda and Uganda and fronted by Laurent KABILA. He renamed the country the Democratic Republic of the Congo ("DRC"), but in August 1998 his regime was itself challenged by a second insurrection again backed by Rwanda and Uganda. Troops from Angola, Chad, Namibia, Sudan, and Zimbabwe intervened to support KABILA's regime. A cease-fire was signed in July 1999 by the DRC, Congolese armed rebel groups, Angola, Namibia, Rwanda, Uganda, and Zimbabwe but sporadic fighting continued. Laurent KABILA was assassinated in January 2001 and his son, Joseph KABILA, was named head of state. In October 2002, the new president was successful in negotiating the withdrawal of Rwandan forces occupying eastern Congo; two months later, the Pretoria Accord was signed by all remaining warring parties to end the fighting and establish a government of national unity. In July 2003 a transitional government was established with Joseph KABILA as president and four vice presidents represented the former government, former rebel groups, and the political opposition. The transitional government held a successful constitutional referendum in December 2005 and elections for the presidency, National Assembly, and provincial legislatures in 2006. KABILA was inaugurated president in December 2006, the National Assembly was installed in September 2006 and its president, Vital KAMERHE, was appointed in December. Provincial assemblies were constituted in early 2007, and elected governors and national senators in January 2007.

Geography: The DRC covers 2,345,410 km² of which 2,267,600 km² is land; the remainder is water. In 2005 2.86% of the land was arable and permanent crops covered 0.47%. Some 110 km² was irrigated in 2003. A 10,730 kilometre border separates the DRC from neighbouring countries of Angola, Burundi, Central African Republic, Republic of the Congo, Rwanda, Sudan, Tanzania, Uganda and Zambia. The DRC has 37 km of coastline. The terrain of the DRC consists of a vast central low-lying plateau and mountains in the east. The elevation varies from 0 m above mean sea level ("ASL") to Pic Marguerite on Mont Ngaliema (Mount Stanley) at 5,110 m ASL.

Climate: The DRC straddles the equator and has a very narrow strip of land that controls the lower Congo River that is the only outlet to the South Atlantic Ocean. The central river basin and eastern highlands are covered by a dense tropical rain forest. The climate is tropical; hot and humid in equatorial river basin; cooler and drier in southern highlands; cooler and wetter in eastern highlands; north of Equator the wet season occurs during April to October and the dry season occurs during December to February. South of Equator the wet season occurs during November to March and the dry season occurs from April to October.

Natural resources include cobalt, copper, niobium, tantalum, petroleum, industrial and gem diamonds, gold, silver, zinc, manganese, tin, uranium, coal, hydropower and timber.

Natural hazards in the DRC are periodic droughts in the south, seasonal flooding of the Congo River and there are active volcanoes in the Great Rift Valley in the east.

Environmental concerns include poaching that threatens wildlife populations, water pollution, deforestation, deforestation caused by refugees, soil erosion, and wildlife poaching and mining of diamonds, gold and coltan (a mineral used in creating capacitors) causing environmental damage. The DRC is a *party to the* Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Hazardous Wastes, Law of the Sea, Marine Dumping, Ozone Layer Protection, Tropical Timber 83, Tropical Timber 94, and Wetlands international agreements.

Population (2007) is estimated at 65,751,512 of which 47.6% are 0-14 years old, 49.9% are 15-64 years old and 2.6% are 65 years old and over. The median age is 16.1 years; annual growth rate is 3.39% with a birth rate of 42.96 births per 1,000 population. The infant mortality rate is 65.52 deaths per 1,000 live births and the life expectancy at birth is 57.2 years. It was estimated that 4.2% (2003) of the adult population were HIV positive or had AIDS.

Disease: The risk of contracting major infectious diseases from various sources is very high. Food or waterborne diseases include bacterial and protozoal diarrhoea, hepatitis A, and typhoid fever. Vector borne diseases include malaria, plague, and African trypanosomiasis (sleeping sickness) are high risks in some locations and water contact disease schistosomiasis (2007).

Ethnic groups: There are over 200 African ethnic groups in the DRC of which the majority are Bantu; the four largest tribes namely Mongo, Luba, Kongo (all Bantu), and the Mangbetu-Azande (Hamitic) constitute about 45% of the population. About 50% of the population is Roman Catholic, 20% is Protestant, 10% is Kimbanguist, 10% is Muslim, and the remaining 10% includes syncretic sects and indigenous beliefs.

Language: French is the official language of the DRC. Other common languages in the DRC are Lingala (a lingua franca trade language), Kingwana (a dialect of Kiswahili or Swahili), Kikongo, and Tshiluba. The estimated literacy rate in 2003, defined as at age 15 and over have the ability to read and write French, Lingala, Kingwana, or Tshiluba was 65.5% for the total population or 76.2% for males and 55.1% for females.

Government: The DRC has a republic type of Government and the capital is Kinshasa. The administrative divisions illustrated on Figure 4.1b consist of the 10 provinces Bandundu, Bas-Congo, Equateur, Kasai-Occidental, Kasai-Oriental, Katanga, Maniema, Sud-Kivu, Nord-Kivu and Orientale, as well as one city, namely Kinshasa. According to the Constitution adopted in December 2005, and effective February 18th, 2006 the current administrative divisions will be subdivided into 26 new provinces by 2009.

Joseph Kabila of the People's Party for Reconstruction and Democracy has been President since January 17th, 2001 and Antoine Gizenga has been Prime Minister since December 30th, 2006. The President is chief of state, the Prime Minister, appointed by the president, is head of government, cabinet Ministers of State are appointed by the president and the president is elected by popular vote to a five-year term and eligible for a second term. The next election is to be held in 2011. The legislature consists of a National Assembly (500 seats; 61 members elected by majority vote in single-member constituencies, 439 members elected by open list proportional-representation in multi-member constituencies; to serve five-year terms) and a Senate (108 seats; members elected by provincial assemblies to serve five-year terms). It is compulsory for all nationals 18 years of age and over to vote.

Figure 4.1b. Map of the DRC illustrating Districts, roads, railroads, airports cities and towns.

Legal system under the constitution adopted on 18 December 18th, 2005; accepts compulsory ICJ jurisdiction, with reservations. The Judicial branch consists of Constitutional Court, Appeals Court, Council of State, High Military Court, plus civil and military courts and tribunals.

Economy of the DRC, a nation endowed with vast potential wealth, is recovering from two decades of decline. Conflict, which began in August 1998, dramatically reduced national output and government revenue, increased external debt, and resulted in an estimated 3.5 million deaths from violence, famine, and disease. Foreign businesses curtailed operations due to uncertainty about the outcome of the conflict, lack of infrastructure, and the difficult operating environment. In late 2002 conditions began to improve with the withdrawal of a large portion of the invading foreign troops. The transitional government reopened relations with international financial institutions and international donors, and President KABILA has begun implementing reforms. Much economic activity still occurs in the informal sector, and is not reflected in GDP data. Economic stability improved during the period from 2003 to 2006, although an uncertain legal framework, corruption, and a lack of transparency in government policy continues to hamper growth. A renewed activity in the mining sector during 2005 and 2006, the source of most of the export income, boosted Kinshasa's fiscal position and GDP growth. Government reforms and improved security may lead to increased government revenues, outside budget assistance, and foreign direct investment in 2007.

GDP (2006) estimated purchasing power parity was $44.44 billion and at the official exchange rate was $7.98 billion. The real growth rate was 6.4% and $700 per capita. It is estimated (2000) that agriculture constituted 55% of the GDP, industry 11% and services made up 34%. The consumer inflation rate was estimated at 18.2% in 2006 and an estimated 15 million people were in the labour force. Revenues in 2006 were estimated at $700 million and expenditures at $2 billion. The agriculture products include coffee, sugar, palm oil, rubber, tea, quinine, cassava (tapioca), palm oil, bananas, root crops, corn, fruits and wood products. Industries include mining (diamonds, gold, copper, cobalt, coltan and zinc), mineral processing, consumer products (including textiles, footwear, cigarettes, processed foods and beverages), cement, and commercial ship repair.

Electricity production in 2004 was 353 million kWh of which 98.2 % was hydro. Electricity consumption was 658.3 million kWh and imports were 330 million kWh.

Oil production in 2004 was 21,090 bbl/day, consumption was 8,200 bbl/day, exports were 229,700 bbl/day and imports were 8,220 bbl/day. Oil reserves on January 1st, 2005 were 187 million bbl and natural gas reserves were 991.1 million cu m. There was no production or consumption of natural gas.

Exports in 2004 were estimated at $1.108 billion f.o.b. and commodities included diamonds, copper, crude oil, coffee, cobalt. In 2006 export partners were Belgium 33.4%, China 24.1%, Chile 8.9%, Finland 8.2%, United States 5.6% (2006). Estimated imports in 2004 were $1.319 billion f.o.b. Commodities imported included foodstuffs, mining and other machinery, transport equipment, fuels. In 2006 import partners were South Africa 19.5%, Belgium 11.8%, France 9.4%, Kenya 7.5%, Zambia 6.5%, and Cote d'Ivoire 4.8%.

External debt and aid: The external debt in 2006 was estimated at $10 billion and $2.2 billion was received in economic aid.

Currency in the DRC is the Congolese franc (CDF). The exchange rates of the Congolese franc per United States dollar was 464.69 (2006), 437.86 (2005), 401.04 (2004), 405.34 (2003), 346.49 (2002). The fiscal year is the calendar year.

Telephone system assessment is poor. The domestic service is barely adequate wire and microwave radio relay service in and between urban areas. In 2005 there were 10,600 main lines in use and 2.746 million mobile cellular phone subscribers. There is a domestic satellite system with 14 earth stations. The international country code is 243 and in 2001 there was one Intelsat (Atlantic Ocean) satellite earth station.

Radio stations in 2001 broadcast on 3 AM stations, 11 FM stations and, 2 shortwave stations. In 1997 there were 18.03 million radios in the DRC. In 2001 television was broadcast on 4 stations and there were 6.478 million televisions in the country. The Internet country code is cd. In 2006 there were 1,778 internet hosts, 1 internet service provider and 180,000 internet users.

Airports in the DRC in 2006 totalled 234 of which 25 are paved; 4 are over 3,047 m in length 2 paved runways are between 2,438 to 3,047 m. Thirty four are between 1,524 to 2,437 m in length, 16 are paved and 18 are unpaved. Two paved and 94 unpaved runways are between 914 to 1,523 m in length. Under 914 m in length there is one paved and 97 unpaved runways.

Pipelines in 2006 totalled 78 km for oil and 54 km for gas.

Railways in 2006 totalled some 5,138 km of which 3,987 km was 1.067 m gauge (858 km is electrified); 125 km was 1.000 m gauge and 1,026 km was 0.600 m gauge.

Roadways in 2004 totalled some 153,497 km of which 2,794 km were paved and 150,703 km were unpaved.

Waterways in 2005 totalled 15,000 km.

Ports and terminals in the DRC are located at Banana, Boma, Bukavu, Bumba, Goma, Kalemie, Kindu, Kinshasa, Kisangani, Matadi, and Mbandaka.

Military: Armed Forces of the Democratic Republic of the Congo (FARDC) in (2006) are Army, Navy, and the Congolese Air Force. The Military service age and obligation is 18 to 45 years of age. Military expenditures in 2006 was 2.5% percent of GDP.

International Disputes: The heads of the Great Lakes states and UN pledge to abate tribal, rebel, and militia fighting in the northeastern region of the DRC. In 2006, the UN Organization Mission in the Democratic Republic of the Congo (MONUC) maintained over 18,000 uniformed peacekeepers in the region, first deployed in 1999. Despite significant repatriation efforts by governments and international organizations, in 2006, Angolans, Rwandans, Sudanese, and residents of other neighbouring states reside as refugees in the DRC; members of Uganda's Lords Resistance Army forces take refuge in DRC's Garamba National Park. The boundary position in the broad Congo River with the Republic of the Congo is indefinite except in the Pool Malebo/Stanley Pool area.

Refugees and internally displaced persons (IDPs): Refugees in 2006 were from Angola (106,772), Rwanda (42,360), Burundi (19,032), Uganda (18,954), Sudan (11,723), and

Republic of Congo (5,243) IDPs. Some 1.1 million were fighting between government forces and rebels since mid-1990s; most of the IDPs are in the eastern provinces.

Illicit drugs: The DRC is one of Africa's biggest producers of cannabis, but mostly for domestic consumption. While rampant corruption and inadequate supervision leaves the banking system vulnerable to money laundering, the lack of a well-developed financial system limits the country's utility as a money-laundering center.

4.2 Mineral tenure and identifying numbers

The mineral tenure for the KGL Masters Project is held under eleven contiguous *Permis de Recherches* (English translation is 'Research Permits' however an English version of the Mining Code 2002, translates 'Permis de Recherches' as 'Exploration Licences' hence 'Exploration Licence' is used in this report). The Exploration Licences listed in Table 4.2 and illustrated on Figure 4.2 were granted to MASTERS sprl and subsequently transferred to KGL MASTERS sprl. The geodetic coordinate Datum is ARC 1950 (Zaire).

Table 4.2. List of the KGL MASTERS sprl Exploration Licences in the DRC.

Exploration Licence	EAST LONGITUDE	NORTH LATITUDE	AREA Km²	Territory	District	Province	ISSUED d/m/y
2620	29º 20' 00" 29º 20' 00" 29º 30' 00" 29º 30' 00"	00º 50' 00" 01º 00' 00" 01º 00' 00" 00º 50' 00"	*400*	Mambasa	Ituri	Oriental	10/10/06
2621	29º 30' 00" 29º 30' 00" 29º 40' 00" 29º 40' 00"	01º 00' 00" 01º 10' 00" 01º 10' 00" 01º 00' 00"	400	Mambasa	Ituri	Oriental	10/10/06
2622	29º 20' 00" 29º 20' 00" 29º 23' 30" 29º 23' 30" 29º 26' 30" 29º 26' 30" 29º 27' 30" 29º 27' 30" 29º 30' 00" 29º 30' 00" 29º 23' 00" 29º 23' 00"	01º 03' 00" 01º 10' 00" 01º 10' 00" 01º 07' 30" 01º 07' 30" 01º 09' 30" 01º 09' 30" 01º 10' 00" 01º 10' 00" 01º 10' 00" 01º 00' 00" 01º 03' 00"	332	Irumu	Ituri	Oriental	10/10/06
2623	29º 20' 00" 29º 20' 00" 29º 30' 00" 29º 30' 00" 29º 27' 00" 29º 27' 00"	00º 20' 00" 00º 30' 00" 00º 30' 00" 00º 24' 00" 00º 34' 00" 00º 20' 00"	352	Beni	Kivu North	Kivu North	10/10/06
2624	29º 40' 00" 29º 40' 00" 29º 50' 00" 29º 50' 00"	01º 00' 00" 01º 10' 00" 01º 10' 00" 01º 00' 00"	400	Irumu	Ituri	Oriental	15/12/06

Table 4.2a. List of the KGL MASTERS sprl Exploration Licences in the DRC *(continued)*.

Exploration Licence	EAST LONGITUDE	NORTH LATITUDE	AREA Km²	Territory	District	Province	ISSUED d/m/y
2627	29º 30' 00" 29º 30' 00" 29º 40' 00" 29º 40' 00" 29º 36' 00" 29º 36' 00" 29º 35' 00" 29º 35' 00"	00º 50' 00" 01º 00' 00" 01º 00' 00" 00º 52' 00" 00º 52' 00" 00º 50' 30" 00º 50' 30" 00º 50' 00"	366	Irumu	Ituri	Oriental	10/10/06
2630	29º 20' 00" 29º 20' 00" 29º 24' 00" 29º 24' 00" 29º 25' 30" 29º 25' 30" 29º 28' 30" 29º 28' 30" 29º 30' 00" 29º 30' 00"	00º 30' 00" 00º 40' 00" 00º 40' 00" 00º 39' 30" 00º 39' 30" 00º 39' 00" 00º 39' 00" 00º 39' 30" 00º 39' 30" 00º 30' 00"	382	Mambasa	Ituri	Oriental	10/10/06
2633	29º 10' 00" 29º 10' 00" 29º 20' 00" 29º 20' 00"	00º 40' 00" 00º 50' 00" 00º 50' 00" 00º 40' 00"	*400*	Mambasa	Ituri	Oriental	04/04/07
2634	29º 10' 00" 29º 10' 00" 29º 16' 30" 29º 16' 30" 29º 19' 30" 29º 19' 30" 29º 20' 00" 29º 20' 00"	00º 50' 00" 01º 00' 00" 01º 00' 00" 00º 57' 00" 00º 57' 00" 01º 00' 00" 01º 00' 00" 00º 50' 00"	*380*	Mambasa	Ituri	Oriental	10/10/06
2796	29º 40' 00" 29º 40' 00" 29º 41' 30" 29º 41' 30" 29º 40' 30" 29º 40' 30" 29º 50' 00" 29º 50' 00"	01º 10' 00" 01º 15' 30" 01º 15' 30" 01º 18' 30" 01º 18' 30" 01º 20' 00" 01º 20' 00" 01º 10' 00	382	Dtugu	Ituri	Oriental	15/12/06
8437	29º 10' 00" 29º 10' 00" 29º 20' 00" 29º 20' 00"	00º 37' 00" 00º 40' 00" 00º 40' 00" 00º 37' 00"	120	Beni	Kivu North	Kivu North	21/12/07

The author has reviewed scanned copies of the documentation on each of the eleven Exploration Licences currently held by KGL MASTERS sprl on the KGL Masters Project property as listed below. MASTERS sprl was granted the right pursuant to the provisions of the Mining Code 2002 to explore for gold and diamonds on each of the Exploration Licences.

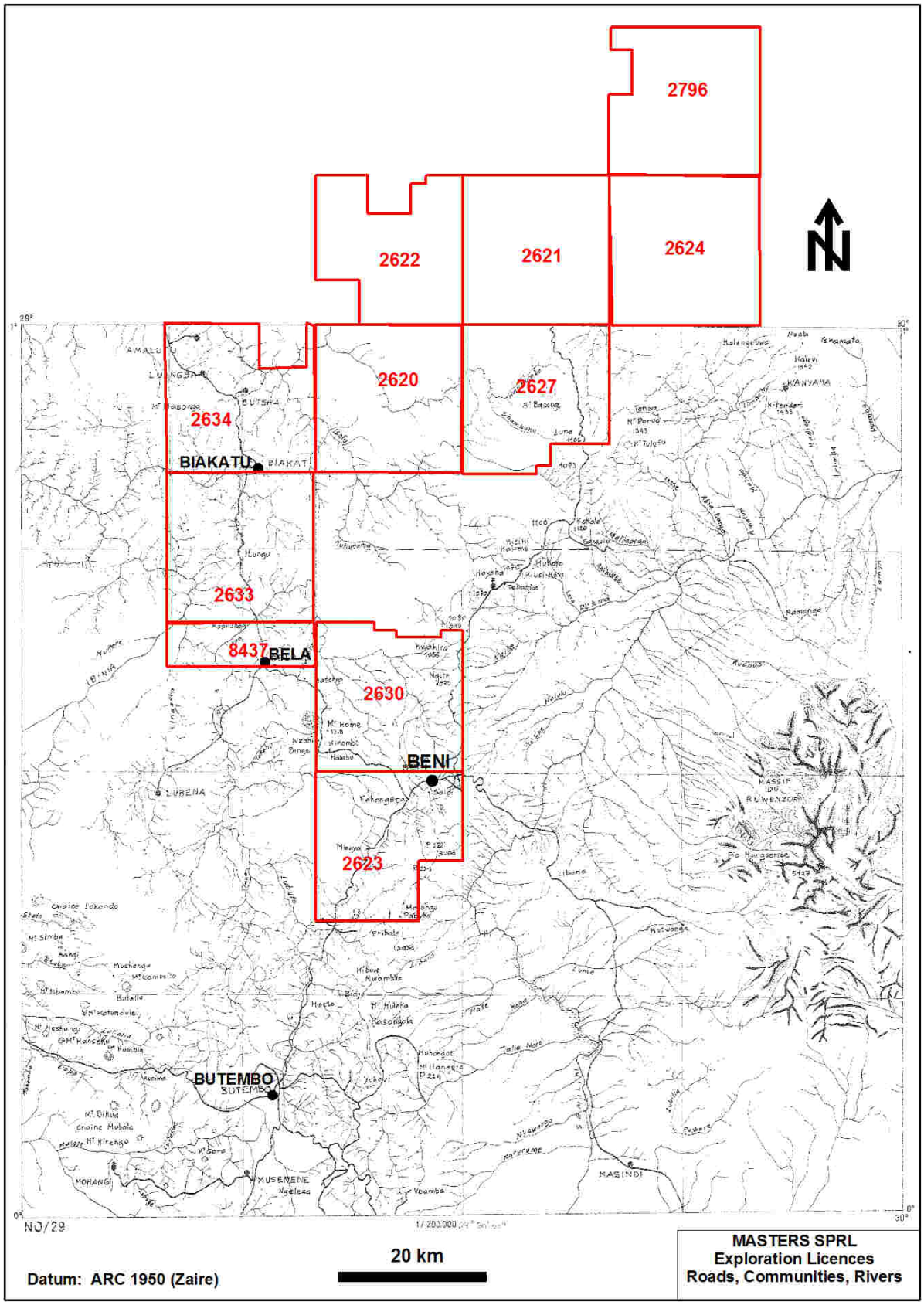

Figure 4.2. Map of the KGL Masters Project property, roads, communities, and rivers.

Exploration Licence 2620

- ARRETE MINISTERIEL No 1914 CAB.MIN/MINES/01/06 DU 10 OCT 2006 PORTANT OCTROI DU PERMIS DE RECHERCHES No 2620 A LA SOCIETE MASTERS SPRL (*only the first page of this document was observed*)

- 10 NOV 2006 NOTE DE DEBIT No CAM/DF/3041/2006 For US$182.66

- CADASTRE MINIER, DIRECTION FINANCIERE, Département de la Trésorerie QUITTANCE 5784/BF44 for USD 182.66 Kinshasa, le 12.12.2006.

- **CERTIFICAT DE RECHERCHES**, No CAMI/CR/2656/2006, Granted to MASTERS SPRL by the Cadastre Minier of the Republique Democratique du Congo as PERMIS DE RECHERES No 2620 for gold and diamonds valid for 5 years from 10/10/2006 to

  09/10/2011. It is dated 15 DEC 2006 and signed by Jean-Félix MUPANDE Directeur General. Included: Annexe of a list of the co-ordinates dated 12/12/2006.
- 06 FEB 2006 NOTE DE DEBIT No CAM/DF/01660/2007 For US$803.25

- RAWBANK, S.A.R.L. ATTESTATION DE PAIEMENT D.G.R.A.D. No 16942/07 dated 20/03/2007 For 447,569 Congolese Francs

Exploration Licence 2621

- ARRETE MINISTERIEL No 1915 CAB.MIN/MINES/01/06 DU 10 OCT 2006 PORTANT OCTROI DU PERMIS DE RECHERCHES No 2621 A LA SOCIETE MASTERS SPRL (*only the first page of this document was observed*)

- 08 NOV 2006 NOTE DE DEBIT No CAM/DF/3000/2006 For US$231.95

- CADASTRE MINIER, DIRECTION FINANCIERE, Département de la Trésorerie QUITTANCE 5765/BF44 for USD 231.95 Kinshasa, le 12.12.2006.

- **CERTIFICAT DE RECHERCHES**, No CAMI/CR/2657/2006, Granted to MASTERS SPRL by the Cadastre Minier of the Republique Democratique du Congo as PERMIS DE RECHERES No 2621 for gold and diamonds valid for 5 years from 10/10/2006 to 09/10/2011. It is dated 15 DEC 2006 and signed by Jean-Félix MUPANDE Directeur General. Included: Annexe of a list of the co-ordinates dated 12/12/2006.

- 06 FEB 2006 NOTE DE DEBIT No CAM/DF/01661/2007 For US$1,020.00

- RAWBANK, S.A.R.L. ATTESTATION DE PAIEMENT D.G.R.A.D. No 16943/07 dated 20/03/2007 For 568,341 Congolese Francs

Exploration Licence 2622

- ARRETE MINISTERIEL No 1916 CAB.MIN/MINES/01/06 DU 10 OCT 2006 PORTANT OCTROI DU PERMIS DE RECHERCHES No 2622 A LA SOCIETE MASTERS SPRL (*only the first page of this document was observed*)

- 08 NOV 2006 NOTE DE DEBIT No CAM/DF/3001/2006 For US$192.51

- **CERTIFICAT DE RECHERCHES**, No CAMI/CR/2658/2006, Granted to MASTERS SPRL by the Cadastre Minier of the Republique Democratique du Congo as PERMIS DE RECHERES No 2622 for gold and diamonds valid for 5 years from 10/10/2006 to 09/10/2011. It is dated 15 DEC 2006 and signed by Jean-Félix MUPANDE Directeur General. Included: Annexe of a list of the co-ordinates dated 12/12/2006.

- CADASTRE MINIER, DIRECTION FINANCIERE, Département de la Trésorerie QUITTANCE 5766/BF44 for USD 192.51 Kinshasa, le 12.12.2006.

- 06 FEB 2006 NOTE DE DEBIT No CAM/DF/01662/2007 For US$846.60

- RAWBANK, S.A.R.L. ATTESTATION DE PAIEMENT D.G.R.A.D. No 16944/07 dated 20/03/2007 For 471,500 Congolese Francs

Exploration Licence 2623

- ARRETE MINISTERIEL No 1921 CAB.MIN/MINES/01/06 DU 10 OCT 2006 PORTANT OCTROI DU PERMIS DE RECHERCHES No 2623 A LA SOCIETE MASTERS SPRL (*only the first page of this document was observed*)

- 08 NOV 2006 NOTE DE DEBIT No CAM/DF/3002/2006 For US$192.51

- CADASTRE MINIER, DIRECTION FINANCIERE, Département de la Trésorerie QUITTANCE 5767/BF44 for USD 192.51 Kinshasa, le 12.12.2006.

- **CERTIFICAT DE RECHERCHES**, No CAMI/CR/2659/2006, Granted to MASTERS SPRL by the Cadastre Minier of the Republique Democratique du Congo as PERMIS DE RECHERES No 2623 for gold and diamonds valid for 5 years from 10/10/2006 to 09/10/2011 It is dated 15 DEC 2006 and signed by Jean-Félix MUPANDE Directeur General. Included: Annexe of a list of the co-ordinates dated 12/12/2006.

- 06 FEB 2006 NOTE DE DEBIT No CAM/DF/01663/2007 For US$897.60

- RAWBANK, S.A.R.L. ATTESTATION DE PAIEMENT D.G.R.A.D. No 16939/07 dated 20/03/2007 For 500,140 Congolese Francs

Exploration Licence 2624

- **CERTIFICAT DE RECHERCHES**, No CAMI/CR/2660/2006, Granted to MASTERS SPRL by the Cadastre Minier of the Republique Democratique du Congo as PERMIS DE RECHERES No 2624 for gold and diamonds valid for 5 years from 10/10/2006 to 09/10/2011. It is dated 15 DEC 2006 and signed by Jean-Félix MUPANDE Directeur General. Included: Annexe of the list of co-ordinates and a map of the Permis de Recherches dated 28/09/2007.

Exploration Licence 2627

- ARRETE MINISTERIEL No 1917 CAB.MIN/MINES/01/06 DU 10 OCT 2006 PORTANT OCTROI DU PERMIS DE RECHERCHES No 2627 A LA SOCIETE MASTERS SPRL (*only the first page of this document was observed*)

- 08 NOV 2006 NOTE DE DEBIT No CAM/DF/3006/2006 For US$212.23

- CADASTRE MINIER, DIRECTION FINANCIERE, Département de la Trésorerie QUITTANCE 5770/BF44 for USD 212.23 Kinshasa, le 12.12.2006.

- **CERTIFICAT DE RECHERCHES**, No CAMI/CR/2663/2006, Granted to MASTERS SPRL by the Cadastre Minier of the Republique Democratique du Congo as PERMIS DE RECHERES No 2627 for gold and diamonds valid for 5 years from 10/10/2006 to 09/10/2011. It is dated 15 DEC 2006 and signed by Jean-Félix MUPANDE Directeur General. Included: Annexe of a list of the co-ordinates dated 12/12/2006.

- 06 FEB 2006 NOTE DE DEBIT No CAM/DF/01667/2007 For US$933.30
- RAWBANK, S.A.R.L. ATTESTATION DE PAIEMENT D.G.R.A.D. No 16941/07 dated 20/03/2007 For 520,032 Congolese Francs

Exploration Licence 2630

- ARRETE MINISTERIEL No 1924 CAB.MIN/MINES/01/06 DU 10 OCT 2006 PORTANT OCTROI DU PERMIS DE RECHERCHES No 2630 A LA SOCIETE MASTERS SPRL (*only the first page of this document was observed*)

- 08 NOV 2006 NOTE DE DEBIT No CAM/DF/3010/2006 For US$974.10
- CADASTRE MINIER, DIRECTION FINANCIERE, Département de la Trésorerie QUITTANCE 5773/BF44 for USD 974.10 Kinshasa, le 12.12.2006.

- **CERTIFICAT DE RECHERCHES**, No CAMI/CR/2666/2006, Granted to MASTERS SPRL by the Cadastre Minier of the Republique Democratique du Congo as PERMIS DE RECHERES No 2630 for gold and diamonds valid for 5 years from 10/10/2006 to 09/10/2011. It is dated 15 DEC 2006 and signed by Jean-Félix MUPANDE Directeur General. Included: Annexe of a list of the co-ordinates and a map of the Permis de Recherches dated 12/12/2006.

- 06 FEB 2006 NOTE DE DEBIT No CAM/DF/01670/2007 For US$974.10

- RAWBANK, S.A.R.L. ATTESTATION DE PAIEMENT D.G.R.A.D. No 16928/07 dated 20/03/2007 For 542,766 Congolese Francs

Exploration Licence 2633

- ARRETE MINISTERIEL No 2629 CAB.MIN/MINES/01/06 DU 04 AVRIL 2007 PORTANT OCTROI DU PERMIS DE RECHERCHES No 2633 A LA SOCIETE MASTERS SPRL (*the entire 4 page signed document was observed*)

- Notification from Cadestre Minier Kinshasa, le 13 MAR 2007 N/Réf.: CAMI/DG/534/2007 to –Son Excellence Monsieur le Vice-Ministre des Mines à KINSHASA/GOMBE to –La Société MASTERS SPRL Avenue des Plaines, No 1635 à LUBUMBASHI/KATANGA to A Son Excellence Monsieur le Ministre des Mines à KINSHASA/GOMBE. Objet: Transmission des projets d'Arrêtés portant octroi des droits miniers à la Société MASTERS SPRL – (*for signature of Permis de Recherches No 2633*)

- 06 AVRIL 2007 NOTE DE DEBIT No CAM/DF/03187/2007 For US$729.70

- Notification from Cadestre Minier Kinshasa, le 06 APR 2007 N/Réf.: CAMI/DG/451/2007 to – Son Excellence Monsieur le Ministre des Mines, to – Son Excellence monsieur le Vice-Ministre des Mines à KINSHASA/GOMBE to – A la Société MASTERS SPRL Avenue des Plaines, No 1635 à LUBUMBASHI/KATANGA: Objet: Notification Arrêté Ministériel portant octroi du Permis de Recherdhes no 2633

- **CERTIFICAT DE RECHERCHES**, No CAMI/CR/3199/2007, Granted to MASTERS SPRL by the Cadastre Minier of the Republique Democratique du Congo as PERMIS DE RECHERES No 2633 for gold and diamonds valid for 4 years from 04/04/2007 to 03/04/201. It is dated 09 MAY 2007 and signed by Jean-Félix MUPANDE Directeur General. Included: Annexe of the list of co-ordinates and a map of the Permis de Recherches dated 27/04/2007.

Exploration Licence 2634

- ARRETE MINISTERIEL No 1927 CAB.MIN/MINES/01/06 DU 10 OCT 2006 PORTANT OCTROI DU PERMIS DE RECHERCHES No 2634 A LA SOCIETE MASTERS SPRL (*only the first page of this document was observed*)

- 08 NOV 2006 NOTE DE DEBIT No CAM/DF/3013/2006 For US$185.56

- CADASTRE MINIER, DIRECTION FINANCIERE, Département de la Trésorerie QUITTANCE 5776/BF44 for USD 185.56 Kinshasa, le 12.12.2006.

- **CERTIFICAT DE RECHERCHES**, No CAMI/CR/2669/2007, Granted to MASTERS SPRL by the Cadastre Minier of the Republique Democratique du Congo as PERMIS DE RECHERES No 2634 for gold and diamonds valid for 5 years from 10/10/2006 to 09/10/2011. It is dated 15 DEC 2006 and signed by Jean-Félix MUPANDE Directeur General. Included: Annexe of the list of co-ordinates and a map of the Permis de Recherches dated 12/12/2006.

- 06 FEB 2006 NOTE DE DEBIT No CAM/DF/01673/2007 For US$816.00

- RAWBANK, S.A.R.L. ATTESTATION DE PAIEMENT D.G.R.A.D. No 16945/07 dated 20/03/2007 For 454,673 Congolese Francs

Exploration Licence 2796

- **CERTIFICAT DE RECHERCHES**, No CAMI/CR/2683/2006, Granted to MASTERS SPRL by the Cadastre Minier of the Republique Democratique du Congo as PERMIS DE RECHERES No 2634 for gold and diamonds valid for 5 years from 10/10/2006 to 09/10/2011. It is dated 15 DEC 2006 and signed by Jean-Félix MUPANDE Directeur General. Included: Annexe of the list of co-ordinates and a map of the Permis de Recherches dated 28/09/2007.

Exploration Licence 8437

- Kinshasa June 28, 2007 CADASTRE MINIER N/Ref: CAMI/DG/1768/2007 OBJET: Transmission d'un projet d'Arrêté d'octroi du droit minier à la Société MASTERS SPRL (request to the Minister to sign approval of grant of Exploration Licence 8437).

- Kinshasa June 28, 2007 CADASTRE MINIER N/Ref: CAMI/DG/2419/2007 OBJET: Notification D'AVIS Cadastral favorable demande du Permis de Recherches No 8437. (signed approval of the granting of Exploration Licence 8437).

- **CERTIFICAT DE RECHERCHES**, No CAMI/CR/4178/2007, Granted to MASTERS SPRL by the Cadastre Minier of the Republique Democratique du Congo as PERMIS DE RECHERES No 2634 for gold and diamonds valid for 4 years from 02/08/2007 to 01/08/2011. It is dated 21 DEC 2007 and signed by Jean-Félix MUPANDE Directeur General. Included: Annexe of the list of co-ordinates and a map of the Permis de Recherches dated 23/11/2007.

All of the abovementioned tenure documents reviewed by the author were uncertified scanned copies. A legal title opinion was not provided to the author by Kilo or by legal counsel representing Kilo; hence the author has neither seen nor reviewed a legal title opinion on the eleven KGL Masters Project Exploration Licences.

4.3 Interest, obligations, expiration dates

Interest: The registered holder of the mineral rights has a 100% undivided interest in each of the Exploration Licences, subject to the provisions of the Mining Code 2002 and the Mining Regulations as summarized herein under this Section 4.3 entitled obligations.

Obligations: Prior to carrying out exploration holders of a Mineral Right must obtain 'final approval' from the Ministry of Mines. In order to obtain 'final approval' the author has been given to understand that holders of a Mineral Right must first carry out a three day reconnaissance visit on each Exploration Licence and introduce themselves to the local authorities or alternatively substitute the field visit with an airborne geophysical survey, however the author was unable to find reference to this requirement in the Mining Code 2002 nor in the Mining Regulations 2003. Pursuant to the Mining Code 2002 holders of a Mineral Right must complete and submit for approval a Plan d'Atténuation et Réhabilitation de l'environnement *(Mitigation and Rehabilitation Plan (MRP))* prior to exploring the area covered by the Mineral right. Holders of an Exploration Licence or contiguous block of Exploration Licences must submit a report at the end of each calendar quarter. The fourth

quarter (*period ending December 31st*) must cover all activities carried out during the year. Said reports are required to describe the work carried out and state the incurred expenditures. Copies of the reports must be filed with the Ministry of Mines in Kinshasa as well as with the applicable district office(s).

All holders of a Mineral Right must pay Annual rent to the State of DRC prior to March 31st of each year and maintain journals of administrative and technical activities. Rents on the KGL Masters Project property, in United States ("US") dollars, were paid in the amounts of US$2,258.93 in 2006 and US$9,141.24 in 2007; rent in the amount of US$117,300.00 is due in 2008, payable no later than March 31st.

All mineral substances, including artificial deposits, underground water and geothermal deposits on surface or in the sub-soil or in water systems of the national Territory vest in the State of the Democratic Republic of Congo. The President of the Republic is responsible for the enactment of the Mining Code by Decree on his own initiative or on the proposal of the Minister in charge of mines and quarries based on the opinion of the Geological Department or the Mining Registry. The mineral tenure system is provided for in the Mining Code 2002 and in the Mining Regulations 2003. An environmental consulting firm of recognized standing is required for guidance and assistance in regards to environmental matters including preparation of the Mitigation and Rehabilitation Plan ("MRP") required prior to commencing any work. Assuming the recommended exploration programs are successful, it is recommended that Kilo Goldmines Inc., retain experienced legal counsel for advice and guidance with DRC mining law particularly in regards to State entitlements, royalties and the State's right to participate in mining projects.

Summarized herein are the relevant mineral tenure items from the Mining Code 2002 and the Mining Regulations. For a complete review of the mineral tenure the reader is referred to the original documents. Unless specified the information was obtained from a reading of Law No. 007/2002 of July 11, 2002 Relating to the Mining Code.

Pursuant to the Mining Code 2002 the following types of licences or permits may be granted by the Minister in charge of mines and quarries, for the exploration and exploitation of minerals.

- Prospecting Certificate
- Exploration Licences
- Exploitation Licences to cover
    - small scale (artisanal)
    - large scale
    - tailings
    - quarry

Prospecting Certificate

Mineral prospecting is free over the entire National territory except in environmentally protected areas, areas governed by special laws, prohibited areas, restricted access areas, and perimeters of existing mining and or quarry rights.

- issued within five days following receipt of the Prospecting Declaration
- valid for 2 years; not renewable
- successive Prospecting Certificates can be obtained for the same plot of land

- if not issued within five days then the receipt for the declaration of prospecting will be deemed as a Prospecting Certificate
- it is not a mineral or mining right
- not exclusive, does not confer any priority for obtaining of a mining or quarry right
- allowed to prospect freely by methods which do not noticeably affect the local topography in the area specified on the Prospecting Certificate
- samples can be collected and submitted to a lab of choice

Eligibility - to obtain mining and quarry rights

- Congolese national of age, legal entity whose corporate purpose is mining, incorporated pursuant to Congolese law and has its registered office in the National Territory,
- Foreign national of age, and any legal entity incorporated pursuant to foreign law; foreign nationals must elect domicile with an authorized mining and quarry agent in the National Territory, and;
- Any entity carrying out scientific activities

Eligibility for artisanal mining

- Only Congolese nationals of age may obtain and hold artisanal miners' cards and traders' cards

Authorized traders from artisanal mining are;

- Any Congolese national of age
- Any foreign national of age domiciled in the National Territory, and
- Any legal entity, whose corporate purpose is the purchase and sale of mineral substances from artisanal mining, incorporated pursuant to Congolese law and has its administrative registered office in the National Territory.

Mining and Quarry Perimeters

Form of the mining and quarry Perimeters:

- Perimeter is in the form of a polygon consisting of entire contiguous quadrangles subject to borders of National Territory, prohibited areas and protected areas.
- The National Territory is divided into mining cadastral grids that defines the uniform quadrangles with North-South and East-West oriented sides
- The Perimeter does not include quadrangles which are not part of the Perimeter which relates to the mining or quarry rights

Location of the mining and quarry Perimeters

- Geographical position is identified by the coordinates at the centre of each quadrangle making the Perimeter.
- Perimeters are indicated on 1:200,000 scale maps (*Datum ARC 1950 (Zaire)*) retained at the Mining Registry, and
- The mining registry (cadastral) grid and rules pertaining to the identification of the mining and quarry Perimeters are set forth in the Mining Regulations

Overlapping of mining and quarry Perimeters

Overlap can occur only under the following circumstances;

- The Perimeter of a mineral exploration right may overlap with the Perimeter of quarry exploration right or a temporary quarry exploitation right;

- The Perimeter of a mining exploitation right may overlap with the Perimeter of a quarry exploration right or a temporary quarry exploitation right. The part of the Perimeter of an exploration right for quarry products with which the Perimeter of a mining exploitation right overlaps is cancelled by the administration without consultation;
- The Perimeter of a quarry exploration right may overlap with the Perimeter of a mineral exploration right, and
- The Perimeter of a quarry exploitation right may overlap with the Perimeter of a mineral exploration right or, with the consent of the holder or by decision of the Minister, partially with the Perimeter of an exploitation right.

Demarcation of the mining or quarry Perimeters

- The holder must survey, at his cost, the Perimeter within two months of being granted a mining or quarry exploitation title.
- A survey marker post with the holders' name, title number and survey maker identification must be placed at each corner of the Perimeter

Procedure for granting mining or quarry rights and the issuing of mining and quarry titles

Mining and quarry rights subject to tender

- In exceptional cases a deposit studied, documented or worked on by the State may be submitted to tender.
- The Minister reserves the mining rights.
- The President of the Republic must confirm the reservation of the mining rights within 30 days of following the entry into force of the Ministerial Decree relating thereto.
- The invitation to tender is concluded within one year of the Decree.
- The invitation to tender, with terms and conditions are published in the Official Gazette, and in specialized local and international newspapers.
- Bids are examined by an Inter-ministerial Commission.
- Acceptance of bid made in accordance with internationally recognized mining practice
- The Minister published the result and removes the reservation

Priority for Processing

- Applications for mining or quarry rights for a given Perimeter are registered in the chronological order of their filing.

Application for mining or quarry rights

Applications are presented on the applicable form obtained from the Mining Registry. The following information is required;

- Identity, nationality, domicile and address of the applicant or agent, or if a legal entity, name, nationality, registered headquarters
- Professional and legal status of applicant and address if the registered headquarters of legal entity is applicable
- Type of mining or quarry right applied for, and indication of mineral substances to be quarried or mined
- Geographical location of Perimeter applied for and the number of quadrangles constituting the surface area

- Identity of applicants affiliated companies, and nature, number and surface area of Perimeters of the mining or quarry rights already held by the applicant and its affiliated companies
- application must be made in French
- application to be filed to the Mining Registry together with applicant's identity card, and filing fee.

The mining or quarry rights are granted based on favourable opinion from the registrar, and if applicable favourable technical and environmental opinions within 40 days of filing by applicant.

MINERAL AND MINING RIGHTS

MINERAL EXPLORATION

Scope of the Mineral Exploration Licence

- entitles holder exclusive right within the granted Perimeter for period of validity to carry out exploration for mineral substances classified as mines and associated substances if applied for
- holder must obtain approval in advance of its MRP prior to commencing any work
- holder is permitted to collect samples and have them analyzed at a lab of his choice
- approval must be obtained from the Geology Directorate of the Ministry of Mines prior to shipping samples abroad for analysis
- a duplicate sample or sample batch is to be submitted to the Geology Directorate of all of the samples collected within the Perimeter of his title
- exploration work can not become exploitation work
- the holder can convert to an Exploitation Licence if a deposit that can be economically exploited is discovered

Nature of Exploration Licence

Exploration Licence is real property and exclusive right, conveyable and transferable

- right is evidenced by a mining title called "Exploration Certificate".
- In the case of precious stones, valid for four years and renewable for 2 periods each of two years
- In the case of mineral substances, valid for five years and renewable for two periods each of five years
- Surface area of the Perimeter can not exceed 400 km²
- A maximum of 50 Exploration Licences can be held by one entity and its affiliated companies; surface area can not exceed 20,000 km² on the entire National Territory
- Application for an Exploration Licence must be drafted and submitted to the Mining Registry in accordance with the Mining Code
- Proof of financial capacity must be attached to the application
- Application is not subject to technical or environmental evaluations
- Proof of minimum financial capacity, which is equal to ten times the amount of the annual surface rights fees payable for the last year of the first period of validity must be provided by applicant
- Exploration Licence is granted or refused within 30 working days of receipt of the application

- The Exploration Licence can be extended to cover substances other than originally granted, based on submission of reasons
- Any portion of the Exploration Licence can be renounced at any time, however the renounced portion must be comprised of whole quadrangles
- The Exploration Licence expires on the final day of last term of validity, or when it has not been renewed at the end of the first term of validity, or when it has not been converted into an Exploitation Licence or a Small Mine Exploitation Licence
- The holder's environmental responsibility does not expire when the Exploration Licence expires

Renewal of the Exploration Licence requires;

- exploration report for prior term of validity
- application submitted to the Mining Registry at least three months prior to expiry and must include the same information as presented for Application for mining or quarry rights, the number of quadrangles to be renewed and their location, identity of affiliated companies and the nature, number and surface area of the Perimeters of the Exploration Licences held by the holder and his affiliated companies
- Exploration Certificate held by holder and proof of payment of filing costs must be attached to the renewable application
- The holder must relinquish 50% of the Perimeter covered by his licence

Partial conversion into an Exploitation Licence or Small-scale Mining Licence

- A portion of an Exploration Licence can be requested to be converted into an Exploitation Licence or a Small-scale Exploitation Licence; the portion not converted continues as an Exploration Licence
- Several Exploration Licences can be converted into an Exploitation Licence or a Small-scale Mining Exploitation Licence
- An Exploration Licence can be converted into multiple Exploration Licences to cover the area not covered by an Exploitation Licence or a Small-scale Mining Exploitation Licence provided the total number of Exploration Licences does not exceed the maximum allowed by a single person
- Duration of the multiple licences is the validity period of the original licence

MINING EXPLOITATION

Scope of the Exploitation Licence

Exploitation Licence entitles the holder exclusive rights to carry out exploration, development, construction and exploration for mineral substances for which the licence has been granted and associated substances if an extension has been applied for within the area defined by the Perimeter, for the term of validity of the Licence. In addition, it entitles, without restriction;

- access to the exploitation Perimeter to conduct mining operations
- build required mining exploitation installations and infrastructures
- use water and wood within the mining Perimeter for mining exploitation requirements in compliance with the EIS and EMPP
- use, transport and freely sell products originating from within the exploitation Perimeter
- proceed with concentration, metallurgical or technical treatment operations, and transformation of mineral substances extracted from within the exploitation Perimeter
- proceed to carry out works to extend the mine

No other application for a mining or quarry right can be made covering part or all of the area covered by an Exploitation Licence. However, an applicant to whom the holder of an

Exploitation Licence has refused to provide consent to allow opening of a quarry within the Perimeter may submit an application for Quarry Exploitation Licence over the part of the Perimeter subject to the Exploitation Licence but not being used for the mining operations. Failing that, the application is the subject of an administrative litigation process as set forth in the Mining Regulations.

Nature of the Exploitation Licence

The Exploitation Licence is real property, exclusive, conveyable and transferable right which can be leased according to the Mining Code.

- The right is evidenced by a mining title called “Exploitation Certificate”.
- The Exploitation Licence authorizes the extraction of mineral substances for which it is granted.
- The Exploitation Licence can be extended to include associated substances
- It is valid for thirty years, renewable several times for period of fifteen years
- Surface area is that of the original Exploration Licence, or that portion of the Exploration Licence converted
- A person and affiliated companies can not hold more than fifty Exploitation Licences

The preparation of the application for the Exploitation Licence

drafted application is submitted to the Mining Registry together with the following;

- Copy of valid Exploration Certificate
- Report of results of exploration work
- Feasibility study
- Technical framework plan for development, construction and exploitation work for the mine
- Project EIS and EMPP,
- Report on consultations with local administrative authorities and with representatives of the surrounding communities
- Plan on how the project will benefit the surrounding communities
- Financing plan
- Proof of filing costs payment
- Application is received and processed

Conditions for granting the Exploitation Licence

An Exploitation Licence is granted subject to the following conditions;

- Proof of the existence of an economically exploitable deposit
- Proof of financial resources to carry out the development, construction, exploitation and rehabilitation
- Advance approval of the project’s EIS and EMMP
- Transfer 5% of the shares in the registered capital of the company; these shares cannot be diluted.

Granting the Exploitation Licence

Licence is granted within thirty days upon receipt by the Minister from the Mining Registrar of the application provided the conditions for granting have been met

Renewal of Exploitation Licence

Renewable for successive periods of fifteen years

Sale of mining products

- Holder of an exploitation Licence may sell products to customers of choice
- Exporting unprocessed ore out the National Territory requires Ministers authorization; and the applicant must show evidence that it is impossible to treat the ore in the DRC, and the benefits to the DRC must be demonstrated.
- Holder of an Exploitation Licence can exploit existing tailings within the mining Perimeter.
- Holder of an Exploitation Licence can transfer the right to exploit tailings to a third party.
- A Licence for Exploitation of Tailings can be granted by the Minister provided the area is not covered by an Exploitation Licence.

A Licence for Exploitation of Tailings is valid for five years and for several additional five year periods

Small-Scale Mining Exploitation Licence are granted for small-scale mining operations

ARTISANAL MINING EXPLOITATION

- Artisanal mining area can be created on the order of the Minister
- A mining Perimeter covered by a valid mining title cannot be transformed into an artisanal mining area.
- No mining title can be granted over the area except an Exploration Licence applied for by a group of artisanal miners working the area

MORTGAGES

The following can be mortgaged:
- Exploitation Licences
- Exploitation Licences for Tailings
- Small-Scale Mining Exploitation Licences
- Authorizations for Permanent Quarry Exploitation

Mining rights and/or Quarry authorization rights can be leased
Lease contracts must be registered with the Mining Registry

Mineral and/or Quarry exploration rights can not be leased
Mining rights and Authorization for Permanent Quarry Exploitation may be conveyed.

Conveyance of mining rights and Authorization for Permanent Quarry Exploitation must be registered with the Mining Registry.

Mining rights and Authorization for Permanent Quarry Exploitation may be transferred in whole or in part pursuant to a merger or reason of death.

Transfers of Mining rights and Authorization for Permanent Quarry Exploitation must be registered with the Mining Registry.

Exploration Licence may be optioned – the option contract must be registered with the Mining Registry.

OBLIGATIONS OF THE HOLDERS OF MINING OR QUARRY RIGHTS

To maintain mining or quarry rights valid the holder must:
- commence work as specified in the Mining Code
- pay surface area fees each year before the end of the first calendar quarter

Obligations to commence work:
- holder of an Exploration Licence – must commence exploration within six months of the date the licence was granted
- holder of an Exploitation Licence must commence development and construction work within three years from date title granted
- holder of a Small-scale Mining Exploitation Licence or an Exploitation Licence for Tailings must commence development and construction work within one year from date title granted
- holder of an Authorization for Permanent Quarry Exploitation must commence work within six months from date title granted

Obligations to pay annual surface area fees per quadrangle:
- Holder of Exploration Licences, Exploitation Licences, and Exploitation Licences for Tailings and Small-scale Mining Exploitation Licences, Exploration Licence of Quarry Products and the Authorization for Permanent Quarry Exploitation, pays first year fees at time the title was issued.
- Holder pays annual surface area fees per quadrangle for each subsequent year before the end of the first calendar quarter pro-rated to the period of time since the issuing of the initial title, or to the last year of the term of validity.
- Annual fees are paid at the counter of the Mining Registry which issued the mining or quarry title and a receipt is issued.

Calculation of annual surface area fees per quadrangle pursuant to the Mining Regulations which is approximated herein as:
- Payment is calculated in US dollars and made in Congolese Francs
- Holder of an Exploration Licence pays US$0.0255 per hectare for the first two years of the first term of validity; US$0.31 per hectare for the remaining years of validity; US$0.51 per hectare for the second period of validity and US$1.46 per hectare for the third period of validity of title.
- Holder of an Exploitation Licence pays US$5.00 per hectare regardless of term of validity.
- Holder of an Exploitation Licence for Tailings pays US$8.00 per hectare regardless of term of validity.
- Holder of a Small-scale Mining Exploitation Licence pays US$2.30 per hectare regardless of term of validity.
- Holder of an Exploration Licence of Quarry Products pays US$0.005 per hectare regardless of term of validity.
- Holder of an Authorization for Permanent Quarry exploitation pays US$2.00 per hectare regardless of term of validity.

OBLIGATIONS RELATING TO THE ACTIVITIES RELATING TO MINING OR QUARRY TITLES

During prospecting:

- any person carrying out mineral prospecting or prospecting for quarry products must comply with the Mining Regulations

During exploration:

- before commencing mineral exploration work or quarry products exploration work the holder of an Exploration Licence or an Exploration Licence of Quarry Products must prepare and obtain approval of the Mitigation and Rehabilitation Plan (MRP) for the proposed activity.
- Conditions of the MRP and its approval are determined by the Mining Regulations.
- Approval of MRP is under the jurisdiction for the protection of the environment within the Ministry of Mines in collaboration with the Minister of the Environment.

During exploitation:

- any applicant for an Exploitation Licence, an Exploitation Licence for tailings, a Small-scale Mining Exploitation Licence, or an Authorization for Quarry Exploitation must submit an environmental impact study together with an environmental management plan for the project, and obtain the approval of his Environmental Impact Study (EIS) and Environmental Management Plan of the Project (EMPP), as well as implement the EMPP.
- The EIS must cover all aspects of the environment.
- The EIS must include plans to protect the environment.
- Holder of mining or quarry rights must provide security in order to guarantee compliance with the environmental obligations as specified in the Mining Regulations
- Holder of a mining right is authorized to set up provision for site rehabilitation as specified in the Mining Regulations.

PROTECTION OF CULTURAL HERITAGE

- The holder of a mining or quarry right must notify the authority in charge of Culture, Arts and Museums, of the discovery of archaeological indications.
- The holder is not permitted to move items contained in the national cultural heritage list.
- If not moved by the authority in charge of Culture, Arts and Museums within sixty days then the holder must move and safeguard these elements of national cultural heritage.

SAFETY AND HEALTH

- Holders of mining and or quarry rights must comply with the measures decreed by the Mines Administration.
- Any serious or fatal accident in a mine or quarry or in its related operation must be reported immediately to the Mines Directorate and the administrative and judicial authorities in the jurisdiction where the accident occurs.
- Holders of mining or quarry exploitation rights must publish the safety instructions. They must be sent to the Mines Directorate and made known to the employees and individuals who enter the mine site.
- Holders of mining or quarry rights using explosives are subject to the regulations of these substances as set forth in the Mining Regulations.

INFRASTRUCTURE

- Holders of mining rights or Authorization for Permanent Quarry must build and maintain all necessary infrastructures. Prior to construction, plans must be submitted with the local authority having territorial jurisdiction.
- Roads built outside or inside the Perimeter may be used by neighbouring mining, industrial and commercial establishments at their request subject to fair compensation.
- Roads built outside or inside the Perimeter may be opened to the public subject to fair compensation.

VARIOUS OBLIGATIONS

- Prior to commencing work the holder of a mining or quarry title must appear before the local authorities in the jurisdictions where work will take place and submit a copy of the mining or quarry title, and obtain a receipt.
- Holders of mining or quarry titles must keep the registers, prepare and submit reports activities in accordance with the Mining Regulations.
- Holders of mining or quarry titles must submit to mining or quarry operation inspections, as set forth in the Mining regulations, during opening hours.

Expiration dates: Pursuant to the DRC Mining Code 2002 Exploration Licences for metals are valid for an initial period of five years and for gemstones for an initial period of four years provided annual taxes are paid. Taxes are calculated on a calendar basis and must be paid by March 31st of the year of validity. In the year of grant and the year of expiry taxes are pro-rated for the number of days in the year that a Licence is valid. Table 4.3 lists the expiry dates; rents paid in 2006 and 2007 as wll as due in 2008 for each of the KGL Masters Project Exploration Licences.

Table 4.3. Expiry dates and rental fees for the KGL MASTERS sprl Exploration Licences.

Exploration licence	AREA Km²	ISSUED d/m/y	Expiry Date d/m/y	2006 Rent $US	2007 Rent $US	2008 Rent $US
2620	400	10/10/06	09/10/11	182.66	*803.25*	12,400.00
2621	400	10/10/06	09/10/11	231.95	1,020.00	12,400.00
2622	332	10/10/06	09/10/11	192.51	846.60	10,292.00
2624	400	15/12/06	09/10/11	44.71	1,020.00	12,400.00
2623*****	332	10/10/06	09/10/11	192.51	897.60	10,292.00
2627	366	10/10/06	09/10/11	212.23	933.30	11,346.00
2630	382	10/10/06	09/10/11	974.10	974.10	11,842.00
2633	400	04/04/07	03/04/11	000.00	*729.70*	12,400.00
2634	380	10/10/06	09/10/11	185.56	*816.00*	11,780.00
2796	382	15/12/06	14/12/11	*42.70*	*974.10*	11,842.00
8437	120	02/08/07	01/08/11	000.00	*126.59*	306.00
Total	**3,894**		**Totals**	**2,258.93**	**9,141.24**	**117,300.00**

*****Note: the rent due notice for year 2007 indicates this Licence has 352 square kilometres

4.4 Methodology of locating property boundaries

All Mining Rights are maintained on 1:200,000 scale maps (Datum Arc 1950(Zaire)) in the Ministry of Mines offices in Kinshasa. Exploration Licence boundaries are 'paper staked' and the Mining Code 2002 does not make any reference to the requirement of demarcating the boundaries in the field. However, the holder of a mining or quarry exploitation title must, within two months of being granted the exploitation title survey the Perimeter at his cost. A survey marker post with the holders' name, title number and survey maker identification must be placed at each corner of the Perimeter.

4.5 Location of mineralized zones

The KGL Masters Project Exploration Licences were previously worked, in part at least, during the 1920's to 1950's by Compagnie Minière des Grands Lacs ("MGL") and by Comité National du Kivu ("CNKi"). MGL and CNKi focused primarily on exploration for and exploitation of alluvial gold. A compilation report on the archived files in the Royal Museum of Africa (Teveuren) in Brussels, Belgium indicates that gold was exploited from rivers currently within the limits of the KGL Masters Project Exploration Licences. MGL and CNKi did not carry out any significant exploration for gold mineralization hosted within in-situ rocks, (RMCA, 2007).

The author visited two active artisanal gold mines known as the Malaguere and Golgotha on the KGL Masters Project property; both are hosted within quartz veins, and there location is illustrated on Figure 9.0b in Section 9.0 hereof. The Tindika gold occurrence, also visited by the author is situated about 25 km to the west of the KGL Masters Project area.

A number of gold occurrences, and past producing gold mines are known within the Archaean Lower Kibalian volcanic and Upper Kibalian sediments of the Kilo – Moto area in the northeastern part of the DRC. The majority of the Kibalian rocks have not been explored with modern techniques. Other than several active projects, Moto, Kilo (Section 15.1 hereof) this part of the DRC has not been explored since gaining independence from Belgium in 1960.

4.6 Agreements, encumbrances

Kilo – MASTERS SPRL Agreement

The author has reviewed a copy of an agreement duly executed in July 2007 whereby Kilo and MASTERS SPRL agreed to jointly form a Partnership under the following terms:

- MASTERS SPRL and Kilo agreed to create a Limited Liability Partnership in accordance with the laws of the Democratic Republic of Congo and having the name KGL MASTERS SPRL (*Société Privé à Responsabilité Limitée*).

- KGL MASTERS SPRL Capital is fixed at US$100,000 represented by 1,000 units each having a nominal value of US$100.

- KGL MASTERS SPRL units are subscribed to as Kilo 90% (900 units; US$90,000) and Masters SPRL 10% (100 units; US$10,000).

- MASTERS SPRL has agreed to assign and have registered with the Mining Cadastre of the Democratic Republic of Congo ("CAMI") in the name of KGL MASTERS SPRL eight Exploration Licences bearing the numbers 2620, 2621, 2622, 2623, 2627, 2630, 2633, and 2634.

- Kilo has agreed to pay MASTERS SPRL the sum of US$100,000 and 300,000 shares of Kilo Goldmines Ltd., as follows: **a**) US$25,000 on the date the abovementioned eight Exploration Licences have been registered with CAMI in the name of KGL MASTERS SPRL, **b**) US$25,000 six months following the payment stated herein in (a), **c**) US$25,000 six months following the payment stated herein in (b), **d**) US$25,000 six months following the payment stated herein in (c) **e**) issue 100,000 shares of Kilo on the date the abovementioned eight Exploration Licences have been registered with CAMI in the name of KGL MASTERS SPRL, **f**) issue 100,000 shares of Kilo twelve months after share issuance stated herein in (e), and **g**) issue 100,000 shares of Kilo twelve months after share issuance stated herein in (f).

- Kilo has agreed to provide working capital to KGL MASTERS SPRL by way of interest bearing loans; the agreed interest rate is 5% calculated daily, capitalized monthly and payable from KGL MASTERS SPRL generated revenues.

- In the event the Congolese state is granted a share of the capital of KGL MASTERS SPRL Kilo will transfer the requested amount up to 5% of the share capital of KGL MASTERS SPRL from its own shares. The KGL MASTERS SPRL shareholders, namely Masters SPRL and Kilo, will transfer any additional required amount to the Congolese state on a pro-rata basis in accordance to their respective shareholding.

Amendment to the July 2007 agreement:

- MASTERS SPRL assigned three additional Exploration Licences, namely 2624, 2796 and 8437 to the KGL MASTERS SPRL project in an amendment to the July 2007 agreement executed in January 2008.

Note: The January 2008 amendment agreement identified KGL MASTERS sprl ***(****Société Privée à Responsabilité Limitée)* as having been incorporated under the laws of the Democratic Republic of Congo, registered under number KG/1257/M with the New Trade Registry and listed in the National Identification Registry under number 01-193-N49269H and having a business address of 12 avenue Bel Air, Commune de Ngaliema, Kinshasa, DRC.

4.7 Environmental liabilities

There are no pre-existing environmental liabilities known to the author of this report on the KGL Masters Project Exploration Licences. The Mining Code 2002 requires completion of and acceptance of a Mitigation and Rehabilitation Plan ("MRP") (*Plan D'Attenuation et de Rehabilitation ("PAR".)*) before commencing work on the Exploration Licences. The MRP for the KGL Masters Project Exploration Licences was completed as three separate reports in January 2007 and all three reports were accepted by the Cadastre Minier on April 17, 2004. The MRP for Exploration Licences 2620, 2621, 2634 and 2630 was registered under numbers 766, 767, 768 and 769. The MRP for Exploration Licences 2627 and 2622 was registered under numbers 770 and 771. The MRP for Exploration Licence 2623 was registered under number 772.

The MRP stipulates that disturbed soil will be returned to its original state during the course of the exploration program, i.e., soil sample holes will be backfilled, soil contaminated with lubricants, etc will be decontaminated. In the event pits are dug they are to be clearly indicated with signs. The Mining Regulations stipulate restricted areas. Muhiya and Kabemba (2007a, b and c) identified certain restricted areas, as follows:

- Zone reserved for cemeteries: Each village in the area has an area restricted for a cemetery.
- Zones reserved for crop testing or forest re-plantation: This exists as the project area is totally within the dense forest.
- Zone reserved for railway: The railway owned by the Société de Chemin de Fer l'UELE (SEFU) traverses the perimeter
- Zone occupied by an airport: The Beni private airport is on the property.
- Zone situated within less than 90 metres from village, city or town limits: A number of villages occur within the project area.
- Zone constituting a road or highway: Exploration Licences 2621, 2634, 2630, 2620, 2623 and 2627 are traversed by public roads.
- Zone situated on or less than 180 metres from house or building that are occupied, unoccupied or temporarily unoccupied: This situation exits as there are villages on the project area.
- Zone situated on or less than 45 metres from land used for commercial crops or worked as a farm: Commercial crops are not grown within the project area, however there are a number of fields used for the local residents.
- Zone situated on or less than 90 metres from a farm with pasture land, reservoir, or private water dam: No big farms with pasture land exits within the project area, however there are residents within the project area that have goats, sheep, ducks, and pigs for domestic purposes. No reservoir or private water dam exists within the project area.

4.8 Work permits

Prior to the holder of a mineral right being allowed to commence exploration work an environmental report ("MRP") must be completed and approved by the Ministry of Mines and a 'final approval' issued to the holder of the mineral right.

The Mining Code 2002 is silent on the requirement for any other type of 'work permits'. The author recommends that prior to commencement of an exploration program on the KGL Masters Project that enquires be made with the Mining Registrar.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY

5.1 Topography, elevation and vegetation

The KGL Masters Project Exploration Licences cover an undulating terrain that varies from about 900 metres above sea level ("ASL") to about 1,600 metres ASL. The higher terrain is in the southern portion of the property. The property is dissected by numerous creeks, streams and rivers that drain the hills. The hills tend to have gentle to moderately steep slopes and the valley floors are relatively narrow. The property is predominantly covered by

primary tropical rainforest. Figure 5.1a, is a satellite image illustrating the DRC and neighbouring countries. The large streams and rivers are characterized by fast flowing sediment laden brown water as illustrated in Figures 5.1b and 5.1c, whereas some small tributaries draining undisturbed mature tropical rainforest are characterized by clear to semi-clear water.

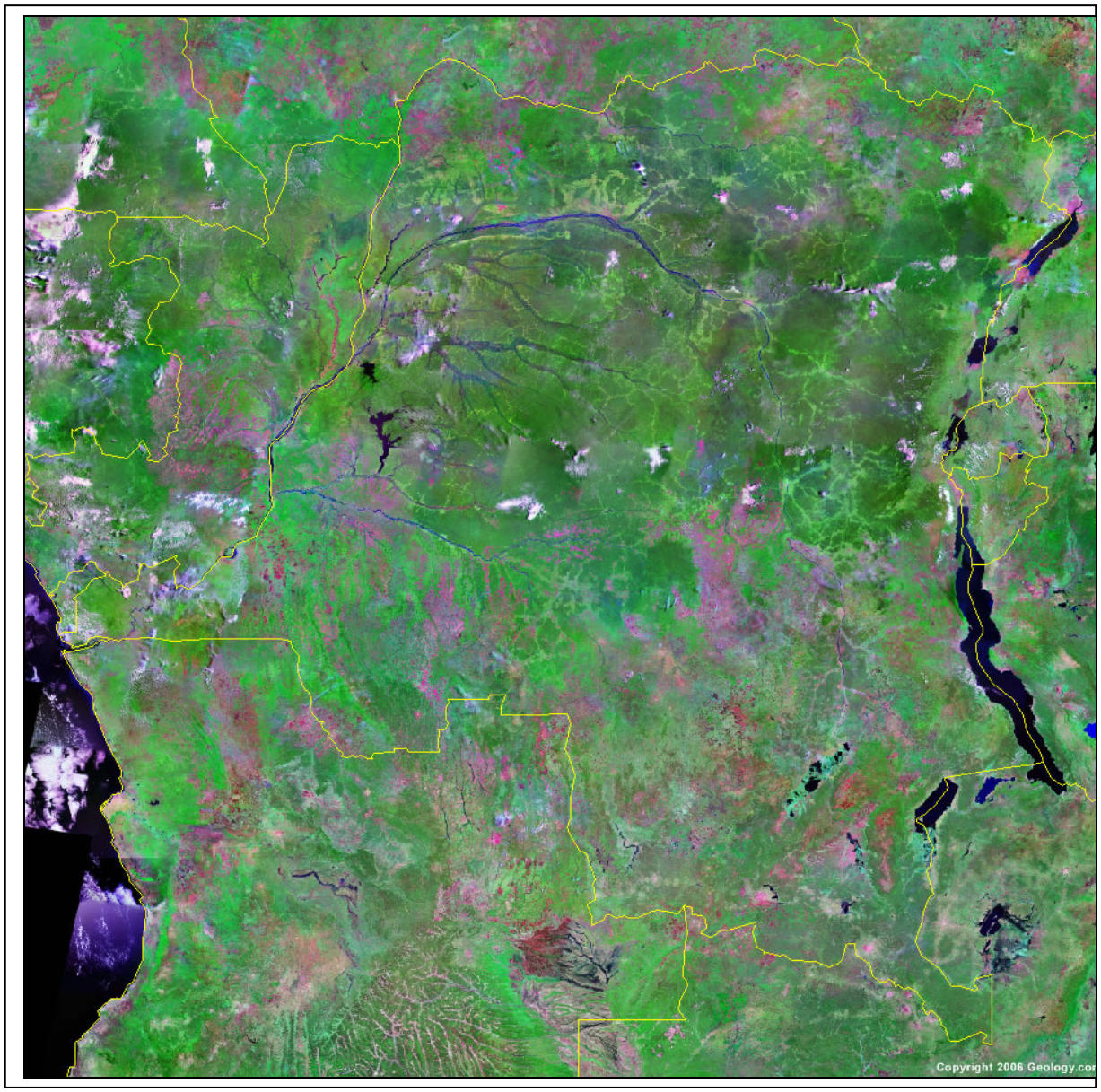

Figure 5.1a. Satellite image of the DRC and neighbouring countries.

Figure 5.1b. Photo of Biakatu River draining the KGL Masters Project, view west.

Figure 5.1c. Photo of the Biakatu River draining the KGL Masters Project, view east.

The vegetation in the northern portion of the property predominantly consists of a mature tropical rainforest as illustrated in Figure 5.1d, interspersed with local cultivated areas, as portrayed in Figure 5.1e near the Beni – Mambassa road.

Figure 5.1d. Photo of the rainforest on the KGL MASTERS sprl Exploration Licence 2633.

Figure 5.1e. Photo illustrating a cultivated area in the rainforest on the KGL MASTERS sprl Exploration Licence 2634.

Logging of mature hardwoods within the KGL Masters Project property occurs mainly on Exploration Licence 2633 within the ENRA forestry permit area illustrated in Figure 5.1f.

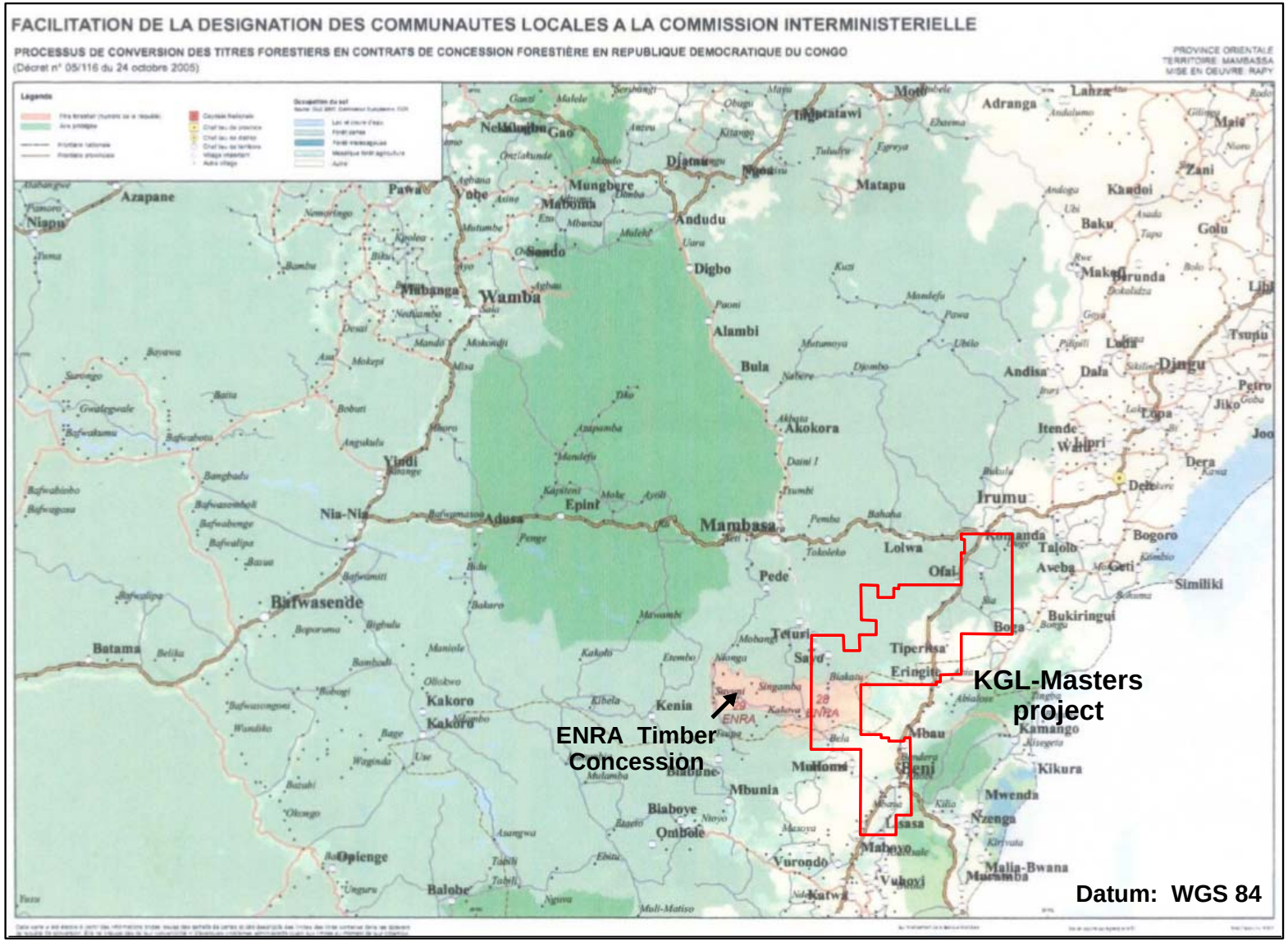

Figure 5.1f. Map illustrating the forest types, the ENRA forestry concession area and the KGL Masters Project Exploration Licences.

South of Beni vegetation on the hills varies from grasslands, to cultivated plots. The grasslands are used to graze cattle, sheep and goats as illustrated in Figure 5.1g.

Figure 5.1g. Photo illustrating undulating topography and vegetation on Exploration Licence 2630; the southernmost part of the KGL MASTERS sprl Project.

5.2 Property access

The property is centered on the community of Beni. Beni is accessible by regularly scheduled commercial flights from Kinshasa via Goma or Kisangani, and from Entebbe (Uganda) via Bunia. In addition, the local communities are linked by commercial flights several days a week. Bunia is accessible from Beni by all-weather gravel road. An aerial view of the Bunia to Beni road in the mature rainforest near Beni is illustrated in Figure 5.2a.

Beni is also accessible by vehicle on all weather roads from Uganda. The author travelled the route from Entebbe to Beni via Kampala, Mityana, Mabounde, Fort Portal, Kasses and crossed into the DRC at Bwera in Uganda, and Kisindi in the DRC. The Ugandan portion of the route is an all weather paved highway, whereas the 77 kilometres from Kisindi to Beni is a narrow laterite road in need of major repairs.

The southern portion of the property is dissected by the all-weather gravel road from Beni to Butembo. The western portion of the property is dissected by the all-weather gravel road from Beni to Mambasa illustrated on Figure 5.2b and the eastern proportion of the property is dissected by the all-weather gravel road from Beni to Bunia.

Access within the property varies from limited in the south to virtually non-existent in the northern portions of the property due to a lack of roads or trails in the dense rainforest,

coupled with numerous fast flowing streams about 3 to 8 metres wide and several metres deep.

5.3 Proximity to population centre, nature of transport

The property is centred on the community of Beni. Beni, illustrated in Figures 5.3a and 5.3b is a moderate sized community with a population of approximately 150,000 limited resources, minimal electric power, and running water. The community is gradually recovering from the period of civil unrest. Security is currently provided by the National Congolese police (*Police Nationale Congolese* ("PNC")), Congolese military (*Force Armée Republique Democratique du Congo* ("FARDC")) and a significant presence of United Nations ("UN") military personnel operating under the designation 'MONUC'.

Figure 5.2a. Aerial view, from near Beni, of the Beni to Bunia road through the rainforest of the DRC.

Figure 5.2b. Photo of the Beni to Mambasa road through the KGL Masters Project property.

Figure 5.3a. Aerial view of the community of Beni, DRC.

Figure 5.3b. Photo illustrating the main street in Beni, DRC.

Transportation from Beni is available via commercial and charter aircraft within the DRC as well as to neighbouring Uganda. Commercial transport by road is readily available by trucking companies operating within the DRC and the neighbouring countries of Uganda, Rwanda, Burundi, and Kenya with connections to Tanzania and beyond.

Some 50 kilometres to the south of Beni is Butembo, a community of 600,000 residents. Butembo is the primary commercial center for the area covering the majority of the north eastern DRC and as far west as Kisangani (Figure 4.1b) with readily available supplies and services.

5.4 Climate, operating season

The climate is typically tropical characterized by wet and dry seasons. The dry season covers the five month period of mid December to April and the wet season covers the period of April to mid December. The average annual temperature is 23.9º C; the annual low 19º C and the high is 30º C. Annual rainfall is 1,600 mm (Muhiya and Kabemba, 2007a, b and c).

Work can be carried out throughout the entire year provided practical logistical measures are in place.

5.5 Mining operation infrastructure

The property appears well-situated for development of a mining venture, as it is at a low altitude in undulating topography accessible by road as well as by charter aircraft.

On-site infrastructure to support a hard-rock mining operation would have to be constructed. The immediate area will not be capable of supplying sufficient materials other than timber to support the construction of mine-site infrastructure. There is an adequate water supply on the property and the topography of the property lends itself to construction of contained tailings ponds, waste rock and mining related infrastructure requirements. There is a significant local labour force, and provided an extensive training program is properly implemented it should be possible to carry out the majority of the mining activities by persons resident in the area. Locally, technically trained personnel are not available hence these positions will require recruiting from other areas.

Other than the main roads that dissect the property roads are virtually non-existent on the area covered by the Exploration Licences, hence roads will need to be constructed to support a mining operation.

6.0 HISTORY

6.1 Prior ownership and ownership changes

During the period from the 1920s to the 1950s the area currently covered by the KGL Masters Project Exploration Licences was included within the exploration domains held by Compagnie Minière des Grands Lacs ("MGL") and by Comité National du Kivu ("CNKi") (RMCA, 2007). The author has no knowledge of any prior mineral tenure ownership of the area of the KGL Masters Project Exploration Licences prior to the Exploration Licences, subject to this report, being granted to MASTERS SPRL since independence from Belgium in 1960.

The author has no knowledge on the existence or non-existence of small-scale (artisanal) exploitation licences within the area covered by the KGL Masters Project Exploration Licences. Pursuant to the Mining Code 2002 the issuance of an Exploration Licence can also include the area covered by a small-scale artisanal Exploitation Licence. The holder of the small-scale artisanal Exploitation Licence takes priority over the holder of the Exploration Licence covering the same area.

The author recommends that the Mining Registrar offices in Mambassa and Kinshasa be researched for the potential existence of small-scale artisanal Exploitation Licences within the area covered by the KGL Masters Project Exploration Licences. The Mining Code 2002 is silent on foreign entities entering into option agreements with the owners of small-scale artisanal Exploitation Licence hence the author recommends that Kilo obtain legal advice as warranted.

6.2 Nature of exploration and development by previous owners

6.2.1 Introduction

Kilo contracted the Royal Museum for Central Africa ("RMCA"), represented by Guido Gryseels, Director General, in December 2006, to carry out a compilation of the RMCA achieves on gold in the region of Beni in the Democratic Republic of the Congo ("DRC"). The compilation focused on the initial eight of the eleven MASTERS SPRL Exploration Licences (*Permis de Recherche*) as illustrated in Figure 6.2.1 (Datum is geodetic ARC 1950) located on map sheets N0/29 (Beni) and N1/29 (Irumu) at a scale of 1:200,000.

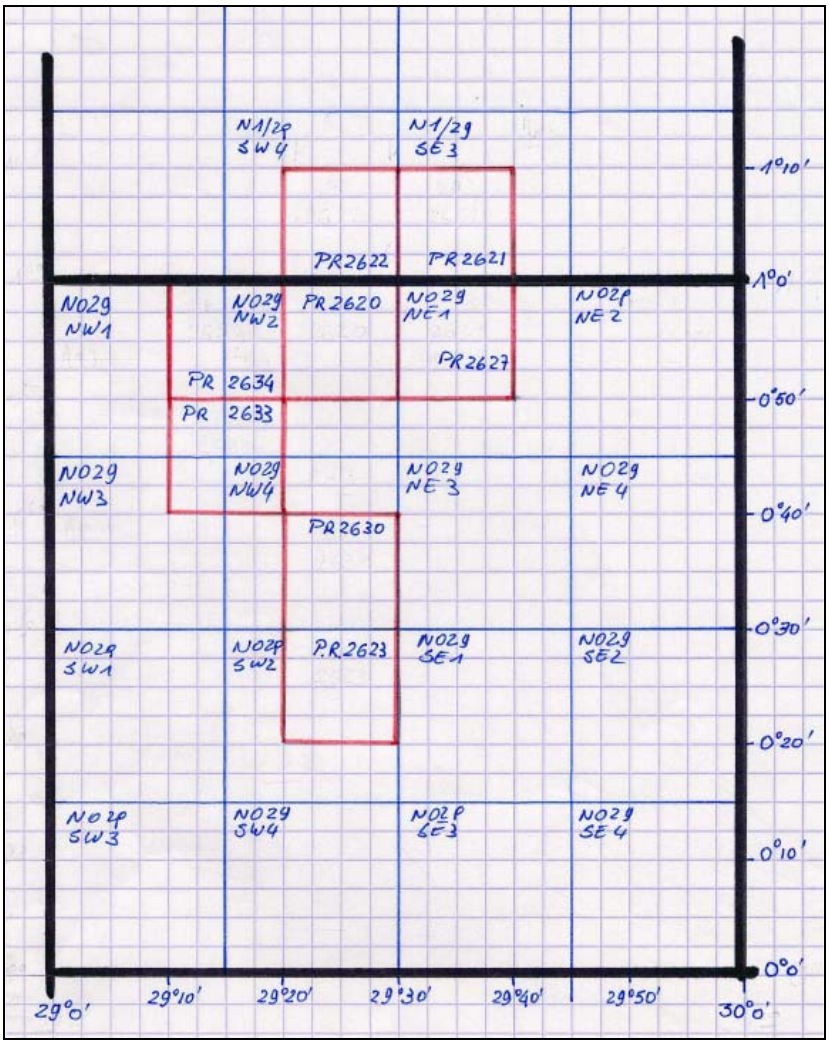

Figure 6.2.1. Map illustrating the KGL Masters Project Exploration Licences on an index map.

RMCA (2007) stated that; "The report is based upon information available to the RMCA at the time of compilation. The information contained herein is based upon RMCA experience and knowledge of the country and upon data compiled from various sources, considered as reliable, and collected from a variety of data sets. While all care has been taken in the compilation, the RMCA hereby disclaims all liability arising out of its use by Kilo Goldmines Inc. While it is believed that the information contained in the report reflects the original information source, the RMCA cannot guarantee the accuracy of the original information source. The use of the report or any part thereof shall be at Kilo Goldmines Inc. risk."

RMCA (2007) also stated that "Most of the consulted archives date from pre-Independence times of the RDC (i.e. pre-1960). In many cases the subsequent mining history of the concerned topics is - as far as we are concerned - may be poorly documented or even unknown. Included data in the report may thus well be outdated."

The author of this report has extracted the following information from the 2007 report prepared by the Royal Museum for Central Africa. The report by the Royal Museum for Central Africa was carried out under the supervision of Guido Gryseels, however the author is not stated hence RMCA (2007) is used herein in reference to the Royal Museum for Central Africa report.

Based on a review of the extensive data files in the Royal Museum for Central Africa (Tervuren) in Brussels, Belgium it has been concluded that all of the rivers on the KGL Masters Project Exploration Licences where prospected for alluvial gold between 1935 and 1955 with pit lines spaced at 400 or 500 metre intervals. Detailed exploration was carried out on 200 metre spaced lines as well as on 100 metre, or less, spaced lines in areas favourable for development (RMCA, 2007).

Often the gold potential of only the main rivers was estimated during exploration surveys. The small tributaries and deposit extensions were prospected during exploitation by the company's geological survey or by the mining department staff (RMCA, 2007).

Exploitation results were systematically higher than evaluation calculations because exploitation generally developed new reserves which were not registered in the annual reserve tables and gravels outside the reserve blocks was excavated (RMCA, 2007).

6.2.2 Exploration on the KGL Masters Project Exploration Licences

The following data was compiled by the Royal Museum for Central Africa (RMCA), Tervuren, in Brussels, Belgium from archived files. The majority of the data is in excess of fifty years old and focused predominantly on alluvial gold. The author of this report considers the data to be quantitative rather that qualitative. Recent data on the KGL Masters Project Exploration Licences other than currently active artisanal sites is not known to the author. The historical data is presented herein for completeness and to illustrate that alluvial gold was exploited from the rivers in the area covered by the KGL Masters Project Exploration Licences. Some of the exploited alluvial gold sites may have an in-situ hard rock source on the KGL Masters Project Exploration Licences. It is noted herein the historical names for some of the rivers and tributaries may not be in current use.

According to RMCA (2007) the river basins on the KGL Masters Project Exploration Licences systematically prospected in order to develop reserves are:

- Exploration Licence 2634: Ituri Left Hand tributaries (G65, G69, Luengba, Butsha, Amalutu), Biakatu, Lalia, Amabasiare, Asefu Left Hand tributaries (Mabindibindi, Mabesha)
- Exploration Licence 2620: Asefu Right Hand tributaries (Massia, Maibwe, Amibale, Namaibwe, Tania, Mohoni)
- Exploration Licence 2633: Itua Left Hand tributaries (Ngohulu, Saliki, Mupe, Satala)

Topographic maps for the northeast DRC are non-existent. The only available maps are 1:200,000 scale geopgraphic maps (Datum ARC 1950 (Zaire)) illustrating the rivers, roads and various infrastructures. These maps are old, and to the best of the author's knowledge only poor quality blue-line copies are available only in Kinshasa. The rivers in the KGL Masters Project Exploration Licences are illustrated on Figure 6.2.2, scanned from a poor quality copy of the 1:200,000 scale blue-line geographic map.

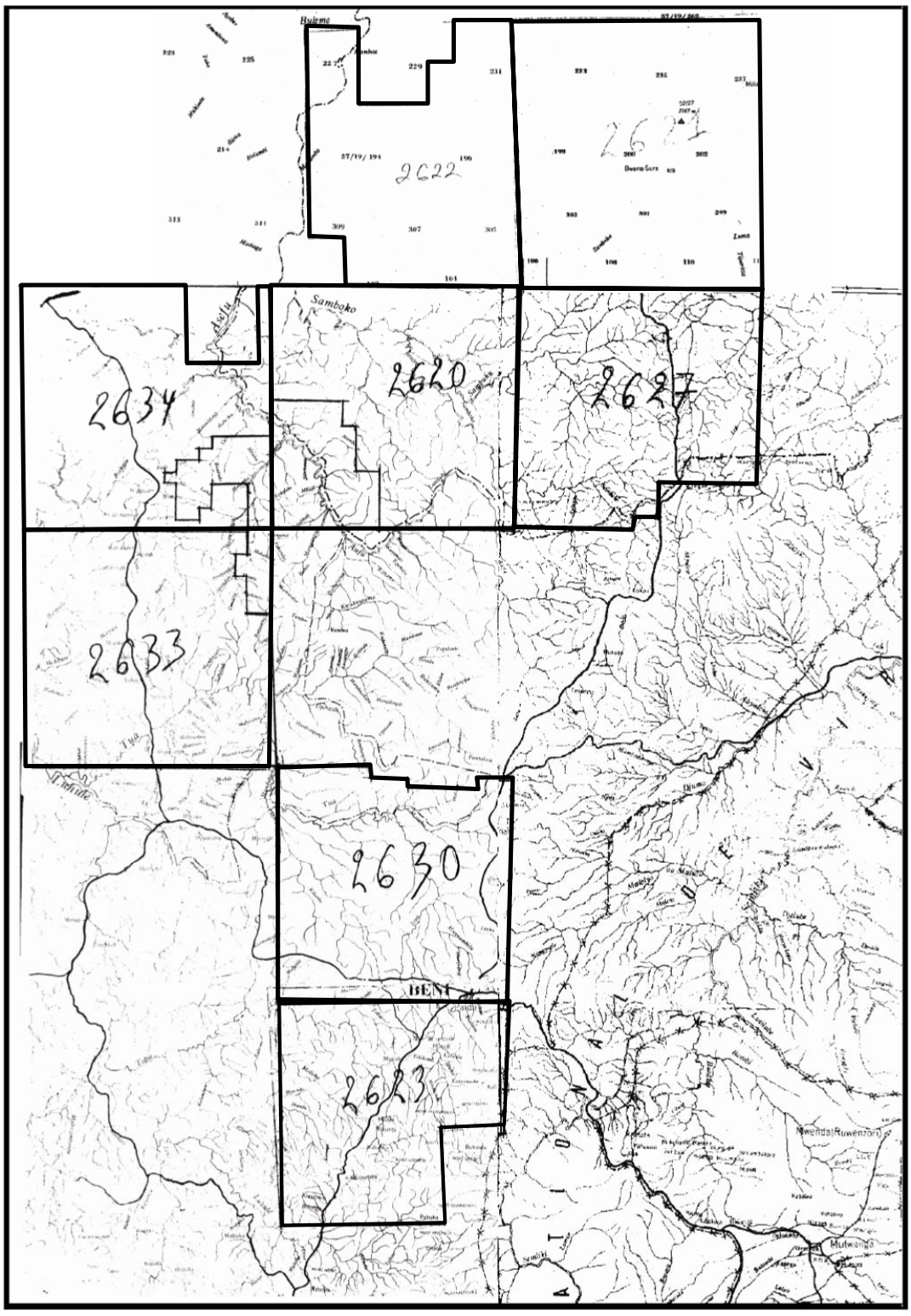

Figure 6.2.2. Map illustrating the rivers in the KGL Masters Project area.

Some of the prospecting was carried out by MGL prospectors, Baudour and Verwilghen, on behalf of CNKi. The prospecting results are summarized in the MGL and CNKi monthly reports and significant comments are listed herein in Table 6.2.2a (RMCA, 2007).

Table 6.2.2a. Significant comments from MGL and CNKi monthly reports by RMCA, (2007).

Exp L	List#	File	u/f.	Title	Comments
2627	1	41A/3	0	Ituri Itua	1944 - 1945
					File: Baudour Ituri, Semliki, Itua
					Prospecting to N and NE of Mamundioma River (Semliki tributary)
					April 1944: prospecting upstream Tshamboko River (= Sambuku) Manzamapina right hand tributary (Ituri basin) on PR 2627 only traces, no grade
					May 1944: prospecting river of Manzamapina R. bank (Sambuku basin) along 8 km. Zone described as completely flush (peneplain). Frequent traces but more or less isolated
2623	2	41A/4	0	Block Beni 4	1940 - 1944
2633					Prospecting Verwilghen, 4 and 5 1940 - Block Beni, Itua and ASLEF basins
					Left hand Itua tributaries: Trace up to G9. G9 is mineralized but unreadable prospecting sheets. Grades also in d1G9
					G9: 9.2 kg Au estimated in a total of 14,130 m³ , exploitable: 1,510 m long
					Makeke: traces and colours, assessed: 4,935 kg, 8,600 m³ total, 1,600m
2634					Mabindibindi (Duma tributary): some grades; estimation: 23,800m³, 12,833 kg Au, length 2,400m
					Prospecting of San: few interest
					Jan. 42: prospecting Asefu right hand bank done
					Feb 42: prospecting Baudour, heads on Asefu right hand bank done and left hand bank begun: small grades but nothing valuable
					March 1942: Tabie River, upstream its intersection with Beni - Butembo road: rare and thin colours
					April - May 1942: prospecting Tabié River continued always no result; granite and occasional basic rocks outcrop, probably amphibolites
2620					*Feb-March 1940*: prospecting Verwilghen
					Matakilembe (1st important right hand Asefu tributary) and tributaries: some gold points non weighable
					Since on Asefu right hand bank, many granitic outcrops on a very metamorphic sedimentary area
					Itua right hand tributaries area, downstream the road: area of few interest
					Taturi (Asefu trib.) and Asefu downstream: no interest
	3	44A/4	0		Ituri, Asefu and Itua basins ; general prospecting Baudour 1940-1941
					April 1940: Satala (**EL2633**) , Uesa and Mabesha (**EL2634**) prospected; Mabesha confirmed evaluation: 17 kg Au

Table 6.2.2a. Significant comments from MGL and CNKi monthly reports by RMCA, (2007) (continued).

Exp L	List#	File	u/f.	Title	Comments
					All grades in Uesa R. are lower than 0.5 g/m³; Satala River: traces only
					May 1940: Duma River downstream; traces or very low grades
					June 1940: Duma River downstream, plenty of black sands within weak gold traces and sporadic grades; Asefu right hand bank, plenty of black sands, traces in the heads of streams, no grade
					July 1940: low grade deposit on D2/Uesa, Gravel: 5,994m³; Overburden 4,225m³; Au 2.825g
					Prospecting Manbidibindi and Asefu left hand tributaries: traces and low grades
					August 1940: Asefu left hand bank and lower Nakota (**Exploration Licence (EL) 2620**)): confirm grades on some pit-lines, no continuity
					Sept. 1940: Nakota basin (**EL2620 and EL2634**): very restricted gold-bearing zones and very low grades
					Oct. 1940: upper Nakota (**EL 2633**), traces and very low grades
					Nov. 1940: Upper Nakota and Makeke downstream, East of the Home-Teturi limit (**EL2633)** ; zone without any economic value
					Dec 1940: Itua basin, left hand bank: zone without any economic value
					Jan. 1941: Itua River left hand tributaries (**EL2630**): including Mondobiena (Mundubiena), Londo, Mangodomo (Mondobiena left side tributary Mondobiena, North of Bingo) zone; no economic gold interest but much iron between Home and Bingo
					Feb. 1941: Itua left tributary and south tributary (Mongodomo), Londo, Malowa (Mulowa, East of Bingo) and Tshipombo (Kibombo) no economic value
					March 1941: Itua upper basin and Itua Left bank (Mondobiena tributaries); without interest
					April 1941: Itua and upper Itua Left bank (Mondelekwa and its Left tributaries Leute, d Dinga, d Luwola): without economic interest
					May 1941: Itua and tributary (Bazamaye and tributary; Manzaiko = d129 Itua, d130 to d139 and g129 to 151 Itua) without economic interest
					June 1941: Itua upstream (d110 to d147, Biahutu = d121, Tule and its trib. Sadi) no economic interest
					July 1941: lower Asefu right hand bank (Leka, Bambou, Likombo, Nania) no economic interest
					Aug. 1941: prospecting of Mambe (Mambo) valley, Asefu R.H. tributary (**EL2620**) and development of a deposit; 3,400m long; average width 7.5 to 8m; Gravel 16,039m³ thickness 1.33m; Overburden 9,192 m³ thickness 0.34m;excavated grade 0.847g/m³; Au 21,395 kg. Thin gold and flattened grains of gold dust. NB: tributaries not prospected, that will be done during exploitation

Table 6.2.2a. Significant comments from MGL and CNKi monthly reports by RMCA, (2007) (continued).

Exp L	List#	File	u/f.	Title	Comments
					Oct 1941: detailed prospecting (lines spaced 400m and pits spaced 10m) in Asefu right trib. between Mambe and Limbekwa (Mahoni, **Ngata**, Tiperissa, Kudu-Kudu, Kano, ***Tukane***, Mabatika, ***Takia***, ***Namaibwe***, Amibalebale, Maibe, Massia, Mawa, Mazua
					Presence of grades (cf. in bolded italic) lacking of continuity due (?) to narrowness of runs; prospecting at 200m to be carried out.
					Nov 1941: Prospecting lower basin of Limbekwa and final development final of Muhoni valley and tributaries G1=Loto, Maha,
					MUHONI deposit: Gravel 26,460m³ thickness 0.50m grade 0.827 g/m³; Overburden 20,606m³ thickness 0.39m, excavated grade 0.465 g/m³; Au 21,901 kg
					Dec 1941: R.H. Asefu tributaries: Liko, Bondo, Oba, Sahuti, Djugu, Sanza,
					Gato R. prospected with 100m spaced out lines; Tukane, Namaibwa and Takia with 200m lines: small pockets with low grades, no interest, cut-off grade lowered to 0.200g/m³
	4	11A/2			MGL Nord Exploitations 1951 - 1954
					u/file 1952
					Ituri basin III exploitation map, blueprint II, Butcha River is G66 and a scheelite vein is localised on G69
					Exploitation map of Butsha
					Exploitation map of Luengba
					u/file 1954, no exploitation maps
		11A/5			MGL Nord Exploitations 1955 - 1957
					nothing in the Exploration Licence area
	5	11A/6			MGL Nord Exploitations 1940 - 1946 - 1951
					Exploitation maps of Butcha, Luengba,
					BIAKATU: closed in 1943
					production tables in 1950: nothing in the EL area
	6	11A/7			MGL Nord - Reserves 1950 - 1961; Annual report 1955
					Annual report 1955:
					Mapembe Nb-Ta deposit: production 1954 = 3,240 kg; prod 1955 = 46,470 kg with a grade of 0.54
					Localisation: hill between d1 and D2/G2/Teturi Occidental and on G4 Left hand bank
					Rating fall during 2nd semester: deposit has to be closed.
					Keke: Nb-Ta exploitation test: no success even if grade of 1.59kg/m³ at L10 of G5/Keke (low rating) and mineralization in d5/g5/G5/Keke with pegmatite
					Exploitation results since Ituri/Luhule Division opening

Table 6.2.2a. Significant comments from MGL and CNKi monthly reports by RMCA, (2007) (continued).

Exp L	List#	File	u/f.	Title	Comments
					Reserves as on 30/06/1961
					Mapembe : Gravel 75,047m³; Overburden 26,586m³; 22,549 kg NbTa; Gravel grade: 300g/m³; exploited grade: 220g/m³
					WO3 and coltan reserves are registered in the table
					Reserves as on 30/06/1951
					Reserves as on 31/12/1951
					Reserves as on 30/06/1952
					Most of mining sites working outside reserve blocks pay
					Luengba (+ Butcha) total reserves: Gravel 62,939m³; Overburden 60,857m³; Au 54,668g; gravel grade.: 0.87 g/m³; excavated grade: 0.44 g/m³
2634	7	11B/1	1	Nord 4A	Jan. 38 - July 38
					Prospecting in Ituri left hand tributary between Asefu and Butcha (G66 à G69)
					Butsha R.H. trib. Prospecting
					Prospecting sheets
					Many of the Butcha tributaries are barren
2634	7	11B/1	2	Nord 4B	Aug. 38 - Sept 38
					G32 Butcha prospecting
					Prospecting sheets
2634	7	11B/1	8	Nord 4H	Apr. 37 - Sept 38
					Butcha basin prospecting
					Evaluation sheets
					limit gold yields calculated as 0.4; 0.5 et 0.6 g/?
2634	7	11B/1	11	Nord 4K	Ituri III - Magbalaba = G52 Ituri
2634	7	11B/1	12	Nord 4L	Nov 36 - Oct 38
					Luengba (G65) basin prospecting and Pankele partly (D30 Luengba)
					Evaluation at 0.6 gr/m³ sheets
					Luengba: Gravel 168,800m³, Overburden 272,150m³, 216,750g Au, Gravel grade 1.3 g/m³ and 0.49 g/m³ excavated
2634	7	11B/1	14	Nord 4N	May 43 - March 44
					Prospecting with tables: G65 Ituri (between Butcha and Luengba)
					Given the nature of gold on L9, right hand and left hand bank, it should be interesting to put exploitations during rainy season.
					gold in grains in L9: but only 0.10 to 0.15 g/m³ excavated!!
2634	8	11B/2	1	Nord 4L	1936 - 1938
					evaluation maps
					Luengba (upstream) L74 is in the EL as are its tributaries D6, 19 and 21
					Pankele (D30 Luengba)
2634	8	11B/2	6	Nord 4H	1937

Table 6.2.2a. Significant comments from MGL and CNKi monthly reports by RMCA, (2007) (continued).

Exp L	List#	File	u/f.	Title	Comments
					Evaluation maps
					Butcha (L1 to L61) and tributary
					Schists at Butcha - Ituri confluence
2634	9	11B/3	3	Nord 3C	Oct 36 - Dec 36
					Luengba (= G65 Ituri)
					Magbalaba = G52 Ituri
					(N.B. Amalutu = G50 Ituri)
					out of EL 2634 unless part of Luengba (?)
2634	9	11B/3	4	Nord 3D	1937 - 1938
					Luengba (D6, D19 and D21 trib. Are in North of **EL2634**).
					Low and large terraces in Luengba River with huge thickness of agglomerated overburden; interesting grades in terraces
					Few grained gold unless in heads of G11 Luengba
					Detailed data
2634	9	11B/3	5	Nord 3E	1937 - 1938
					Luengba
					01/38: D11, D12, D13, D14 Luengba: no gold
					02/38: D16 à D19:2.735 g Au
					03/38: D20: fine gold, no grains, D21: fine and grained gold; total D20 and D21: 22454 g Au
					05/38: D22 to D30 (Pankele): rock outcrops 10m downstream L2 Pankele
					06 to 08/38:***Pankele evaluation*** : 46.661 g Au; no gold in heads
					08-09/38: upstream L19 Luengba till G25; upstream L70, outcrop of phyllades (falls); Estimated gold content: 20,231g Au
2634	9	11B/3	7	Nord 3G	1937
					Butcha L1 to L17, ***D1*** and ***D2***
					04/37: Butsha L1 to L4, excavated Gravel 0.60 = 0.61 without grains, reserve 4,107g; ***D1Butcha***: big grains at BR limit
					08/37: ***D1Butcha*** gravel grades may reach 7.25g/m³ but recalculated at 2.90g/m³ without grains (d5D1Butcha)
					Gold nuggets and not worn (no rolled) in D1Butcha between L6 and L18, nuggets increase upstream.
					Upstream L17, probable vein on L. bank (+/- 300m upstream of g2D1)
					High grades to 27.72g/m³ confirmed by control pits 3m apart, in d5D1Butcha
					09/37: terraces between L1 and L12 Butcha, and strong grades between L9 and L12
					Gold bearing pebbles collected in P2L5Butcha, P9L5Butcha (quartz) and P2L1d1G2Butcha
					D2Butcha is excessively rich: 19.726g Au with nuggets; 8.980g Au no nuggets for 7 lines (1,200m)

Table 6.2.2a. Significant comments from MGL and CNKi monthly reports by RMCA, (2007) (continued).

Exp L	List#	File	u/f.	Title	Comments
					10/37: gold bearing quartz in P5L15Butsha; outcrop in P14L17 is quartz
					12/37:interesting grades in 2 pits dug on the hill to the heads of g2D1/Butsha2
2634	9	11B/3	8	Nord 3H	1937 - 1938
					Butcha L17 to 19, ***D5Butcha***
					11/37: ***Butcha upstream*** L16 and tributary upstream ***D3Butcha***
					Pits dug on terraces of lines 17 and 18, no results (traces)
					quartz vein in P1 and P2 L18 and in P14 L17: gen. Dir. 35°, slope 80° (?!)
					01/38: granitic outcrop at L14 D5Butcha
					03/38: Butcha L21 to 26 and tribututary G6
					04/38: Butcha L27 to 30 and Left tributary
					05/38: Butcha L30 to 43 and tributary G11 to 17
					06/38: Butcha L43 to 54 and tributary G18 to 26
					07/38: Butcha L55 to 63 and tributary G27 to 42
2634	10	11B/4	1	Nord 1A	1935
					Mababiende = G67 Ituri: only colours and traces
					Out of zone: ***Ituri from*** G1 to G42 (***Mutumo***) N.B. G10=Papuyu, G33=Pondo
					on G27: schist/diorite contact
2634	10	11B/4	2	Nord 1B	Middle and occidental Ituri
2634	10	11B/4	3	Nord 1C	Error on G47 Ituri name: not Amalutu but Apekele
	10	11B/4	4	Nord 1D	Middle Ituri (downstream Tupo falls)
	10	11B/4	5	Nord 1E	Mandgengelu = G7 Teturi; out of zone
2634	10	11B/4	6	Nord 1F	***Asefu, downstream*** = G70 Ituri
					12/37: few grades in ***Duma*** River (G1 Asefu)
					G4 Asefu prospected along 770m till MGL domain limit
					No valuable grades on Asefu prospected until line 14, G 1 to 10 and D 1 to 14
	11	11B/5	1	Ituri Nord	1951 - 1953
					Research for veins and eluvium on hill between Teturi / Amalutu
					Out of zone but interesting about veins structure and grades
					Decimetric width veins, dir N40 to 50°W, dip to East
					Grades: none to traces, some exceptions at some g/t
					No evaluation nor synthesis report
	11	11B/5	2	Ituri Nord	1952
					Exploration on itabiritic belts downstream of Amalutu basin
					Highest grades are: length of 4m with 4.30g/t amalgamable gold = 8.45 g/t total gold

Table 6.2.2a. Significant comments from MGL and CNKi monthly reports by RMCA, (2007) (continued).

Exp L	List#	File	u/f.	Title	Comments
					length of 3m with 0.65 g/t amalgamable gold = 2.40 g/t total gold
					In the deep pits dug in the trenches, sometimes high grades are encountered:
					excavated: pit 51 in TR1: to 4.70g/t amalg. gold = 10.20 g/t total gold
					excavated pit 52 in TR4: to 4.60 g/t amalg. god = 8.60 g/t total gold
					The main itabiritic zone is with lenses: length: 180m , maxi width =20m
					Samples collected in trenches bear generally low grades but may reach 5.8 g/t total gold (samples 134 to 143 = 60m in Trench 9)
2634	12	11B/6	3	Nord Ituri	1951
					Exploration for quartz veins on hill between D1 and D5/Butsha
					Rare grades between 1 and 2 g/t amalgamable gold in veins which are rarely wider than 80 cm
					Trenches: generally barren except some grades lower than 0.8g/t amalgamable gold on lines 10 and 11 East
Out of zone	12	11B/6	4	Nord Ituri	1951
					Vein exploration on hill between g4G41Ituri and G40B Ituri
					Only Vein # III (filon III) has interesting grades: 9.10 g/t total Au (6.85 g/t amalgamable); 13 g/t amalgamable
2634	12	11B/6	6	Nord Ituri	1953
					Exploration for veins and itabirites on hill Magbalaba - G56 Ituri and hill G56 - g1G56 Ituri
					Trenches and adits along filon 1
					Vein 1 (quartz) recognized along 165m, width to 90cm
					Grades in trenches: from 4.40 g/t total gold (3.40 amalgamable) to 19.30 g/t total gold (16.65 amalgamable)
					Grades in adits: to 7.65 g/t amalgamable
					Itabirites are barren
2634	12	11B/6	7	Nord Ituri	1951
					Exploration on road G23 Luengba: all grades are = N
					1/5,000 map showing D15 to D18 Amalutu and G23 Luengba with more than 2.5 g/m³ in gravel and gold bearing quartz found during exploitation in G16 Luengba
2634	13	11B/7	1	Nord Ituri	1952
					Exploration for veins on hill G16-G17 Luengba
					sampling trench 6: rare grades of amalgamable gold always lower than 0.25g/t
					Exploration for veins on hill D15-D18 Amalutu

Table 6.2.2a. Significant comments from MGL and CNKi monthly reports by RMCA, (2007) (continued).

Exp L	List#	File	u/f.	Title	Comments
2634	14	11B/8	2	Luengba	Detailed 1:1,000 map of Luengba between L10 and L14 and tributaries D8 and D9Luengba
			3	Butcha	Detailed 1:1,000 map of some lengths of Butcha
2634	15	13C/6	1	Nord 11B	1938
					Biakatu tributary D21 to 24A, Lalia R.= D21
					On Lalia, 6 pits on 3 lines show grades for 0.21 to 0.44 g/t, other tributaries are barren (traces and colours)
				Nord 11A	1936
					Prospecting on Biakatu upstream Elei River (D0 haute Biakatu), not in the EL area
2633	16	13C/7	1	Nord 13A	1938
					Prospecting D25 and D26 Biakatu and Amabasiare (D27 Biakatu)
					On D25, with limit grade at 0.30: 520m; Gravel 756m³ thickness 32cm; grade 0.67g/m³; Overburden 380m³ thickness 16 cm, excavated grade 0.45 g/m³; Au 512g
					on D26, with limit grade of 0.30: 574m; Gravel 1,020m³ thickness 36 cm; grade 1.20g/m³; Overburden N; excavated grade 1.20g/m³; Au 1,230g
					Amabasiare River is highly mineralized with few overburden and grained gold, particularly its tributaries g10 (40m at 2.22g/m³); g11 (150mwithà 0.90g/m³), g1/d5 (30m with 0.74g/m³); d8 (150m with 0.78g/m³); d10 (495m with 0.76g/m³exc); g14 (300m with 0.78g/m³exc); g15 (200m with 0.70g/m³exc); d12 (145m with 3.34g/m³exc)
			2	Nord 13B	1938
					Aug. 1938: Prospecting L9 and L10 Lalia, D5 , D6, G2 and G3 Lalia = barren
					Sept 1938: Prospecting D5 (end), D7 to D10, G4 to G8 Lalia = barren
					Oct 1938: Prospecting G10 to G14/Biakatu, L11 to 23 Lalia, G9 to G12 Lalia, D11 to D13 Lalia: isolated grades on L13, 19, 21, 23 Lalia; L24 Lalia pays; L1/D13/Lalia pays
					Nov 1938: Prospecting Lalia: D13 Lalia (end); D14 to D17 Lalia, G13 and G14 Lalia some lines with low grades
					Dec 1938 Prospecting Lalia L28 to L40; G14 to G19/Lalia; D18 to D23/Lalia
					- nearly continuous run on Lalia between lines 29 and 40: Gravel 9,351m³, Overburden 4,940m³, Au 7.308g
					- reserves also developed on G14, G19, D22 and D23/Lalia
					Coarse gold at bed rock contact
			3	Nord 13C	1938
					Nov. 1938: Prospecting Ngaka (G37/Biakatu); D29 and D30/Biakatu: only one paying grade line in d9D30/Biakatu (890g Au)

Table 6.2.2a. Significant comments from MGL and CNKi monthly reports by RMCA, (2007) (continued).

Exp L	List#	File	u/f.	Title	Comments
					Dec. 1938: Prospecting D30/Biakatu and G7/Lalia: 3.246g Au in D30/Biakatu and 25.155 kg Au in G7/Lalia
					G7 Lalia, from L10 to L35: Area 22,140m², Gravel 10,634m³; Overburden 7,216m³, Au 8.003g
					g5 to g9 of G7/Lalia also mineralised and reserves developed
			4	Nord 13D	1938
					Nov 1938: Prospecting G17 to G19/Biakatu: 1,277g Au in G18/Biakatu
					Prospecting L1 to L9/Mangwangalu and G1 to G10/Mangwangalu
					Development in G18/Biakatu (Limit grade 0.30): 4,455m², Gravel 1,924m³ grade 0.67g/m³; Overburden 1,2O4m³ excavated grade 0.41g/m³
					Dec 1938: Prospecting Makwangalu and Lalia
					Development Lalia (limit grade 0.30) 8,065m³, length 810m; Gravel 4,834m³ grade 0.92 g/m³; Overburden 5,373m³ excavated grade 0.44g/m³
					Development of 1,202 kg in D25 Lalia; 603 g in g1D25/Lalia; 525g in G31/Lalia
			5	Nord 13E	1938
					Abstract of evaluations Ibina, Lalia and Biakatu basins with grade limits of 0.3, 0.4, 0.5 and 0.6
			6	Nord 13Ebis	Complete 1/1,000 maps of these evaluations
	17	14A/4	1		Upper Ibina, Bilindu region, out of area
	18	14A/8	1	Lower Ibina	1936
					Dec 1936: Prospecting in Ituri oriental Left tributary: Luengba (G65 Ituri or.): evaluation of 12.251kg Au (LG 0.30). Downstream, excavated grades 0.3 to 0.40g/m³ and fine grained gold; upstream, (L17, 18), coarse gold and even nuggets
					Oct 1936: Upper Biakatu recognition by Lhoest; no evaluation
			2-4		out of area
	19	14B/3	3	Nord 6C	1937
					May 1937: Prospecting by Herman: Ibina, both banks between N'Gema and Luhule. Some colours, no grades. This is confirmed by Lhoest prospecting (Left/Ibina tributaries, from G21 to G68=Ekato and Right/Ibina trib. from D9 to D61 = Mekbata). General table of grades of the Low Ibina Mission, established by Lohest
	20	13A/9	2	Prospect 2	May 1954: Nb-Ta Prospecting in Teturi occurrence; Area 10,750m²; Gravel 5,895m³ thickness 56cm grade 265g/m³; Overburden 1,815m³ thickness 17cm excavated grade 200g/m³; Au 1,540kg

Table 6.2.2a. Significant comments from MGL and CNKi monthly reports by RMCA, (2007) (continued).

Exp L	List#	File	u/f.	Title	Comments
					Eikelboom comment: (?) paying cube payant often too small for exploitation
					Dec 1954: Nb-Ta prospecting in Keke, out of area
					Jan. 1955: idem
					Jan. 1955: Mapembe eluvium evaluation
					Zone 1: 9,950m²; Gravel 9,550m³ gravel: 1,552g/m³; Overburden. 1,690m³ excavated grade 1.318g/m³; Au 14,821kg
					Zone 2: 75,700m²; Gravel 50,778m³, grade 471g/m³; Overburden 15,336m³ excavated grade 360g/m³; Au 38,756kg
					March 1955: NbTa eluvium on G4 Teturi hill: Gravel 29,590m³, grade 285g/m³; Overburden 11,361m³ excavated grade 206g/m³
					June 1952: Research for veins by pits, trenches and adits on hills upstream G2, G5, G11/Amalutu; G16, G17/Luengba; G23, G24/Luengba
					Oct 1953: Wilhelmy report: no or weak gold mineralization in heads of Biakatu (0.8)
			4	Maps	Set of 1:5.000 maps "Alluvial mineralization distribution after exploitation results as to end 1950"
			5	Ituri	1951-1953 vein researches on: g4/G41-G41/Ituri g4/G41-G40B/Ituri G41-d8/G41/Ituri D6-d3/D6/Teturi D6-d1/D9/Teturi d1/D9-D9/Teturi
	21	14E/5	3		Reductions to 1:5,000 of LUENGBA prospecting (Jacquier, Samain and Robert) + abstract reserve sheets
					Reductions to 1:5,000 of Teturi prospecting (Rousseau) + abstract reserve sheets
					Reductions to 1:5,000 of Butsha prospecting (Dolhen, Huygens, Foos, Rousseau) + abstract reserve sheets
			4		Reductions to 1:5,000 of Ituri III prospecting + abstract reserve sheets
					Reductions to 1:5,000 of Amalutu (Foos, Jacquier) + abstract reserve sheets
					Reductions to 1:5,000 of Biakatu prospecting + abstract reserve sheets
	22	2C/10	0	MGL	1944 Monthly reports
					June 1944: production and reserves
	24	2C/4	0	Mines Nd	1940: Monthly reports SEM II
	26	2C/6	0	Mines Nd	1941: Monthly reports SEM II
					detailed mining results of the year
	28	33A/11	4		Out of area
	29	33B/3	6	Butsha	homonym located in Kivu
	30	33E/8	2		Out of zone

Table 6.2.2a. Significant comments from MGL and CNKi monthly reports by RMCA, (2007) (continued).

Exp L	List#	File	u/f.	Title	Comments
	31	35A/8	2	Miss Landa	Out of zone
	32	35E/8	2		Out of zone
	40	3C/5	0	MGL	1946: monthly reports, June to Dec. with monthly production figures
	41	3C/6	4	MGL	1947: April report: reserve table as to 31/12/46
	42	3C/7	1	MGL	1948: July report. 175 kg scheelite produced in G69/Ituri L4 (Butsha group). Scheelite also in G69 L5 and G69B L4.
	43	3C/8	1	MGL	1948: Jan. 1948
	45	46B/1	1	CNKi	1951: Debroux reports Polygone Asefu-Uessa-Nakota: probable reserves Ploygone Isiy: probable reserves Itua and Mamba deposits; reserves list Abia-Lesse deposit
			3		1950: 1949 Detailed reserves table for tributaries of Tiperitza (Luna inclusive), Lesse (Lower Semliki), Mambe-Muhoni (Lower Asefu), Itua, Luhule,
			4		1949(?) Lesse and Tiperitza
	46	46A/1	1		1933: Luhule: exploitation test of a small deposit with low grades(0.13g/m³) = failed
			12	CNKi	1942: Annual report
					Beni Region:
					Evaluation Asefu-Kiliatshu and Liliatshu: Gravel 8,597m³ grade 0.33g/m³; Overburden 5,741m³ excavated grade. 0.79g/m³; Au 11,401g (Baudour)
					Bango (Abia basin) evaluation: Gravel 11,400m³ grade 0.57g/m³; Overburden 7,225m³; excavated grade 0.35g/m³; Au 6,530g(Ghilain)
					De San report: zone I, Left bank of Ituri West of Irumu in barren; the zone II, East of the Beni-Irumu road to be studied south of Loyo, what was done until parallel of the Luna source; zone III, West of the Beni-Irumu road (Asefu basin) was studied by Baudour in 42; zone IV, including the Tabie basin, Itua and Asefu downstream was studied(**EL 2623**) except an area West of Mt Home
	0	46A/2		CNKi	Annual reports 1943 to 1952
			1		1943: Block Beni: Tokuhu evaluation (to SE of Mt Home) Gravel 4,299m³ grade 1.08g/m³; Overburden 2,619m³ excavated grade 0.78g/m³, Au 4,639g (Baudour)
					evaluation of Mambe/ Gravel 1,485m³ grade 0.62g/m³; Overburden 978m³ excavated grade 0.35g/m³; Au 880g (Baudour)
					ITUA basin finished without success by Baudour
			2		1944: Systematic prospecting of bloc Beni by Baudour goes on without any result
			3		1945 N
			4		1946 N

Table 6.2.2a. Significant comments from MGL and CNKi monthly reports by RMCA, (2007) (continued).

Exp L	List#	File	u/f.	Title	Comments
			5		1947 N; no exploitation in the Beni area
			6		1948: Reserves table as 31/12/1948
			7		1949: Reserves table as 31/12/1949
			8		1950: Reserves table as 31/12/1951
			9		1951: Aiming exploitation, preparation of Tiperitza deposit
					MGL is mining on behalf of CNKi small deposits covered by Tokohu and Luhule-Ingobo permits
					Production: 7,399g Au in 1951
					Reserves table as to 31/12/1950
			10		1952: Production of Luhule-Ingobo and Tokohu: 9,092g Au
	0	46A3/1		CNKi	Annual reports 1953 to 1959
			1		1953: No prospecting in North, no reserves table in report
			2		1954: Exploitation goes on in Tiperitza; opening of a new center: TONZA (P.E. LESSE)
					MGL is mining on behalf of CNKi small deposits covered by Tokohu and Luhule-Ingobo permits Production: 8,979g Au in 1954
			3		1955: Tiperitza-Abia still producing
			4		1956: Tokohu still exploited by MGL: production: 11,260g
			5		1957: Tiperitza begins to decrease: has already produced more than initial reserves
					Tokohu produced 5,843g Au, mid-1956, the deposit is near end
			6		1958: Luhulu-Ingobo: exploitation by MGL stopped in March 1958, production: 335g in 1958
					TSHAMATEMBE (localization ?), small permit, given to enterprise for exploitation; produced 3,391g in 58
		46A/4	6	CNKi	1958: Agassiz, report 4T 1958
					Itua: in exploitation; development: total cube 12,093m³; Au 12.84g, excavated grade 0.75g/m³
					1959: Agassiz, report 4T 1959
					Beni region: alluvial systematic prospecting Asefu basin (P.E. Kakutama) finished. Buyu basin study begun
					Evaluation of Asefu: 38.8 kg Au at 0.63g/m³ excavated in place of 111.2 kg at 0.83 first estimated
					1957: Agassiz, 1st sem 1957 report
					systematic prospecting on Itua P.E. finished
					1957: Agassiz, January 1957 report
					Itua prospecting finished, has given 217.232 kg Au at 0.92g/m³ exc.
					1955: Piron, report on prospecting Nov - Dec 1955

Table 6.2.2a. Significant comments from MGL and CNKi monthly reports by RMCA, (2007) (continued).

Exp L	List#	File	u/f.	Title	Comments
					Abia River prospecting: tributaries D32 to D34 and G33 to G38 of Lesse: no continuous grades except in D33bis where a small reserve was developed: Area 1,560m²; Gravel 518m³ grade 1.38g/m³; Overburden 512m³ excavated grade 0.69g/m³; Au 715g
					Baudour made a random prospecting (volante) for evaluation in the Beni Region (Feb-Dec 1940):
					Area. 744,179m²; Gravel 270,112m³ thickness 0.36m; Overburden 343,111m³ thickness 0.46; excavated grade 0.43g/m³; Au 266,462g
			8		1952: 1951 updated reserves
					Abia-Lesse: Lesse D35, D16 and G39: Gravel 38,821m³; Overburden 53,931m³, total 92,752m³, excavated grade 1.37g/m³; Au 127,614g,(among these reserves, 121,460 g Au were already registered in former reserves)
49		46B/4			
50		46E/7	9	CNKi	1951: MAMBE polygon
					Probable reserves table (detailed figures available in this file)
51		4D/4		MGL	1939: Annual report
					1938: Annual report
					Random prospecting (volante) in Lindi River and Luhule River, systematic prospecting and Biakayu deposit evaluation
					Teturi: difficult to provide mining sites with water
					Studies begun on Amalutu, Luengba and Butcha
					1937: Annual report
					Ituri Division: exploitation only of Tokoleko on behalf of COMINOR
					Random prospecting (volante) in Left tributaries of Oriental Ituri
					1930-36 Until 1937, the cut-off grade was 0.60g/m³
					1930: exploitation average grades in Mines du Nord (Upper Lindi and Upper Lenda) Grade 3.96, excavated grade 2.52g/m³; in 1929 grades were 5.17 and 3.84
					Exploitation grades change from reserve grades as demonstrated for Upper Lindi, Upper Lenda, Lubero and Mines Nd in Table 6.2.2b.
52		4D/5		MGL	1940-45 annual reports
					1941: systematic prospecting on Luhule River, downstream N'Doma
					1942: local **occurences on vein gold**
					On all mine sites of Ituri and Luhule Divisions, the tailings and coarse rejected stones were sampled before researches for veins
					Gold occurrence pointed out in arkoses of Manguredjipa

Table 6.2.2a. Significant comments from MGL and CNKi monthly reports by RMCA, (2007) (continued).

Exp L	List#	File	u/f.	Title	Comments
					In Lubena, quartz vein with arsenopyrite and visible gold
					1943: primary deposits research (most of the geological survey staff were moved to SnO2 and NbTa prospecting)
					Development of 400 tons with grade of 45.4g/t; Au 18kg; in Manguredjipa (impregnation deposit?)
					Lubena: works stopped; average grades too low
					1944: researches for vein deposits go on
					1945: idem
54		4D/7		MGL	1954-60 Annual reports
					1954: gold prospecting for veins stopped
					Lubena: Exploitation of vein in d1G7Lubena was stopped: grades lower than 1G/t
					Amalutu: underground works stopped; Nb-Ta and WO3 prospecting maps
					Luengba: no result in trench G23
					1955: Div. Ituri-Luhule includes 3 "groupements": Teturi, Bela and Lubena
					Teturi is active almost for coltan in Mapembe but output diminishes (low rating)
					Coltan production test in Keke but too low grades taking in count low rating
					Only Lunzaye is exploited in Teturi Division
					1956: out of EL
					1957: idem
					1958: Lubena exploitation stopped in May 1958: unprofitable. Exploration and exploitation tests on tailings and on virgin length of river, results were poor
					Idem for Bela
					1959: decline begun in 1957-58 goes on. Etaetu Division remains; production of Bela-Teturi is only of 703g Au
					No more reports from geological survey
53		4D/6		MGL	1946-53: Annual reports
					1946:Ituri Div., groupement Amalutu: opening of some mining sites in G59/Ituri, Magbalaba (G55/Ituri) will be reopened in 1947
					Ituri Div., groupement Luengba-Batsha: most parts of Butsha and tributaries are exhausted; exploitation especially on Luengba; Biakatu was not put in re-exploitation
					1947: exploitation of G55, G59 and g1/G59/Ituri and beginning of exploitation in Apekele
					In Luengba-Butsha, exploitation Old rivers close to Luengba and East of Butsha, G65, G69 and G69b/Ituri, and D1/Butsha
					1939 - 1947 output results table
					No random prospecting (volante) for 5 years

Table 6.2.2a. Significant comments from MGL and CNKi monthly reports by RMCA, (2007) (continued).

Exp L	List#	File	u/f.	Title	Comments
					Mr Petitjean is interested in gold bearing tillites which seem to be of some extension
					Mr Moreau made the first underground works in tillites (Upper Biaboy)
					1948: tillites exploited in Upper Biaboy-Amenjunju but are considered as barren in Lenda River.
					??? Glacial channels localization
					Scheelite in G69/Ituri: stock 1,600kg
					1949: Butsha exhausted, resumption in Biakatu and gradual opening of d20/D13/Teturi
					Apekele deposit is poor
					Butsha Right Hand tributaries are finished, low grade surrounding reserves are worked
					Biakatu is developed
					Scheelite exploitation progressively stopped
					1950: Amalutu exhausting (G2, G5 and G11); exploitation in Apekele (G41 to G47); exploitation of Gubo (G43 and G41)
					Luengba includes Luengba, Butsha, Biakatu and Mahulu
					1951: In Ituri-Luhule Division, groupements Bela and Lubena, intensive exploitation in rivers heads and of gold bearing quartz
					Luengba exhausted the last reserves of Biakatu and Butsha and is going on with exploitation of Luengba and Mahulu (which will be joined with the new Butembo Div.)
					Semi-systematic prospecting of Right Hand Ituri tributaries: D51 à D71/ituri (= Ituri extension)
					COMINOR: Gravel 74,410m³; grade 0.76g/m³; Overburden 114,365m³ excavated grade 0.30g/m³; Au 56,380g
					MGL: Gravel 4,620m³ grade 0.63g/m³; Overburden 5,660m³; excavated grade 0.28g/m³; Au 2,920g
					Abstract of vein deposit researches
					1952: Luengba nearly exhausted at the end of the year, opening of a "sous-camp" in Lunzay; most of the production of Luengba comes from Mahulu
					Luengba exploited in 1952:
					Teturi D11, D12 (Lunzaye), D13 (Mahulu), Luengba particularly L4 and L65-69 and D30/Luengba (Pankele)
					Vein exploration: 728m drillings at Niamakubi; disastrous recoveries (5 to 10%) and neglegible grades
					Abstract of researches for veins in 1952
					1953: Pilot plant built in Lubena for treatment of vein material gave disappointing results
					Mahulu exploitation results: 4,713g Au; excavated grade 0.27

Table 6.2.2a. Significant comments from MGL and CNKi monthly reports by RMCA, (2007) (continued).

Exp L	List#	File	u/f.	Title	Comments
					Apekele closed in August
					Luengba exploited: L66 et L69 (excavated grade respectively 0.65 and 0.39)
					Teturi exploited especially Mahulu between L47 and L87 (excavated grade from 0.08 to 0.56)
					Abstract of exploration for veins in 1953
		11A/			1955 Exploitation maps
					Eluvium exploitation in Mapembe (Teturi occidentale) in 1954, 1955 and 1956 between G2 (?) and G5

***** Note: "D" is for "Right" and "G" is for "Left", for instance: D21/Butsha is 21st right hand tributary of Butsha River.

The grade of gold in gravels compared with the excavated grade of gold in the Uper Lendi, Upper lenda, Lubero and Mines Nd during the years 1929 to 1936 are listed in Table 6.2.2b.

Table 6.2.2b. Gravel and excavated gold grades in Upper Lindi, Upper Lenda, Lubero and Mines Nd areas from 1929 to 1936, (RMCA, 2007).

Area	Grade	1929	1930	1931	1932	1933	1934	1935	1936
Upper Lindi	Gravel grade g/m³	5.26	3.85	2.65	1.83	1.48	1.13	0.92	0.76
	excavated grade g/m³	3.92	2.45	1.53	1.05	0.95	0.72	0.55	0.41
Upper Lenda	Gravel grade g/m³	5.11	4.23	3.14	2.68	1.98	1.40	1.29	1.05
	excavated grade g/m³	3.67	2.66	1.97	2.02	1.37	0.84	0.70	0.53
Lubero	Gravel grade g/m³						0.19	0.16	0.41
	excavated grade g/m³						0.12	0.09	0.23
Mines Nd	Gravel grade g/m³	5.17	3.96	2.79	2.09	1.67	1.19	0.97	0.85
	excavated grade g/m³	3.84	2.52	1.61	1.30	1.10	0.74	0.55	0.45

Prospecting was also carried out on quartz veins, eluvial deposits and itabirites. Results of these programs are presented in Section 9.0 hereof this report.

6.3 Historical mineral resources and reserves

No historical resources or reserves pursuant to the CIM Guidelines of August 20, 2000 have been reported to be known to occur on the KGL Masters Project Exploration Licences.

Annual reports by CNKi and MGL included data on alluvial gold resources present within the areas they were working. Presented in Table 6.3a are CNKi exploitable alluvial gold reserves for each of the years 1948 to 1956, as compiled by RMCA (2007). These historical reserves are not NI43-101 compliant. Given that these reserve figures are in excess of fifty years old and records since independence in the 1960s are unavailable it is not known if there has been exploitation in the areas referenced by these reserves. Hence, the reserves presented herein are indicative of a period in time long past, and now considered to be of historical academic interest, but significant from an interpretive point of view.

Table 6.3a. CNKi remaining exploitable gold reserves extracted by RMCA (2007) from the last reserves table found in the archives.

	1948	1957	1957	1951	1957	1957	1948	1948	1956
Grav (m^3)	2,634	135,897	50,434	38,821	53,106	18,981	3,357	6,121	4,500
Overb (m^3)	1,434	100,777	66,752	53,932	36,875	24,639	2,772	1,649	4,500
total (m^3)	4,068	236,674	117,186	92,752	89,981	43,620	6,129	7,770	9,000
Au (g)	7,336	217,232	64,908	127,614	50,041	35,754	11,833	15,369	8,100
G grade (g/m^3)	2.79	1.60	1.29	3.29	0.94	1.88	3.52	2.51	1.80
Exc gr (g/m^3)	1.80	0.92	0.55	1.37	0.55	0.82	1.09	1.98	0.90

CNKi alluvial gold reserves for the years 1948 to 1957 classified as unknown economic viability were compiled by RMCA (2007) and they are presented herein in Table 6.3b.

Table 6.3b. CNKi reserves of unknown economic viability for some years in the period 1948 to 1957.

								Uessa Nakota
	1948	**1955**	**1957**	**1957**	**1950**	**1948**	**1950**	**1957**
Grav (m^3)	5,983	68,285	16,318	13,320		31,938	123,204	13,422
Overb (m^3)	4,297	91,170	13,885	11,250		23,492	78,665	13,572
total (m^3)	10,280	159,455	30,203	24,570	71,690	55,430	201,869	26,994
Au (g)	4,134	60,096	20,516	39,103	31,265	25,542	125,804	26,106
G grade (g/m^3)	0.69	0.88	1.26	2.94		0.80	1.02	1.95
Exc gr (g/m^3)	0.41	0.38	0.68	1.59	0.44	0.46	0.62	0.87

Table 6.3b. CNKi reserves of unknown economic viability for some years in the period 1948 to 1957 (continued).

	Muhoni	Buyu Mambe	Tokohu	Mutei	Ingobo		Buyu Mambe
	1950	**1952**	**1951**	**1950**	**1950**	**1957**	**1957**
Grav (m^3)	51,108	179,325	10,361	32,170	38,941	1,975	117,878
Overb (m^3)	32,155	128,200	4,065	17,410	46,600	1,690	71,380
total (m^3)	83,263	307,525	14,426	49,580	85,541	3,665	189,258
Au (g)	46,391	218,275	15,792	39,427	26,239	2,495	119,288
G grade (g/m^3)	0.91	1.22	1.52	1.23	0.67	1.26	1.01
Exc gr (g/m^3)	0.56	0.75	1.09	0.80	0.31	0.68	0.63

MGL alluvial gold reserves in the Ituri Division for the years 1939 to 1952 are presented herein in Table 6.3c as compiled by RMCA (2007).

Table 6.3c. MGL Ituri Division gold reserves established on December 31st of years 1939-1952 (on rivers situated on the KGL Masters Project Exploration Licences), RMCA (2007).

AREA	Volume/grade	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1951	1952
AMALUTU BASIN Exploited Rivers	Gravel (m²)				112,437	96,293	76,254	53,646	38,318	29,441	20,813		
	Overburd (m²)				96,841	79,999	60,386	40,999	27,935	38,204	16,282		
	Total (m²)				209,278	176,292	136.640	94,645	66,253	67,645	37,095	7,176	
	Au prod. (g)				156,106	125,915	83,482	43,716	40,732	29,864	22,214	3,094	
	Au (g/m²)				1.39	1.31	1.09	0.81	1.06	1.01	1.07		
	Excav (g/m²)				0.75	0.72	0.61	0.46	0.61	0.44	0.60	0.43	
LUENGBA BASIN Exploited Rivers	Gravel (m²)				146,768	131,426	103,372	93,105	102,352	87,944			
	Overburd (m²)				174,664	155,518	131,673	118,080	118,941	107,519			
	Total (m²)				321,432	286,944	235,045	211,185	221,293	195,463		115,217	84,500
	Au prod. (g)				166,906	144,696	112,637	102,274	109,805	93,412		50,631	24,600
	Au (g/m²)				1.14	1.10	1.09	1.10	1.07	1.06			
	Excav (g/m²)				0.52	0.50	0.48	0.48	0.50	0.48		0.44	0.29
BUTSHA BASIN Exploited Rivers	Gravel (m²)				33,998	23,063	12,558	4,329	7,402	2,649			
	Overburd (m²)				43,749	24,575	10,188	3,594	7,368	3,192			
	Total (m²)				77,747	47,638	22,746	7,923	14,770	5,841		21,346	
	Au prod. (g)				43,981	25,685	10,480	3,367	6,124	4,092		8,746	
	Au (g/m²)				1.29	1.12	0.83	0.78	0.83	1.54			
	Excav (g/m²)				0.57	0.54	0.46	0.43	0.41	0.70		0.41	
LALIA BASIN Exploited Rivers	Gravel (m²)		30,898	31,265		12,539							
	Overburd (m²)		22,622	25,510		9,452							
	Total (m²)		59,520	53,775		21,991							
	Au prod. (g)		29,424	25,400		10,075							
	Au (g/m²)		0.74	0.81		0.80							
	Excav (g/m²)		0.49	0.47		0.46							
AMBIASARE BASIN Exploited Rivers	Gravel (m²)		16,367	13,981		6,434							
	Overburd (m²)		9,314	7,150		1,805							
	Total (m²)		25,651	21,131		8,239							
	Au prod. (g)		11,844	9,494		3,421							
	Au (g/m²)		0.72	0.68		0.53							
	Excav (g/m²)		0.46	0.44		0.52							
ITURI DIVISION Exploited Rivers TOTAL (Teturi incl.)	Gravel (m²)	280,858	479,014	557,590	305,702	262,181	195,946	153,435	159,339	156,019			
	Overburd (m²)	307,104	481,211	589,235	327,245	270,883	203,470	163,268	158,913	166,647			
	Total (m²)	587,962	960,225	1,146,825	632,947	533,064	399,416	316,703	318,252	322,666			
	Au prod. (g)	367,505	657,853	612,360	383,197	312,020	211,482	151,854	167,587	159,204			
	Au (g/m²)	1.31	1.37	1.10	1.26	1.19	1.08	0.99	1.05	1.02			
	Excav (g/m²)	0.62	0.68	0.48	0.61	0.59	0.53	0.48	0.53	0.49			

Table 6.3c. MGL Ituri Division gold reserves established on December 31st of years 1939-1952 (on rivers situated on the KGL Masters Project Exploration Licences), RMCA (2007), *(continued)*.

AREA	Volume / grade	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1951	1952
ITURI DIVISION Unexploited Rivers TOTAL (Teturi incl.)	Gravel (m²)	574,263	794,206	640,323	773,873	768,873	799,084	799,649	746,532	739,762			
	Overburd (m²)	454,056	725,079	541,787	708,597	708,015	736,018	737,076	700,129	674,185			
	Total (m²)	1,028,319	1,519,285	1,519,285	1,482,110	1,476,888	1,535,102	1,536,725	1,446,661	1,413,947			
	Au prod. (g)	825,247	729,546	621,605	712,060	707,974	741,016	738,682	680,950	658,626			
	Au (g/m²)	1.44	0.92	0.97	0.92	0.92	0.93	0.92	0.91	0.89			
	Excav (g/m²)	0.80	0.48	0.53	0.48	0.48	0.48	0.48	0.47	0.47			
ITURI DIVISION	Gravel (m²)	855,121	1,273,220	1,197,913	1,079,313	1,031,054	995,030	953,084	905,871	895,781			
	Overburd (m²)	761,160	2,177,138	1,131,022	1,035,842	978,898	939,488	900,344	859,042	840,832			
TOTAL (Teturi included)	Total (m²)	1,616,281	2,479,510	2,328,935	2,115,115	2,009,952	1,934,518	1,853,428	1,764,913	1,736,613			
	Au prod. (g)	1,192,752	1,387,399	1,233,965	1,095,257	1,019,994	952,498	890,536	848,537	817,830			
	Au (g/m²)	1.40	1.09	1.03	1.02	0.99	0.90	0.93	0.94	0.91			
	Excav (g/m²)	0.74	0.40	0.53	0.52	0.51	0.49	0.48	0.48	0.47			

6.4 Production

The only deposit in the Ituri Division that was developed and exploited was the Mapembe; an alluvial deposit. This deposit, exploited between 1955 and 1958, is located outside the area of the KGL Masters Project Exploration Licences. The remaining reserves of 75,047 m³ gravel; 26,586 m³ overburden; for a total of 101,633 m³; containing 22,580 kgCT; 0.31 kgCT/m³ gravel; 0.22 kgCT/m³ excavated was classified as unexploitable and in 1960 it was deleted from the reserves table (RMCA, 2007).

6.4.1 CNKi Gold Production

Presented herein in Table 6.4.1 are production figures extracted from the CNKi annual reports. Some of the rivers are predominantly outside the area of the KGL Masters Project Exploration Licences however tributaries or sources of many of them occur within the area of the KGL Masters Project Exploration Licences (RMCA, 2007).

6.4.2 MGL Gold Production

Gold production figures available for the MGL area are summarized in Table 6.4.2a. Cumulative gold production of Luengba and Butsha "groupements" is 1,103 kg between 1939 and 1953. (RMCA, 2007).

Total initial MGL reserves as complied by RMCA (2007) and presented herein in Table 6.4.2b was 312 kg gold. This compares with the statement in the 1953 annual report, translated by RMCA (2007), as "In the Oriental Ituri basins and the Ibina Basin, exploitation exhausted 3.04 times more than the estimated cubes; produced 2.16 times more than the estimated gold quantities and with an excavated grade 0.71 time the evaluated grade."

Table 6.4.2a. Summary of gold production from the MGL area

	Luengba	**Ituri**	**Butsha**	**TOTAL**
Cubic Gravel (m³)	207,317	11,228	29,659	248,204
Cubic St (m³)	244,712	4,521	28,673	277,906
Cubic total (m³)	452,029	15,749	57,932	525,710
Au (g)	252,029	11,291	48,685	312,005
Average grade (g/m³)	1.22	1.01	1.64	1.26
Recovered grade (g/m³)	0.56	0.72	0.84	0.59

Notes: Initial reserves for **Luengba** (+ G1, G16, d5/G16, G17, G22, G24, D21, d9D21, D30, d7D30, d9D30); **Ituri** (G59, 65, 69); and **Butsha** (+ G6, D1, g2D1, D2, D3, D5, g3D5, D6, D7, D13, g1D13), were calculated by adding the figures for each river and tributary when they appeared for the first time in the annual reports (Greysels, 2007).

Through the periodic reports, it is evident that in the early 1950s, the grade of exploited gravels increased markedly and from 1953, the MGL exploitations in the area of the KGL Masters project Exploration Licences (MGL North) focused more towards tungsten and Nb-Ta alluvial deposits, thus abandoning the nearly exhausted gold mining sites. MGL gold production came than from southern divisions (RMCA, 2007).

Table 6.4.1. CNKi Beni Group - Gold Production (in grams); years 1950 to 1959, (RMCA, 2007).

MINE	YEAR										TOTALS
	1950	**1951**	**1952**	**1953**	**1954**	**1955**	**1956**	**1957**	**1958**	**1959**	
Tiperitza **Tiperitza-Lessa** **Tiperitza-Abia**					139,679	139,797	114,963	108,619	81,765	46,629	**491,773**
Tiperitza (1)	10,084	81,400	89,856	84,892							**266,232**
Luhule, ingobo (2)	3,023	7,399	9,092	6,564	8,979	2,358	11,260	5,843	335		**45,874**
Abia (3)			13,467	42,134							**55,601**
Itua (4)									36,238	78,393	**114,632**
Tshamatembe										5,219	**5,219**

NOTES:
(1) commenced September 1950; production 1952: 76,538 m³, Gravel 45,625 m³, grade 1.96 g/m³; Overburden 56,175 m³, excavated grade 0.88 g/m³
(2) commenced September 1950.
(3) no production in 1951; production 1952: 7,152 m³, Gravel 2,853 m³, grade 4.72 g/m³; Overburden 2,815 m³, excavated grade 2.37 g/m³.
(4) commenced March 1958.

Table 6.4.2b. MGL Ituri Division exploitation results for the period 1939 to 1953, (RMCA, 2007).

AREA	Volume/grade	1939	1940	1941	1942	1943	1944	1945	1946
AMALUTU	area (m^2)			89,871	110,377	134,855	122,063	126,804	137,141
	Grav. (m^3)	5,889	47,369	55,586		80,419	72,089	79,926	91,767
	Overb. (m^3)	7,641	59,068	79,266		105,876	88,569	97,299	104,974
	Total	13,530	106,437	134,852	168,937	186,295	160,658	177,225	196,741
	Gr. thick. (m)			1		0.60	0.59	0.63	0.67
	Overb. thick. (m)			1		0.79	0.73	0.77	0.77
	Gr. grade (g/m^3)	1.14	1.36	1.23		1.02	1.15	0.95	0.73
	Exc grade (g/m^3)	0.50	0.60	0.51	0.50	0.44	0.52	0.43	0.34
	Au (g)	6,723	64,261	68,410	84,776	82,194	83,317	76,073	67,026
LUENGB	area (m^2)			67,327	83,915	156,451	112,764	109,188	114,718
	Grav. (m^3)	594	30,511	46,744		116,530	66,770	68,382	75,667
	Overb. (m^3)	908	43,690	70,585		176,032	128,457	141,239	115,962
	Total	1,502	74,201	117,330	143,641	292,562	195,227	209,621	191,629
	Gr. thick. (m)			1		0.74	0.59	0.63	0.66
	Overb. thick. (m)			1		1.13	1.14	1.29	1.01
	Gr. grade (g/m^3)	1.43	1.34	1.22		1.04	1.01	0.85	0.70
	Exc grade (g/m^3)	0.56	0.55	0.48	0.55	0.42	0.35	0.28	0.28
	Au (g)	846	40,827	56,824	79,565	120,974	67,424	58,355	53,026
BUTSHA	area (m^2)			74,144	76,243				
	Grav. (m^3)	71	36,502	56,675					
	Overb. (m^3)	56	42,698	81,204					
	Total	127	79,200	137,879	149,201				
	Gr. thick. (m)			1					
	Overb. thick. (m)			1					
	Gr. grade (g/m^3)	0.59	1.78	1.23					
	Exc grade (g/m^3)	0.59	0.82	0.51	0.39				
	Au (g)	42	64,737	69,631	58,671				
BIAKATU	area (m^2)			105,546					
	Grav. (m^3)		28,913	63,518					
	Overb. (m^3)		25,233	61,338					
	total		54,146	124,856	129,091	183,911	5,738		
	Gr. thick. (m)			1					
	Overb. thick. (m)			1					
	Gr. grade (g/m^3)		0.57	0.65					
	Exc grade (g/m^3)		0.31	0.33	0.34	0.26	0.30		
	Au (g)		16,609	41,470	50,643	48,211	1,745		

Table 6.4.2c. MGL Ituri Division exploitation results for the period 1939 to 1953, (RMAC, 2007) (*continued*).

AREA	Volume/grade	1947	1948	1949	1950	1951	1952	1953	
AMALUTU	area (m^2)	124,649	133,012	137,455	160,106				
	Grav. (m^3)	73,969	78,752	86,686	94,379				
	Overb. (m^3)	91,636	104,500	103,891	110,904				
	Total	165,605	183,252	190,577	205,283				
	Gr. thick. (m)	0.59	0.59	0.63	0.59				
	Overb. thick. (m)	0.74	0.79	0.76	0.69				
	Gr. grade (g/m^3)	0.84	0.77	0.69	0.73				
	Exc grade (g/m^3)	0.38	0.33	0.31	0.33				
	Au (g)	62,391	60,654	59,522	68,643				
LUENGB	area (m^2)	143,749	168,584	191,685	170,363	123,308	106,744	53,572	
	Grav. (m^3)	86,399	102,136	110,745	103,011	72,233	68,823	36,693	
	Overb. (m^3)	121,757	120,222	127,940	125,093	91,282	67,140	32,578	
	Total	208,156	222,358	238,685	228,104	163,515	135,963	69,271	
	Gr. thick. (m)	0.60	0.61	0.58	0.60	0.59	0.64	0.68	
	Overb. thick. (m)	0.85	0.71	0.67	0.73	0.74	0.62	0.61	
	Gr. grade (g/m^3)	0.72	0.69	0.72	0.71	0.86	0.81	0.77	
	Exc grade (g/m^3)	0.30	0.32	0.33	0.32	0.38	0.41	0.41	
	Au (g)	62,145	70,483	79,477	73,437	62,448	56,032	28,169	
BUTSHA	area (m^2)								
	Grav. (m^3)								
	Overb. (m^3)								
	total								
	Gr. thick. (m)								
	Overb. thick. (m)								
	Gr. grade (g/m^3)								
	Exc grade (g/m^3)								
	Au (g)								
BIAKATU	area (m^2)								
	Grav. (m^3)								
	Overb. (m^3)								
	total								
	Gr. thick. (m)								
	Overb. thick. (m)								
	Gr. grade (g/m^3)								
	Exc grade (g/m^3)								
	Au (g)								

Table 6.4.2c. MGL Ituri Division exploitation results for the period 1939 to 1953 (RMCA, 2007) (*continued*).

AREA	Volume/grade	1939	1940	1941	1942	1943	1944	1945	1946
ITURI Total	area (m^2)			416,058	308,085	291,106	234,827	235,992	251,859
	Grav. (m^3)	6,554	176,432	275,604		196,949	138,852	148,308	
	Overb. (m^3)	8,605	200,220	341,425		281,908	217,026	238,538	
	Total	15,159	376,652	617,029	509,689	478,857	355,885	386,846	388,370
	Gr. thick. (m)								
	Overb. thick. (m)								
	Gr. grade (g/m^3)	1.16	1.35	1.12	1.12	1.03	1.08	0.91	
	Exc grade (g/m^3)	0.50	0.63	0.50	0.49	0.42	0.42	0.35	0.31
	Au (g)	7,611	16,609	309,846	246,723	203,403	150,741	134,428	120,052

7.0 GEOLOGICAL SETTING

7.1 Regional geology - GEOLOGY OF THE DEMOCRATIC REPUBLIC OF CONGO ("DRC")

- **INTRODUCTION**

The following section on the geology of the DRC has been summarized from an extensive draft research paper by A. Deblond and L. Tack (2000) that included some three hundred seventy nine references. Portions of this section have been extracted verbatim from Deblond and Tack (2000). Also, given that Deblond and Tack (2000) often presented conflicting concepts in presenting the views of various authors over a span of many years, the author of this report has attempted to only include herein the most recent interpretations presented by Deblond and Tack (2000). For ease of reading the author only references Deblond and Tack (2000); the reader is referred to the original paper for specific references. Also for ease of reading the author has refrained from putting into parenthesis or italics those passages from Deblond and Tack (2000) presented herein verbatim. The author of this report has not made any independent conclusions to the opinions presented by Deblond and Tack (2000).

Global plate tectonics and its application to Precambrian times, includes a period of ocean opening with the development of sedimentary basins followed by ocean closure and the development of collisional mobile belts ("newly formed supercontinent").

- **Pangea supercontinent** assembled at circa ("c.") 250 Ma and its Phanerozoic evolution;
- **Gondwana supercontinent** assembled at c. 550 Ma and its Neoproterozoic evolution;
- **Rodinia supercontinent** assembled at c. 1000 Ma and its Mesoproterozoic evolution.

The geology of Central Africa, in particular the Democratic Republic of Congo ("DRC"), is presented based on the following subdivisions (from younger to older):

- Breakup of Pangea, Atlantic Ocean opening and development of continental rifting within the African plate (since c. 250 Ma)
- Assembly of Pangea
- Breakup of Gondwana and Karoo
- Assembly of Gondwana and Pan African orogeny (at c. 550 Ma)
- Breakup of Rodinia
- Assembly of Rodinia and Kibaran orogeny (at c. 1000 Ma)
- Pre-Rodinia evolution.

The geology of the DRC is illustrated on Figure 7.1a, a simplified geological map.

- **BREAKUP OF PANGEA, ATLANTIC OCEAN OPENING, AND DEVELOPMENT OF CONTINENTAL RIFTING WITHIN THE AFRICAN PLATE (SINCE c. 250 MA)**

The **Phanerozoic Atlantic coastal basins** from the Gulf of Guinea north to the southern part of the continent, in Namibia are Mesozoic basins linked to oceanic opening including three phases of rifting, proto-ocean and distension margins. The Gulf of Guinea basins result from transtension along shear faults, and form rhombic shape pull-apart basins such as the **Kwanza** (or "Cuanza") basin of Angola. Oil deposits in the DRC occur in the **Cabinda** (or "Bas-Congo" or "Congo") basin, a graben infilled by continental and lacustrine sediments.

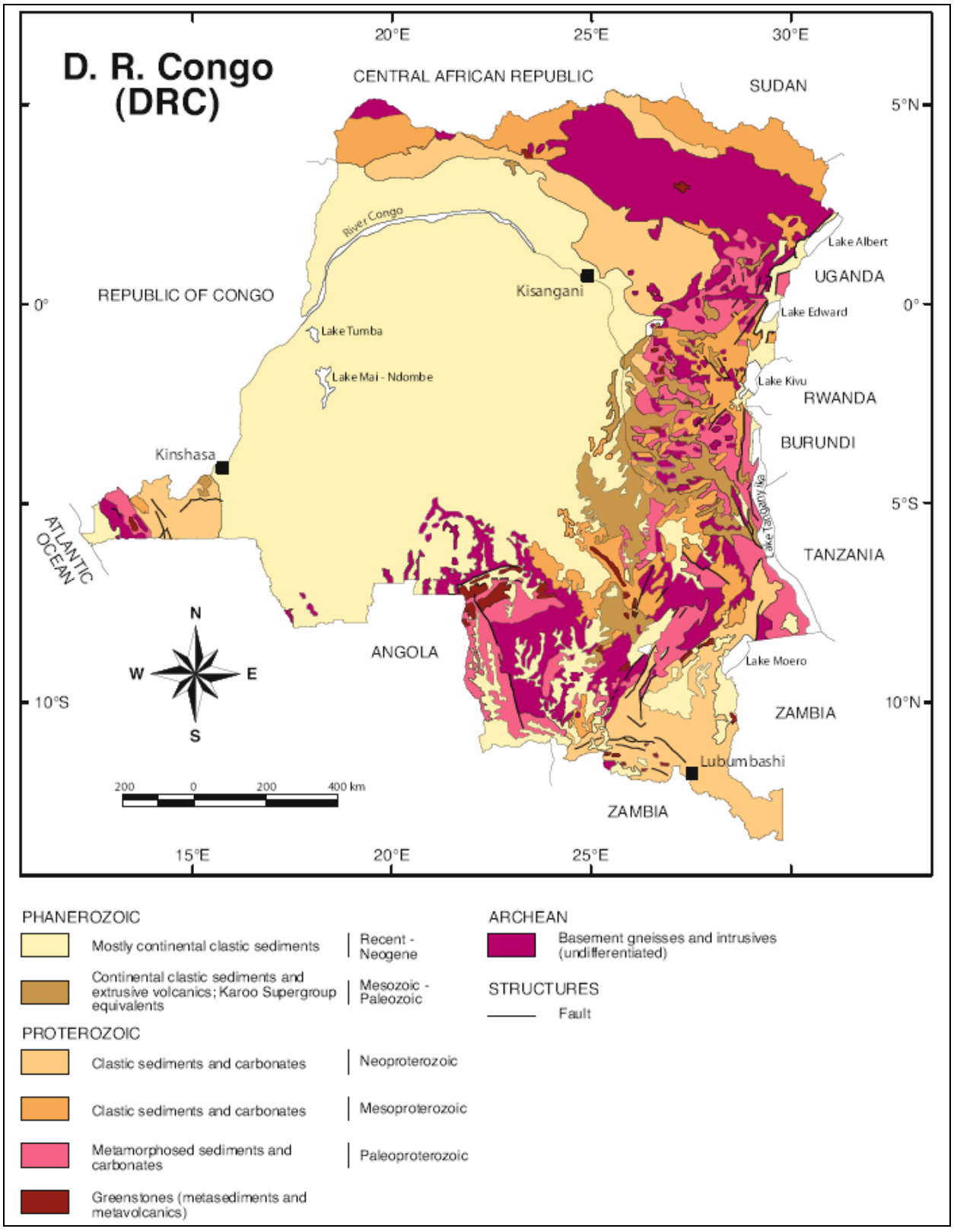

Figure 7.1a. Geological Map of the DRC (modified after Lepersonne, 1974).

Evolution within the African plate: Since the Early Permian the tectonic evolution of the African continent has encountered six major rifting systems: 1) Late Tertiary to Recent, 2) Early Tertiary, 3) Mid Cretaceous, 4) Early Middle Jurassic (end of Karoo system *pro parte*), 5) Late Triassic-Early Jurassic, and 6) Permo-Triassic (early Karoo).

In DRC, the **Western Rift** (Western Branch of the East African Rift) is characterized, from N to S, by the Ruwenzori horst, Lake Edward, the Virunga volcanic massif, Lake Kivu, the Rusizi valley, Lake Tanganyika, Lake Moero (or "Mweru") and the Upemba graben, all running along the eastern limit of the country. The rift is filled with alluvial, eluvial and colluvial Pliocene, Pleistocene and Holocene deposits. Diatomite beds are Pliocene and Pleistocene deposits. Sublacustrine hydrothermal activity and associated banded pyrite and marcassite occur in a tectonically active zone of Lake Tanganyika north of Kalemie. In Katanga, the Karoo is overlain by Cenozoic Kalahari deposits and by recent alluvia, and in the Western Rift-related Mweru and Upemba grabens. The Ruwenzori massif, displaying Precambrian formations consists of a horst uplifted between Lakes Albert and Edward.

Cenozoic volcanic Activity consists of the Virunga (c. 11 Ma), the Bukavu (c. 10 Ma) and the Mwenga-Kamituga (6 Ma) Volcanic Provinces in Kivu District (Figure 4.1b).

The **Virunga Volcanic Province** is characterized by: a) Pliocene-Pleistocene volcanic flows, and b) the initial (Miocene) Virunga episode of tholeiitic basalts overlain by Na-alkaline lavas.

The **Bukavu** and **Mwenga-Kamituga Volcanic Provinces**, also extending in Rwanda display a) Tholeiitic to transitional basalts during the pre-rift stage, b) Na-alkaline lavas during downwarping (rift individualization), followed by transitional volcanics during the graben stage.

The continental Cenozoic to Recent Sedimentary formations overlying the Cuvette Centrale are continental in origin and comprise, a) The Lower Pleistocene to Pliocene argillaceous sands with basal conglomerates overlying the late-Tertiary plains. Neogene yellow (ocre) sands, of the Upper Kalahari formations, form discontinuous remnant lenses resting on a Mid-Tertiary peneplain, and the Paleogene Grès polymorphes: discontinuous sand lenses of the Lower Kalahari, and b) Mesozoic sedimentary sequences occurring in the Cuvette Centrale encompass the Neoproterozoic tabular series overlying Phanerozoic deposits from Lower or Upper Palaeozoic to Cenozoic (Kalahari deposits).

The Gondwana breakup, with the opening of the South Atlantic ocean (Benoué Cretaceous basin of Nigeria and Chad Basin) resulted in the evolution of the Cuvette Centrale sedimentary basin. The development of the NW-oriented rift basins of Sudan (Bagarra, Muglad), with Cretaceous and Cenozoic infilling, are parallel with the alignment of the basement units of the neighbouring NE Congo. The Pan African orogeny and the end of a general extensional regime active since the early Permian, rifting processes predominated the tectonic evolution of Africa. The Karoo system is linked to the first of six major extensional events identified on the basis of the youngest sediments infilling the rifts.

The geological structure and evolution of the Cuvette Centrale basin identified four phases, 1) from the end of Precambrian to the Lower Palaeozoic, 2) the Permian and the Triassic, 3) the Upper Jurassic and the Cretaceous, and, 4) the Cenozoic. The Cuvette Centrale is an intracratonic basin that evolved through prevailing continental sediments, unconformities between the sedimentary sequences, slight subsidence during the deposition and a tectonic evolution that consisted of a) a Permo-Trias (Karoo) fault-controlled stage in the eastern and southern part and local folding in the western part during the Upper Jurassic-Lower

Cretaceous, and b) an Upper Jurassic-Cretaceous deformation in the central and margin portions of the basin.

A transitional intermediate stage between the fault-controlled and the subsident stages resulted in the Benoué trough (Nigeria), linked to the opening of the southern Atlantic ocean.

Mesozoic basin of Congo: in Eastern Africa, a Mesozoic rift arm, the Anza trough of Kenya active during Upper Jurassic and Cretaceous is contemporaneous with the NW-trending Tanganyika-Rukwa-Malawi ("TRM") lineament. The Lukuga Karoo rift, locally filled with Cretaceous deposit, occurs at the western part of this structure, belongs to a set of wrench fault zones known as Aswa, TRM, Zambezi cutting across Eastern Africa. The TRM lineament extends northwestwards to Equator province (Figure 4.1b). Tectonic evolution of the Mesozoic depocenters of Central Africa in terms of Pangea breakup, with the separation of India and Madagascar, and the opening of the South Atlantic ocean, may have resulted in fault-controlled Mesozoic basins.

Mesozoic formations stratigraphy consists of, from top to bottom, the following:

Kwango Group (Cenomanian)
Bokungu Group (Albian -? Lower Cenomanian) 450m thick detrital sediments
Loia Group (Albian-Aptian)
Stanleyville Group (from Oxfordian to Aptian)

The **Bokungu Group**, covering the main part of the "Cuvette Centrale", extends southwards to Angola. In Congo-Brazzaville (Popular Republic of Congo), (Figure 4.1b) the Cretaceous strata of the "Cuvette Centrale", in continuity with those of the DRC are called Stanley-Pool Series have been correlated to the Kwango Group of DRC. The Bokungu Group may be present at the lower part of the Stanley Pool Series of the Popular Republic of Congo as well as to the diamond-bearing Carnot Sandstones of Central African Republic ("CAR"), which occur in continuity with the Stanley-Pool Series. The Carnot Sandstones have also been linked to the Kwango Group of DRC on the presence of diamonds in the basal conglomerates.

The Carnot Sandstones may correspond to different formations hence the diamond-rich conglomerate is located in the Bokungu for academics, and in the Kwango for the economic geologists.

Two kimberlite provinces are present in DRC. The first in Eastern Kasaï, consists of altered kimberlitic breccias and tuffs cutting across the Archaean Kasaï Block, the southern part of the Congo Craton, and its sedimentary cover. The second consists of unaltered diamond-poor kimberlitic pipes, crosscutting the margin of the Palaeoproterozoic Bangweulu Block, cratonized at c. 1.8 Ga, and its sedimentary cover, in the Kundelungu Plateau (Katanga Province) (Figure 4.1b). Kimberlites also occur south of Banza-Ngungu, near the Angola border.

Intrusion of the Eastern Kasaï pipes has been dated as Upper Cretaceous at 71.3 Ma. Crystallization of diamonds in Eastern Kasaï have been dated at 628 ± 12 Ma; post-Bokungu and pre-Kwango. The age of the Kundelungu kimberlites is pre-Miocene and post-Neoproterozoic. The kimberlites of Congo (and Angola) are contemporaneous with the magmatic activity associated to Late Cretaceous tectonic phases in West Africa including the igneous intrusion of Senegal, the off-shore volcanism of Guinea, and the kimberlites of Guinea, Liberia and Sierra Leone.

- **ASSEMBLY OF PANGEA**

There is no record of assembly of Pangea in Central Africa. During this period, the continental blocks, comprising the pre-existing Gondwana supercontinent, assembled when Palaeozoic orogenic belts developed at both the northernmost and the southernmost parts of the present-day African continent.

- **BREAKUP OF GONDWANA AND KAROO DEPOSITS**

The Karoo deposits of Upper Carboniferous, Permo-Triassic and Lower Jurassic age occur in the sedimentary pile of the Cuvette Centrale, and in rift basins (Lukuga and Luena basins). The east African Karoo basins, mainly intracratonic until early Jurassic, evolved under 1) a dominantly extensional regime at the Thetyan margin of Gondwana, and, 2) a mainly compressional regime at the Pacific margin of Gondwana.

In the Cuvette Centrale 400m to 500m thick Karoo series are an alternation of sandstones, schists and conglomerates (locally tillite) of glacial to periglacial origin occur intercalated between the Mesozoic Loia Group and the Precambrian basement.

The Karoo rift related sediments and depocenters are considered as structural accommodation of the Proterozoic basement during the Phanerozoic evolution. Phanerozoic rifting has been episodically active since Karoo times and is expressed by NNW-SSE to N-S trending lineaments reflecting post-Precambrian brittle accommodation of older units. The Lukuga (or Kalemie) Karoo rift is situated along the NW extension of the reactivated Paleoproterozoic Ubendian belt, in continuity with the southern half of Lake Tanganyika is filled by Permo-Carboniferous, Triassic and Cretaceous sedimentary series. In the Karoo basins of Lukuga and of Luena, coal seams are locally exposed.

The Karoo deposits in the northern part of the Katanga region include glaciogenic mountain valley deposits along the southeastern rim of the Congo basin. More to the south, the sequences are deposited on a paleo relief. Part of the diamictites of Katanga, are Carboniferous-Permian continental glaciogenic deposits (Karoo Dwyka Tillite), or even a possible Lower Palaeozoic glaciogenic formation.

- **ASSEMBLY OF GONDWANA AND PAN AFRICAN OROGENY (AT c. 550 MA)**

SEGMENTS OF THE PAN AFRICAN MOBILE BELTS: The Pan-African West Congo (or West Congolian) belt, extending subparallel to the Atlantic coast between 1°S and 12°S Latitude is c. 1,400 km long, 150 to 300 km wide, and runs across Gabon, Congo-Brazzaville, Cabinda, DRC and Angola.

The West Congo Supergroup includes, from oldest to youngest, the Zadinian, Mayumbian and West Congolian Groups.

The lower part of the Zadinian Group is composed of basal, siliciclastic metasediments with large lateral and vertical facies variations, consistent with a continental rift environment. In DRC, these sedimentary rocks are overlain by Gangila tholeiitic metabasalts.

The 3,000 to 4,000 m thick Mayumbian Group is a felsic volcanic-plutonic volcanic sequence intruded by the Lufu massif of high-level granitic bodies that overlies the Zanadian Group.

The c. 6,000 m thick West Congolian Group internal lithostratigraphy in DRC comprises pre-Pan-African passive margin platform sequences including siliciclastic and carbonate rocks and two horizons of diamictite (from Sansikwa to Schisto-Calcaire Subgroups; c. 4,000 m thick) and late- to post-Pan-African molasse sequences (Mpioka and Inkisi Subgroups; c. 2,000 m). The West Congolian Group rests nonconformably on the c. 920 Ma Mayumbian Lufu granites.

In Bas-Congo province (Figure 4.1b) and adjacent northern Angola, there is a prominent flexure. The area to the northeast of the flexure grades progressively into the foreland of the belt towards the Congo craton where the main NW-SE trending branches of the Neoproterozoic basin abut the bounding NE-trending Sangha aulacogen limited by the Combian fault system.

Syn-kinematic regional metamorphism, related to Pan-African orogenesis, varies from amphibolite facies, in the west, to greenschist facies and, finally, to unmetamorphosed sedimentary rocks to the east. To the west, in the more internal Pan-African thrust and fold belt, the east-verging, oldest c. 2.1 Ga Kimezian Supergroup (Palaeoproterozoic basement) is thrust onto the Zadinian Group, itself in places thrust onto the Mayumbian Group, which finally comes into contact with the youngest West Congolian Group. In the Bas-Congo Province of the DRC, (Figure 4.1b) the tectonic setting consists of: in the north, gently dipping and imbricated thrust slices abound whereas further south, protected to the east by a large rigid Mayumbian granite body (Lufu massif), the West Congolian metasedimentary sequences display only upright folding. The West Congolian Group was deposited in situ, after unroofing of the Mayumbian granites. To the east the West Congolian Group grades into an external foreland basin resting unconformably on the Archaean Congo craton (Chaillu and Kasai blocks).

Ophiolite remnants, high-grade metamorphic rocks and syn- to post-kinematic granitoid batholiths of Pan-African age, are absent in the West Congo belt. Neoproterozoic oceanic lithosphere and calc-alkalic magmatic arc occur in the (Araçuaí) of Brazil, indicating a B-subduction-controlled orogen. The West Congo and the Araçuaí (Eastern Brazil) belts are counterparts of the same Pan-African - Braziliano orogen located between the São Francisco and Congo cratons. Granites from c. 625 to c. 500 Ma outcrop in the Araçuaí.

The West Congo belt has a major angular unconformity between the Palaeoproterozoic Kimezian basement (c. 2.1 Ga) and overlying igneous and metasedimentary rocks of the (c. 5,000 - 6,000 m) thick Zadinian and Mayumbian Groups. The lower part of the overlying West Congolian Group is characterized by passive margin sedimentation.

The West Congo belt structures were acquired during the Pan-African orogeny that ended at c. 566 Ma. Palaeozoic reactivation of the NE-trending strike-slip Combian fault system occurred.

Early Zadinian Noqui granite in the central part of the West Congo belt crystallized at 999 ± 7 Ma. Gangila basaltic sequence, associated with major pull-apart rifting and displaying geochemical characteristics of CFBs yielded ?Nd = -2.4 ± 1.2. The Mayumbian granite and the Mayumbian rhyolites are coeval at about 918 ± 10 Ma. The duration of felsic magmatism is 8 ± 4 Ma between about 920 and 912 Ma.

Following a period of stability during the Mesoproterozoic, geochemical evolution of the West Congo belt is linked to early Neoproterozoic (c. 1,000 - 910 Ma) dextral transtension that induced transverse rifting related to Combian faulting, early Zadinian sedimentation and

minor peralkaline melts along a transverse NE-trending mega-shear system in a pre-Pan-African basement (Palaeoproterozoic Kimezian Supergroup) uplift zone (Noqui and Palabala; c. 1,000 Ma). Subsequently, lithospheric extension in pull-apart rifts along the Congo cratonic boundary triggered extensive continental magmatism. Increased asthenospheric upwelling induced major rifting accompanied by higher degrees of partial melting of the lithospheric mantle (Gangila CFBs; c. 930 - 920 Ma). Finally, melts from lithospheric mantle resulted in Mayumbian felsic magmatism (c. 920 - 910 Ma).

Constraints from the Araçuaí belt in Brazil indicate an oceanic stage at c. 800 Ma (ophiolitic remnants), implies drifting occurred between c. 910 and 800 Ma, and began not long after Zadinian – Mayumbian rifting. The latter was the initial stage of breakup in that part of the Rodinia supercontinent.

By the end of the Neoproterozoic (c. 566 Ma), the Pan-African - Brasiliano Araçuaí belt, adjacent to the São Francisco craton of Brazil, had collided with the Congo craton during the assembly of Gondwana. The limited effects of the Pan-African - Braziliano orogeny in the median and external domains of the West Congo belt is attributed to the passive margin conditions that prevailed during part of the Neoproterozoic in this area (lower West Congolian Group lying on the Archaean craton with no subduction below this area during the Neoproterozoic) and to the thick lithospheric mantle which imparted high rigidity to the Congo craton during the Pan-African orogeny. This explains the polarity in deformation and metamorphic grade from west to east, the absence of Pan-African magmatism and the excellent preservation of early Neoproterozoic rocks.

THE LUFILIAN BELT: The Pan-African Lufilian belt is the type area of the Katangan System, hosting Cu-Co mineralization and deposits of Zn, Pb, Cd, Ag, Ge, Ga, U and Au. The Zambian portion of the Lufilian Arc is the Copperbelt whereas the Congo portion is the Arc Cuprifère du Katanga or Katangan belt of Central Africa. The Pan-African Lufilian belt occurs between the Congo to the north and the Kalahari cratons to the south.

The Lufilian belt, Neoproterozoic Katanga System or Katanga System or Succession forms a pile 5,000 m - 10,000 m thick of more or less concordant beds. The threefold subdivision of the Katangan succession, based on two diamictite formations, namely the Grand Conglomérat and the Petit Conglomérat mixtites, includes, from top to bottom:

- **Upper Kundelungu Supergroup**; (Petit Conglomérat at the base);
- **Lower Kundelungu Supergroup**; (Grand Conglomérat at the base);
- **Roan Supergroup**; host to the main stratiform Cu-Co orebodies

The Pan-African orogenic event, gave the Lufilian belt its present northward convex configuration. The tectonic events that affected the region consist of an earlier Lomamian orogeny (±950 Ma), followed by the Lusakan folding (±850 Ma) and by a Lufilian orogeny.

Evolution of the Neoproterozoic basin, includes deposition of sediments and associated magmatism and three main tectonic phases encompassed within the Lufilian Orogeny, an orogenic event which follows the Katangan rifting. The Katangan rifting consists of extensional tectonics ranging from continental up to proto-oceanic rifts, accompanied by the emplacement of mafic and minor felsic igneous rocks. An age of c. 880 Ma for commencement of deposition of the Roan Supergroup controlled by Katangan continental rifting has been considered based on the age of associated magmatism from Zambia, the Nchanga granite (877 Ma), Kafue rhyolites (879 Ma) and the Lusaka granite (863 Ma).

The Lufilian orogeny consists of the Kolwezian (D1) between c. 850 and c. 690 Ma is characterized by folds and thrust sheet, the Monwezian (D2) characterized by large left-lateral strike-slip faults and the Chilatembo (D3) younger than 540 Ma, corresponds to transverse folding. Uranium ore deposits have been interpreted to be co-eval to the Monwezian (D2) event.

The Grand Conglomérat, basal diamictite of the Lower Kundelungu Group, associated with the Kibambale mafic rocks gives an age of c. 765 - 760 Ma. The Kibambale mafic rocks belong to an alignment of mafic massifs trending along the eastern boundary of the Katanga aulacogen or Gulf of Katanga. The continuation of these mafics in northwestern Zambia includes Katangan siliciclastic metasediments.

Neoproterozoic deposits have emphasized the existence of two global glaciations during this era. The early Sturtian event (c. 750 - 700 Ma) and the Varanger(ian) or Vendian or Marinoan glaciation (c. 600 Ma) are identified in the Pan-African Gariep belt of southern Namibia, south Australia (c. 610 - 575 Ma) and in northwestern Canada. Both glacial events constitute the second major glaciation within the Proterozoic (in early Palaeoproterozoic and Neoproterozoic). A typical feature of the glacial deposits is overlying post-glacial Neoproterozoic diamictites and cap carbonates. The Grand Conglomérat may be a Sturtian diamictite deposited during Katangan rifting, between <900 Ma and <850 Ma, that precedes the main deformation in the Lufilian arc (800 - 710 Ma), hence has an age of 750 Ma.

A regional Katangan "décollement" may exist in the Kundelungu foreland area because the deformation consists of large subhorizontal plateaus that seem to overlie the smooth antiform folds and the flanks of the anticlines have gentle slope characteristics representative of décollement deformation. Décollement tectonics assumes layering-parallel movements, bedding concordant displacement and possible duplication of the sedimentary units. Extrapolation of this deformational regime scale is coherent with the general NNE tectonic transport direction in the Lufilian Arc.

PRE-KAROO POST-TECTONIC MOLASSES AND/OR (FORELAND) BASINS FRINGING THE PAN-AFRICAN MOBILE BELTS: The late Neoproterozoic and pre-Karoo molasse sequences of the **West Congolian Group** (West Congo Supergroup) are foreland basin deposits with predominantly red bed facies. The Mpioka Subgroup corresponding to the molasse of the West Congo belt occurs along its length, is a late marker of the evolution of the West Congo belt. The overlying tabular Inkisi Subgroup is post-Pan-African and its deposition area is unrelated to the West Congo belt trend and evolution. In Angola, the Inkisi Subgroup is overlain by Karoo deposits and is older than Permian but Palaeozoic, being a foreland basin deposit unrelated and subsequent to the Pan-African orogeny thus an individual lithostratigraphic unit.

THE FORELAND DEPOSITS OF THE LUFILIAN BELT IN KATANGA: A plate tectonic definition of aulacogen supports the Kundelungu aulacogen or Katanga gulf, implying synsedimentary (syn-Upper Kundelungu Supergroup) subsidence along contemporaneous active border faults of the aulacogen. The Katangan border faults of the aulacogen possibly resulted in the development of an ante-Karoo paleograben, where folded and tabular Katangan has been preserved and later uplifted (horst) to produce the present-day Kundelungu plateau. The western border fault (Manika fault) corresponds to the limit of the Upper Kundelungu transgression. The eastern border fault of the inferred paleograben disappears under the Luapula Beds of Karoo age extending in the large Luapula-Lake Mweru (Moero) plain. The regularity of the lithostratigraphical facies and the small total thickness of the downfaulted sedimentary pile is considered as a post-sedimentary formation of the

graben. The two types of diamictites of the inferred paleograben area: the Grand Conglomérat and Petit Conglomérat and the younger Karoo tillites have been reviewed.

Apart from the triangular Kundelungu foreland area, other parts of the Katanga region are covered by predominantly tabular Neoproterozoic sedimentary sequences. They comprise large areas of tabular Roan Supergroup sequences (including Mwashya Group sediments) either exposed within the Kibaran belt or at its eastern contact with the Palaeoproterozoic Marungu volcano-plutonic complex. To the west of the Kibaran belt, sedimentary sequences of presumably comparable age to the Roan Supergroup comprise the Luamba Group, overlying the Archaean Granito-gneissic Complex of West Katanga and the southeasternmost portion of the Mbuji-Mayi Supergroup.

The Kibambale metabasalts and dolerites, interbedded within the Grand Conglomérat originated in an extensional environment corresponding to the development of a proto-oceanic rift (Red-Sea type) during extensional tectonics and normal faulting evolving from a continental rift basin. Katangan rifting consists of extensional tectonics ranging from continental up to proto-oceanic rifts, accompanied by the emplacement of mafic and minor felsic igneous rocks.

The subtabular Upper Katangan deposits may be equivalent to the Fish River Subgroup (Nama Group) in the Damara Belt of Namibia and interpreted to be foreland and/or molasse basin deposits associated to the Pan-African West-Congolian, Kaoko and Gariep belts.

LINDIAN – UBANGIAN AND CORRELATIVE UNITS FROM CAR: The **Neoproterozoic Lindian Supergroup** named after the Lindi river, in the Kisangani region exposed mainly in the Orientale Province of northern DRC (Figure 4.1b) is known as Ubangian, at the southern edge of the Pan-African Ubanguide fold belt consists of a sedimentary sequence considered foreland deposits of this orogen. The Ubangian is the local name for the extension of this unit in Equator Province of DRC. The prolongation of these sedimentary series to the north, in CAR, via the N-S-trending Fouroumbala basin, includes units known locally as Middle Chinko–Morkia-Rumu and Fouroumbala Formations.

Correlations With The Lindian Supergroup of DRC: Two megacycles occur in the stratigraphy and the tectonics of the Middle Chinko-Morkia-Rumu and Fouroumbala Formations: **a**) the Morkia-Rumu, Middle Chinko and, **b**) the Bougboulou belonging to the Fouroumbala Formation. It corresponds to the Lokoma Group (Lindian Supergroup of the DRC). Variations of facies in CAR point to an ENE-trending rift environment affecting a passive continental margin. The second cycle, limited to the Fouroumbala basin, started with deposition of quartzites-sandstones resulting from the reactivation of the erosion after uplift and faulting. It continues, in the Bakouma area, with the deposition of pelitic sediments with glaciogenic intercalations, carbonates and pelites with sandy intercalations. This sequence may correspond to the Malili Formation (Aruwimi Group, Lindian Supergroup).

NEOPROTEROZOIC (1,000-570 MA) – EARLY PALAEOZOIC POORLY-DEFINED UNITS DEPOSITED IN TROUGHS: The Neoproterozoic Mbuji-Mayi (Bushimay) Supergroup outcrops in eastern Kasai and in northwestern Katanga. In Katanga, the Supergroup rests unconformably upon the Mesoproterozoic Kibaran belt, while in southern Kasai, it unconformably overlies the Archaean Kasai craton. In the north, the supergroup is overlain by Mesozoic sedimentary rocks belonging to the Cuvette Centrale. The Roan Supergroup of Katanga, forming the base of the Katangan System, is considered the stratigraphical equivalent of the Mbuji-Mayi Supergroup. The Luamba unit, in western Katanga, forms a 120 km x 20 km zone considered correlative with the Mbuji-Mayi Supergroup.

The Mbuji-Mayi Supergroup outcrops in two distinct NW-SE trending areas separated by Mesozoic sediments. Tectonics on the approximately 250 km NW-SE trending about 30 km wide zone in Kasai produced monoclinal beds with long wavelength undulations oriented SW–NE and NW–SE. In proximity to the Kibaran belt, numerous faults are present.

The Mbuji-Mayi Supergroup deposition was characterized by a general transgressive trend infilling of a subsiding sedimentary basin during a marine transgression from the NW to the SE. Widespread basaltic pillows returned K-Ar ages of 950 Ma ± 20 Ma similar to the 935 ± 60 Ma age of magmatism related to the extensional stage of the Katangan Basin, during the initial rifting stage of the Lufilian Arc.

The palaeogeographical evolution of the Kasai-Katanga region during the deposition of the Mbuji-Mayi Supergroup consists of uplift and erosion of the Mesoproterozoic Kibaran belt accompanied by deposition, along its western edge, of molasses facies with the lower unit into a trough bordering the continent. During deposition of the upper unit the trough filled and sediments reached the outer margin. As the terrigenous sediments thinned outwards, they were progressively replaced by marine sediments. Stromatolites colonized when sedimentation ended resulting in dolomites. Interstratified breccia horizons suggest periods of tectonic activity and, locally, the Supergroup is terminated by a volcanic event.

The Bushimay trough belongs to a series of Neoproterozoic troughs displaying lithological features similar to those observed in the subtabular units of the same age, but characterized by greater thickness, especially as far as that of the tillites (not observed in the Mbuji-Mayi Supergroup) is concerned. These troughs are located along the limit between the craton and the Proterozoic mobile belts; zones of weakness reactivated during the Neoproterozoic.

The trend of the outcropping area of the Mbuji-Mayi Supergroup, or of the Bushimay trough excepting along the Kibaran belt is parallel to other NW-SE oriented structures in Central Africa: the Phanerozoic Karoo rift basin of Kalemie-Lukuga, the Palaeoproterozoic Ubendian belt, reactivated during the Neoproterozoic and the Aswa lineament. The NW-trending Muji-Mayi Supergroup coincides to a segment of the Neoproterozoic alkaline plutonic alignment (1,700 km long; c. 750 Ma), event indicative of the lithospheric scale of the reactivation.

THE ITOMBWE AND IRUMU TROUGHS: The Itombwe Syncline of Neoproterozoic Upper Precambrian age is composed of shales, quartzites and conglomerates, with accessory diamictites belonging to the Système de l'Urundi (Urundian), resting unconformably upon Rusizian metamorphic rocks. The Itombwe Supergroup was subdivided into a lower Nya-Kasiba Group (about 1,000 to 1,500 m thick) and an upper Tshibangu Group (~2,000 m thick). The tin-bearing granites intruded into the lower group, but pre-date deposition of the upper group since the conglomerates contain pebbles of the same granite.

The Itombwe Supergroup belongs to an alignment of Neoproterozoic grabens occurring along the main tectonic structures of the Palaeo- and Mezoproterozoic basement in Central Africa, possibly reactivated during Pan African and Palaeozoic distensions. The Irumu trough in NE Congo, belongs to the same alignment of troughs. This structure is filled with the Lower Lindian Loyo Formation and Phanerozoic Karoo deposits separated by diamictite (Mixtite de la Loyo) corresponding to the Akwokwo and Haute Ibina diamictites.

The Neoproterozoic troughs (or grabens) are located along structures in the basement reactivated during Pan-African and Paleozoic distensions, and responsible for the origin of the western branch of the Cenozoic Eastern Rift and the emplacement of the Neoproterozoic alkaline plutonic alignment. The Neoproterozoic troughs are linked to the development of

NW-trending regional strike-slip faults, including the Ranotsara (Madagascar) - Aswa shear zone; implying a zone of NW-trending Mbuji-Mayi sequences, in the south, and a NW-SE-trending area filled with Lindian sediments fringing the Archaean or Proterozoic Bolume Formation. Similar Neoproterozoic troughs occur in Tanzania, along the NW-trending reactivated Palaeoproterozoic Ubendian belt. The junction between both segments is an area of pre-Cenozoic episodic intraplate reactivation as evidenced by the Neoproterozoic conjugate strike-slip and/or oblique-slip Bukoban-Malagarasian volcano-sedimentary basin in Burundi and NW Tanzania and of the Karoo rift basin of Lukuga, in DRC.

- **BREAKUP OF RODINA**

EVIDENCE IN BAS-CONGO: RIFTING AND PASSIVE MARGIN EVOLUTION: Following stability during the Mesoproterozoic, the evolution of the West Congo belt is linked to early Neoproterozoic (c. 1,000 - 910 Ma) dextral transtension. This induced transverse rifting related to Combian faulting, early Zadinian sedimentation and minor peralkaline melt along a transverse NE-trending mega-shear system in a pre-Pan-African basement (Palaeoproterozoic Kimezian Supergroup) uplift zone (Noqui and Palabala; c. 1,000 Ma). Subsequently, lithospheric extension in pull-apart rifts along the Congo cratonic boundary triggered extensive continental magmatism. Increased asthenospheric upwelling induced major rifting accompanied by higher degrees of partial melting of the lithospheric mantle (Gangila CFBs; c. 930 - 920 Ma). Finally, melts derived from older lithospheric mantle resulted in Mayumbian felsic magmatism (c. 920 - 910 Ma).

The Araçuaí belt in Brazil indicates an oceanic stage at c. 800 Ma (ophiolitic remnants), suggests a drifting event between c. 910 and 800 Ma, following Zadinian – Mayumbian rifting that marks the commencement of breakup in that part of the Rodinia supercontinent.

EVIDENCE IN KATANGA: RIFTING AND PASSIVE MARGIN EVOLUTION: The Katangan rifting consists of extensional tectonics ranging from continental up to proto-oceanic rifts, accompanied by the emplacement of mafic and minor felsic igneous rocks. The deposition of the Roan Supergroup considered younger than 900 Ma is linked to this event.

The Neoproterozoic alkaline plutonic alignment extends about 1,700 km along the present-day Western Rift. It is curved with a northern NNE oriented segment becoming NW-trending to the south. This alignment is composed of granites and quartz-syenites to feldspathoidal syenites and carbonatite intrusives.

Emplacement of the Upper Ruvubu Alkaline Plutonic Complex of Burundi (c. 750 Ma) similar to the emplacement age for the various Neoproterozoic plutonic massifs, including those in Kivu associated with mineralization (Lueshe) has been proposed. The alkaline intrusions may be related to the intraplate reactivation event hosting Neoproterozoic shallow level sedimentary basins, such as the Itombwe in Kivu.

In the south, the NW-trending segment of the Neoproterozoic alignment, as well as the present day rift, coincide with the western margin of the Archaean Tanzania Craton. Further north, the NNE-trending segment of the Neoproterozoic alignment and the rift do not coincide with the western margin of the craton, here underlined by the Mesoproterozoic late Kibaran plutonic alignment. The northern part of the Neoproterozoic plutonic alignment, parallel with the present-day rift and with the Neoproterozoic troughs does not match any well-identified Precambrian lithospheric discontinuity. The occurrence of the plutonic alignment however suggests the existence of such a discontinuity, which has tentatively been related, to the

western limit of the Kibaran Western Internal Domain with the Congo Craton, or another, until now, not properly defined northwesternmost terrane of the Kibaran belt.

In North Kivu, the Lueshe pyrochlore-(apatite)-bearing carbonatite is present. Also in Kivu from N to S are the Mombadio, Bingo and Kirumba carbonatite-bearing massifs.

To the west of Moba, in northern Katanga, several plutonic complexes are intrusive in the tabular Roan Supergroup sequences. The Mount Kalolo hornblende syenite with accompanying gabbro and hornblende granite and other occurrences of similar rocks in the area may belong to the Neoproterozoic alkaline complexes.

- **ASSEMBLY OF RODINA AND KIBARAN OROGENY (AT c. 1,000MA)**

MESOPROTEROZOIC (1.6 - 1.0 GA) EVOLUTION OF THE KIBARAN BELT: The approximately 1,500 km linear NNE-trending Mesoproterozoic Kibaran belt extends from the Kibara Mountains in Katanga in southern Congo, to southwestern Uganda (Ankole), through eastern Congo (Maniema and Kivu), Burundi, Rwanda and northwestern Tanzania (Karagwe). This belt, along the eastern edge of the Congo Craton (stabilized at c. 2 Ga), belongs to a roughly parallel series of Mesoproterozoic belts of eastern (Irumide, Malawi-Mozambique) or southern (Lurio, Natal, Namaqua) Africa. The Kibaran orogeny on the Northeastern Kibaran Belt terminated at c. 1,250 Ma (culmination of orogeny at c. 1,370 - 1,310 Ma); a unique feature in the African continent, well-individualized from the Greenvillian orogeny.

The Complexe des Kibara or Système des Kibara has a type area in the Kibara Mountains of central Katanga. The large Kibaran belt runs through Katanga, across Maniema, Kivu, Burundi and Rwanda ("the Burundian"), and merges with the Karagwe-Ankolean of SW Uganda and NE Tanzania. The Burundian Supergroup, similar to the Kivu and Maniema lithological succession, is the lithostratigraphic unit involved in the Kibaran orogeny of Burundi, Rwanda.

Geodynamic evolution predominantly takes into account the northeastern segment of Kibaran Belt in Burundi, Rwanda, SW Uganda and NW Tanzania suggests **a**) an *intracontinental evolution* involving a succession of structural events, marked by the emplacement of successive granite generations, between c. 1,350 and c. 950 Ma (Rb-Sr) has been considered, and **b**) the late Kibaran alignment of mantle derived plutons (Kabanga-Musongati mafic-ultramafic complexes and string of A-type granitoids) indicative of evolution in an *intraplate setting* without production of oceanic crust. The pluton ages indicate the Kibaran orogenic phase occurred between c. 1,330 and c. 1,250 Ma (U-Pb) hence the younger Rb-Sr ages are due to episodic structural reactivations.

The Northeastern Kibaran Belt consists of a strongly deformed and metamorphic Western Internal Domain and a weakly evolved metasedimentary Eastern External Domain, resting on the Archaean Tanzania Craton, separated by the Boundary Zone intruded by orogenic mantle derived A-type granitoids and mafic-ultramafic layered complexes hosting Ni-Co-Cu-Ti-V-PGE. The Kibaran belt defines a major tin province in DRC that includes W, Nb-Ta, Li, Be and Au (Kivu, Maniema, Katanga), Rwanda, SW Uganda, NW Tanzania and N Burundi. The internal domain is characterized by multiple phases of granites, and subsequently (c. 1,000-950 Ma) intruded by post-Kibaran tin granitoids and pegmatites.

The relationships between the Kibaran tectono-magmatic events in Congo, Burundi and Rwanda are confirmed in NW Tanzania, in the Karagwe-Ankolean equivalent terranes. The

Kibaran occurrences in Kivu, Maniema and Katanga of DRC may correspond to the Western External Domain.

The late Kibaran Kabanga-Musongati mafic-ultramafic alignment was controlled by a late lateral shear. South of Burundi the northeast-trending alignment disappears and is offset into the NW-SE-trending Ubendian reactivated structures along the southwestern limit of the Tanzania Craton.

In Katanga, the Kibaran domain is characterized by NE to NNE trending linear synanticlinorially folded metasedimentary sequences and intrusions of granites and pegmatites, some belonging to the c. 1,000 - 950 Ma Sn province. The Kibaran may underlie part of the Katangan domain and the Manika sinistral strike slip fault defines the southeastern limit of the Kibaran.

The Luhule-Mobisio and Bilati units, in northernmost Kivu, may be the Mesoproterozoic formation. The Luhule-Mobisio unit was interpreted to be situated at a lithostratigraphic level between a locally defined Middle Burundian and a Middle Lindian tillite, however it may be Palaeoproterozoic.

The Western Internal Domain of the Northeastern Kibaran Belt, characterized by crustal anatectic granites has subsequently been intruded by post-Kibaran tin granitoids and pegmatites (c. 1,030 - 950 Ma) related to a Lomamian orogeny of the Katangan tectonic cycle. The tin-bearing pegmatites and hydrothermal veins in the Kibaran belt, in NW Tanzania (Karagwe-Ankolean) have the same c. 950 Ma age. Detrital minerals from tin granites (c. 980 Ma) occur in the base of the Neoproterozoic Roan Supergroup (Katangan System).

The Sn-W-Nb/Ta-Li-Au-bearing Kibaran quartz veins c. 1,400 - 900 Ma event consider the Lomamian orogeny as a particular event closing the Kibaran belt evolution. Tin-bearing granites, an integral part of the Kibaran evolution, intruded c. 350 Ma after the main Kibaran granitic event originated from a deeper crust similar in composition to the older (c. 1,370 Ma) Kibaran granites.

- **PRE-RODINA EVOLUTION**

PALAEOPROTEROZOIC (2.5 - 1.6 GA): The Paleoproterozoic Rusizian belt runs from Lake Kivu to Lake Tanganyika defining the border between Rwanda-Burundi and Congo is considered as the NW extension of the Ubendian (or Ubende) shear belt occurring in western Tanzania, along the Tanzania Craton and extending southeastwards into NE Zambia and N Malawi. The Congolese extension of the Tanzanian Ubendian belt is the Bangweulu Block.

The Ubendian belt of western Tanzania, bounding the Tanzania Archaean Craton to the west, and hosting a base metal and gold-bearing province, the Mpanda Mineral Field is composed of high grade metamorphic sequences persistently displaying NW-trending structures. The different terranes of the belt are separated by steeply inclined and NW oriented shear fault zones. The Ubendian shear belt underwent a two-stage evolution during the Palaeoproterozoic: an early stage of major oblique collision under granulite facies metamorphic conditions occurred at c. 2.1 - 2.0 Ga, while a second phase under amphibolite facies conditions and NW oriented folding and shearing was dated at 19.5 - 18.5 Ga. Episodic reactivation resulted in local small elongated strike slip basins of Neoproterozoic and of Karoo ages within the Ubendian belt. The recent rift tectonic also follows the NNW shear along Lake Tanganyika. In Kivu, the reactivation of the Rusizian-Ubendian structures

resulted in NW-trending Karoo Lukuga. The episodic reactivation explains the Rusizian belt, apparently cross-cutting the younger Kibaran belt.

The Ubende Shear Belt a major suture or plate boundary during the Palaeoproterozoic, started by oblique subduction prior to 2.0 Ga, and exhumation of slabs of oceanic crust and subduction ended around 1.85 Ga during a major phase of dextral lateral shear culminating in transpression.

THE BANGWEULU BLOCK OF NORTHEASTERN KATANGA: The cratonic Bangweulu Block a segment of the Ubende belt in northeastern Katanga, northeastern Zambia and western Tanzania, includes possible Archaean segments assembled in a Palaeoproterozoic (2.5 - 1.6 Ga) structural setting. This assemblage is composed of schists, gneisses and by late Palaeoproterozoic (c. 1.8 Ga) felsic metavolcanics intruded by cogenetic granitoids, exposed in Katanga, in the northernmost part of the Bangweulu Block, in the Marungu plateau and in western Tanzania where it is known as the Kate-Kipili volcano-plutonic complex. Steeply inclined Palaeoproterozoic ductile shear faults may have developed in the Bangweulu block and may have been repeatedly reactivated.

In DRC three magmatic cycles occur within the Bangweulu Block. The first identified in the Moba area, consists of calcaline gabbros, diorite, quartz diorite, granodiorites and granites, dated at c. 1,950 Ma the second event at c. 1,870 Ma is characterized by granodioritic and monzogranitic subvolcanic rocks and minor gabbro and diorite. These two events correspond to syn- and late-kinematic activities. The third igneous event includes doleritic and gabbroic rocks cutting across the rocks formed during the previous two events. These continental flood basalts (tholeiites) emplaced during post-orogenic Ubendian uplift and associated extension estimated at c. 1,740 Ma.

Late Palaeoproterozoic (c. 1.9 Ga) granitic domes within the Neoproterozoic Pan-African Lufilian Arc are linked to the Bangweulu Block. The Domes region is defined as an arcuate chain of Palaeoproterozoic basement inliers occurring within the Neoproterozoic rocks of the Lufilian Arc, dated from 2,000 to 1,700 Ma. The Dome region, occurring in the Zambian Copperbelt of the Lufilian Arc has been overthrust by the Neoproterozoc Katangan sequence.

THE PALAEOPROTEROZOIC DOMAIN OF KASAI–KATANGA – NE ANGOLA: The Precambrian basement of the Kasai and Katanga provinces forms part of the larger Kasai Shield (or Block), belonging to the Congo craton, which extends from Katanga in the south and east, over the Kasai Province, into northeastern Angola. The Katanga covers the largest part of the exposed Kasai Shield.

The Archaean formations from the Kasai and western Katanga extend westwards, from northeastern Angola to the Atlantic coast and occupy a vast portion of this Congo craton. Towards the east, the Archaean formations are covered by Mesozoic and Cenozoic sediments.

The Kasai–Katanga domain includes Archaean and Palaeoproterozoic rock units. The northeastern, eastern and southeastern margins of the domain are represented respectively by the Neoproterozoic sediments of the Bushimay (Mbuji Mayi) region, the southern part of the Mesoproterozoic Kibaran belt and the Neoproterozoic Lufilian belt.

The Palaeoproterozoic basement in Kasai comprises a) the Gabbronorite Complex, b) the Lulua-Luiza Supergroup, subdivided into i) an upper Lulua volcano-sedimentary Group, and

ii) a lower Luiza metasedimentary Group. The Lukoshian, defined in Katanga is viewed as the correlative of the Luiza Group.

The Gabbronorite Complex: The Archaean Charno-enderbitic and Granultic Complex of the Kasai–Lomami is bounded to the northeast by a large gabbronorite, gabbro and amphibolite plutonic complex considered as Palaeoproterozoic. The gabbronorites outcrop in two vast zones, respectively in an isolated massif (Lueta gabbronoritic massif) in the north, "embedded" in formations of the Palaeoproterozoic Lulua-Luiza Supergroup and in a southern zone bounded in the north by the Lulua–Luiza Supergroup and in the south by the Archaean Charno-enderbitic and Granulitic Complex of the Kasai–Lomami and/or by the Archaean Granito-gneissic Complex of Western Katanga. The Lueta gabbronoritic massif is in fault contact with the northern Palaeoproterozoic Lulua volcanosediments. The contact between the Lueta gabbronoritic massif and the Palaeoproterozoic Luizian Group in the south is obscured by younger granites.

The **Gabbronorite Complex** was emplaced and metamorphosed between c. 2.5 – 2.3 Ga distinctly different from the Archaean Moyo–Musefu event (3.1 – 2.6 Ga). The Gabbronorite Complex is younger and disassociated from the Archaean Charno-enderbitic and Granulitic Complex of the Kasai–Lomami. Emplacement of the Gabbronorite Complex intrusions and smaller basic dykes in a primary granulite complex (c. 2.8 Ga) during a Palaeoproterozoic event, distinct from the younger Mubidji event (c. 2.2 Ga) is suggested, hence the distinction of a Palaeoproterozoic event called Pre– Mubindji, with mafic igneous rocks at c. 2.4 Ga.

THE LULUA–LUIZA SUPERGROUP: A single Palaeoproterozoic Lulua-Luiza Supergroup (2.2 – 1.9 Ga) consists of: a) an upper volcano–sedimentary unit (the Lulua Volcano–sedimentary Group) and b) and a lower and older metasedimentary unit (the Luiza metasedimentary Group and the Lukoshian).

The Luiza metasedimentary Group (c. 2.1 Ga) of mica–bearing quartzites, itabirites (BIFs), micaschists, and locally metamorphic conglomerates lie unconformably on the main Gabbronorite Complex. It outcrops in a roughly ENE–WSW trending belt south of and in fault inferred contact east of the Lulua volcano-sedimentary Group and is separated from it in the west by the Lueta gabbronoritic massif. The BIFs originated from and follow the contours of the Lueta gabbronoritic massif. Pegmatites dated at c. 2.0 Ga occur with the Luizian metasediments and granites dated at c. 2.01 Ga occur in the Archaean Granito–gneissic Complex of Western Katanga.

The **Lukoshian metasediments** in southwestern Katanga are equivalent to the Luizian. In the Archaean Granito–gneissic Complex of Western Katanga, several extensive areas covered by supracrustals reminiscent of greenstone affinities occur as well as isolated areas of metasediments and amphibolitic schists, in the Kisenge–Sandoa area of westernmost Katanga are part of the Palaeoproterozoic Lukoshian metamorphic series, equivalent to the metasedimentary Luizian Group of the Kasai.

The **Pre–Mubindji** event, with mafic igneous rocks at c. 2.4 Ga, and the Mubindji event, implying metasedimentary rocks at c. 2.2 Ga as well as granitic and pegmatitic post-tectonic intrusions at c. 2.0 Ga are both characterized by extensional tectonics, fracturing and rifting. The Luizian refers to the stratigraphic unit involved in the Mubidji event.

The Lulua volcano-sedimentary Group is 4,000 to 7,000 m thick oriented E–W, composed of schists, quartzites and interstratified mafic volcanic rocks and covers a 170 x 20 km area in the Kasai, astride the 7°S Latitude, and extends discontinuously for over 125 km in a SW

direction in Angola and locally known as the Cartuchi–Camaungo and Luana Formations. In DRC, the Lulua volcano-sedimentary Group (c. 2.0 Ga) is in contact to the north with the Archaean Dibaya Granitic and Migmatitic Complex and is bounded to the south by the Palaeoproterozoic Luiza metasedimentary Group and the Palaeoproterozoic Gabbronoritic Complex. Sedimentation is younger than the Mubidji events (c. 2.2-2.0 Ga).

The linear contact with the Archaean Dibaya Granitic and Migmatitic Complex was interpreted to be a major fault, namely the Malafudi Fault however in the Kasadi–Sadi (W) and Kamponde (E) areas, the Lulua Group lies unconformably on the Archaean Dibaya Granitic and Migmatitic Complex thus not supporting the Malafudi fault.

A submarine origin to the west and a subaerial origin to the east are suggested. The lavas occurred through extensional fissures and were transformed during an oceanic–type metamorphism under greenschist facies conditions. The origin of the elongated basin, located between two Archaean complexes may be a local result of the global distensional process that broke up the lithospheric Archaean plates between 2.0 and 1.7 Ga; such a process could involve a series of local reactivations that does not require the definition of orogenic events.

THE KIMEZIAN SUPERGROUP OF THE WEST CONGO BELT IN BAS-CONGO: In the Pan-African West Congo orogenic belt, in Bas Congo, a major angular unconformity separates the Neoproterozoic Zadinian Supergroup from the underlying c. 2.1 Ga Eburnian gneissic basement, known as the Kimezian Supergroup, affected by the Tadilian orogeny.

ARCHAEAN (>2.5 GA): The Archaean terrains exposed in northern DRC and adjacent countries (CAR, Uganda and southern Sudan) covers c. 500,000 km², include the Bomu amphibolite and gneiss Complex, the West Nile gneissic Complex and the Upper Congo Granite-Greenstone association. Outcropping in Equator Province are the Turkwa, Dula, Banda and Litima Archaean inliers. Correlations are speculative due to a lack of geochronological data areas of impossible access.

The Archaean Bomu amphibolite and gneiss Complex (Mbomou or M'Bomou Complex in CAR), covering c. 75,000 km², outcrops in CAR and DRC, with a ENE-WSW trend of c. 350 km, includes high-grade amphibole-pyroxene-bearing gneisses and granitoids outcropping predominantly between 22° and 25°E Longitude and 3°30’ and 5°30’N Latitude are cut across by the Bomu River. The Ganguan supracrustal series are considered as part of this complex.

The Ganguan supracrustal series, resting upon the Archaean Bomu gneisses, includes quartzites and slates and metavolcanics (talcschists). It is considered as part of the Kibalian-Ganguan greenstones and geochronology data confirm the Archaean age of the Ganguan series. The Kibalian has been divided into two distinct lithostratigraphic subdivisions and the Bolume Formation is considered to be Archaean. The Ganguan supracrustal rocks form four more or less distinct zones of some tens of square kilometres, resting upon or infolded into the high-grade gneissic units of the basement west-plunging NNW-verging synform (Bili area) or NW-trending antiform (Matundu area).

Mylonitic deformations of the Bomu Complex have been dated at c. 0.9 Ga, a thermo-tectonic event has been recorded within the Bomu mafic gneisses and the Nzangi granitoid gneisses at c. 2.98 Ga. The granitoid precursors of the Nzangi gneisses have been dated at c. 3.42 Ga. Granitic batholiths (Bondo granite) intruded the Nzangi gneisses at c. 2.45 Ga. The evolution of the Bomu Complex thus spans 1 billion years.

The Ganguan series are intruded by aplitic and quartz veins and by small doleritic massifs. The quartz veins contain galena dated at c. 3.2 Ga. The Ganguan is older than c. 2.9 Ga as it is involved in a tectonic phase dated within the Archaean gneissic basement (c. 2.98 Ga), which supports the quoted c. 3.2 Ga model age. These data preclude a Palaeoproterozoic age.

The Upper Congo Granite-Greenstone ("GG") association of North Congo ("DRC") covering 200,000 km² belongs to the granite-greenstone belts of northeastern DRC and CAR. In NE Congo, the greenstone belts are referred to as the Kibalian (Supergroup) of Archaean age or to the Ganguan. Greenstones comprise 15-20% of the Granite-Greenstone association and are more abundant in the eastern part. They form a dozen of approximately 10 to 100 km² zones of metavolcanics and some metasediments as illustrated on Figure 7.1b. In CAR, the Bandas greenstone belt, composed of metatholeiites and some banded iron formation ("BIF") is intruded by tonalites, some 2.8 Ga old. Granitoids form a significant part of the Precambrian in northeastern DRC, whereas only minor elongated patches occur in CAR.

In DRC Kibalian zones of Kilo and Moto has identified Upper Kibalian sediments, with some andesitic volcanics, resting upon a Lower Kibalian volcanic granitoid association. The metavolcanics of the Lower Kibalian have been subdivided into ultramafic, mafic, intermediate and andesitic terms. The sediments are pelites and BIF.

The granite-greenstone ("GG") associations of the Archaean greenstone belts of the northern Congo craton have been classified according to their nature and to that of their basement as **a**) The type A GG association (c. 95% of the gold output) consists of greenstones with abundant mafic-ultramafic volcanics and scarce sediments. Basement has not been recognized. Associated granitoids correspond to a typical TTG suite. The tonalites of this GG association intruded 2.8 - 2.9 Ga ago, and **b**) the type B GG association comprises mafic-intermediate volcanics and sediments (mainly BIFs). Their basement consists either of type A GG association or of medium to high-grade metamorphic rocks. Associated granodiorites and granites (2.4 - 2.5 Ga) represent most of the volume of the entire greenstone belts, intruded this type B association and its basement.

The areas of the volcanic-granitoid Lower Kibalian are more or less isometric and display a synclinorial tectonic style, while the greenstones of the Upper Kibalian form belts less than 10 km wide, 30 - 60 km long made up of units isoclinally folded along subvertical axial planes and horizontal axis. These units "float" within the granitoids.

The Lower Kibalian is intruded by c. 2.81 Ga old tonalites, whereas the Upper Kibalian is intruded by c. 2.46 Ga old granodiorites and granites that represent most of the volume of the GG belt. The Kibalian ranges from the Archaean (lower term) to the Archaean/Palaeoproterozoic limit (upper term).

The GG association of NE Congo is limited to the west, north and east by high-grade metamorphic rocks belonging to the Bomu amphibolite and gneiss Complex and the West Nile gneissic Complex. Major tectono-metamorphic and magmatic events have been recorded at c. 2.9 - 3.0 and c. 2.4 - 2.6 Ga in these complexes. The genesis and evolution of the GG terranes has thus gone in parallel with that of the gneissic complexes, creating constraints for the genesis of the crust segment now represented by the GG.

Type A GG seem to belong to an oceanic tectonic setting, maybe akin to that of modern insular arcs, while type B GG appear to have evolved either at the border of continental plates or inside such plates.

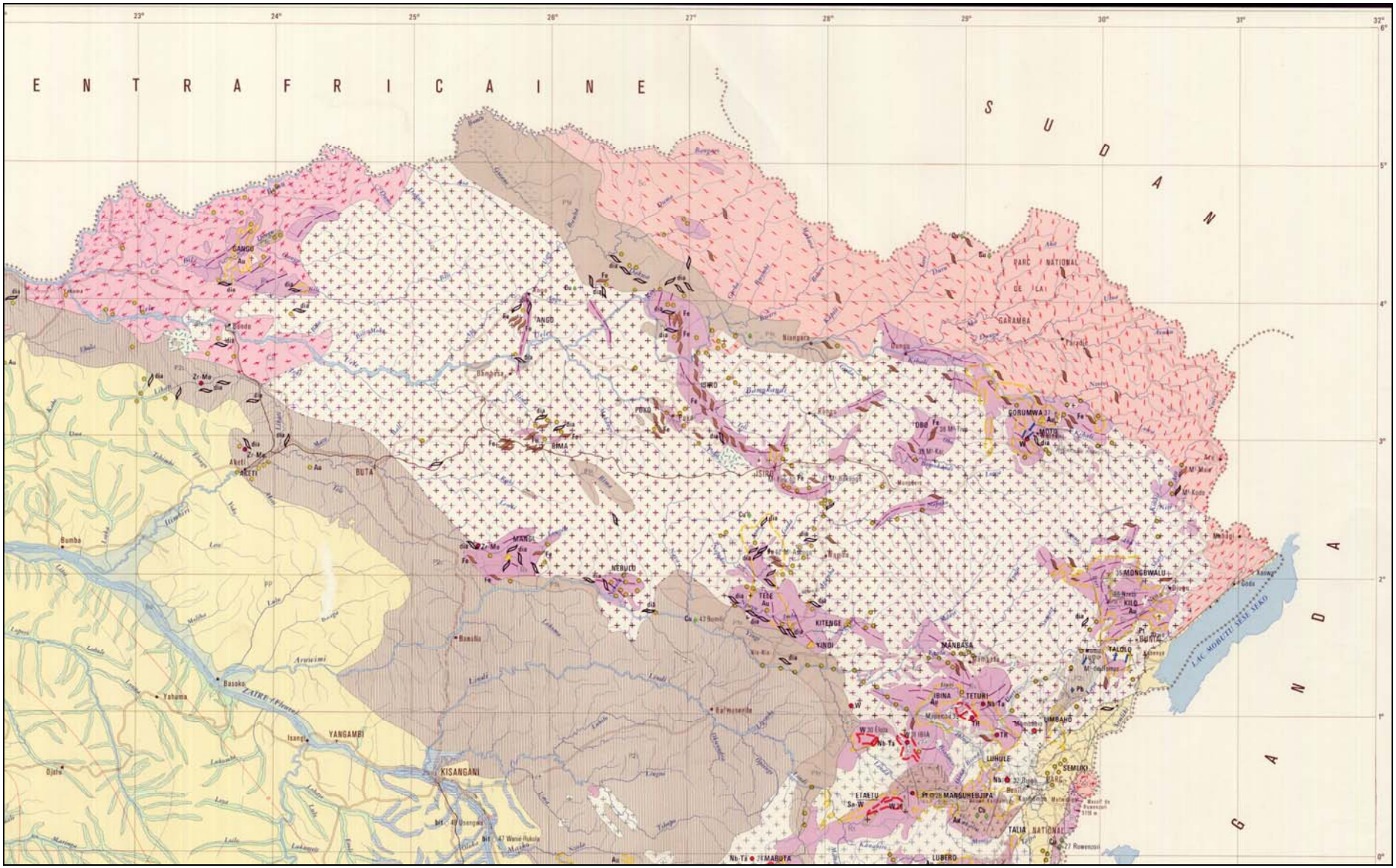

Figure 7.1b. Geological map illustrating the Kibalian greenstone belts in northeastern DRC.

The extensive Archaean West Nile gneissic Complex expands north and eastwards from DRC into Sudan and CAR, between 28°E Longitude and the Nile River. It constitutes the Basement Complex of Uganda, Southern Sudan and NE Congo (DRC) and W of 28°E Longitude remains virtually uninvestigated.

A complex association of two or three units of gneisses and migmatites outcrops along Lake Albert, in DRC, in continuation with the units defined in the West Nile District, Uganda. The Mount Speke gneissic Complex, in the Ruwenzori uplifted massif (horst), located in the Western Rift might be linked to the Garamba gneissic Complex.

Included in the West Nile Complex is the Niangara-Zemio supracrustal series. This elongated NW to NNW-trending narrow zone (20-50 km) runs across DRC (over c. 300 km) and CAR (over c. 150 km) along the edge between the West Nile Complex and the Upper Congo Granite-Greenstone association. Two units separated by an angular unconformity have been identified in this zone.

The lower unit observed in the Niangara-Zemio zone is referred to as the Bolume Formation which may be equivalent to the Ganguan supracrustal series resting unconformably upon rocks considered as Upper Kibalian in the Isiro Kibalian zone. The Bolume Formation is regarded as a Palaeoproterozoic unit.

The structural framework of The West Nile Gneiss Complex has been subdivided into six tectonic domains essentially in DRC.

The Niangara-Zemio zone, including the supposedly Archaean Bolume Formation, is bounded by NE to ENE dipping thrust fault, typical of those characterizing the south-verging Pan-African Ubanguide orogen.

Based on the geochronological data obtained for the West Nile Complex the Watian Group, from Uganda has been refolded (along an E-W trend) under granulitic conditions c. 2.91 Ga ago. The younger Aruan Group, also defined in Uganda, has experienced several tectono-thermal and intrusive episodes, at c. 2.67 Ga (tightly folded migmatites with N-S trending axes), c. 2.64 Ga (emplacement of monzonites), c. 2.55 Ga (open folds?) and c. 2.42 Ga (emplacement of granites). These (Rb-Sr) ages are only indicative. Moreover, the Watian and Aruan Groups are confined to the southeasternmost part of the West Nile Complex, close to the Upper Congo Granite-Greenstone association and constitute only a relatively small area of the complex.

Based on the extent of the West Nile Complex, the location and shape of the main units, the involvement of the Pan-African Ubanguide orogen should be considered.

The tectonic contacts between the Niangara-Zemio zone, including the Bolume Formation, and to the SW, the Upper Congo Granite-Greenstone association, and to the NE, the West Nile gneissic complex are thrust faults, developed during the D_2 tectonic phase characterized in northern DRC and southeastern CAR by the Yalinga thrust sheet, the eastward extension of the Yaoundé and the Gbayas thrust sheets.

The main part of the West Nile gneissic Complex is located in, and oriented along, the granitized and migmatitized northern basement unit of the Pan-African–Brasiliano Ubanguide-Sergipane fold belt. This unit is intruded by a suite of syn- to post-tectonic Pan-African granites. The westward extension of this unit in Cameroon corresponds to the

northern tectonic domain, composed of restricted metavolcanics of tholeiitic and alkaline affinities and metasediments and of calc-alkaline orthogneisses, of Neoproterozoic age.

The following are unknown: **a**) The pre-Pan-African (i.e. pre-D_2 thrust event) configuration of these Archaean domains, **b**) the volume of Neoproterozoic rocks (i.e. precursors of gneisses and granitoids) in the extensive West Nile gneissic Complex, and **c**) the Granulite Group, defined in Uganda, and the high-grade gneisses (granulite facies), defined in DRC in the West Nile Complex, correspond to the Neoproterozoic high-grade garnet-kyanite micaschists, gneisses and migmatites from the Yaoundé gneisses in Cameroon and to the Neoproterozoic orthogneisses, migmatites, granulites and charnockites from the Gbayas thrust sheet in CAR.

The Turkwa, Dula, Banda and Litima Archaean inliers identified in Equator Province (Figure 4.1b) consist of biotite-garnet-bearing gneisses in Turkwa, augen-gneisses in Banda and garnetiferous mica banded augen-gneisses associated to magnetite-bearing metacalc-schists in Dula. The Litima nucleus exposes albite-bearing leptynites. No radiometric age is available for these rocks, but they display similarities with Central-African Archaean units. In CAR, this basement is intruded by Archaean granites, implying a minimum Archaean age for this basement.

These inferred Archaean nuclei, may constitute small-sized inliers occurring within the inferred Palaeoproterozoic Ubangi Complex, in the core of anticlines (Turkwa, Banda and Dula) or after faulting (Litima).

THE KASAI–LOMAMI SUPERGROUP: The Archaean basement comprises several units, distinguished on the basis of lithologies or geographic situation. These entities comprised between 3.1 to 2.6 Ga, are the Moyo-Musefu event thus classified into the Kasai–Lomami Supergroup which comprises:

- the **Dibaya Granite and Migmatite Complex**;
- the **Charno-enderbitic and Granulitic Complex**, also known as the **Kasai-Lomami Gabbronorite and Charnockite Complex of the Kasai-Lomami**
- the **Granito-gneissic Complex of Western Katanga**, also known as the **Sandoa-Kapanga-Complex**
- the **Kanda-Kanda Tonalitic Complex**.

The Kasai-Lomami Supergroup developed in the vicinity of a continental nucleus, might be represented by the underlying Haute Luanyi Gneisses, covering a small area. These Archaean formations of the Kasai and neighbouring Angola were intruded by diamondiferous kimberlites during the Cretaceous.

The **Dibaya Granite and Migmatite Complex** outcrops in the northernmost part of the Kasai Shield, between 5° South Longitude and 7° South Longitude. The northern half of the complex is mainly occupied by migmatitic gneisses amongst which amphibolite zones locally occur. Calc-alkaline granitic rocks (Malafudi granites) occur in the southern half of the complex interpreted as the ultimate anatexitic product of the migmatization. The migmatites and granites are frequently intruded by ultramafic bodies and dolerite dykes. The ultramafic pyroxenites and serpentinites (Lutshatsha, Nkonko and Fwamba Massifs) are E-W elongated, extending over lengths of c. 20 km and widths of c. 2 km.

The Malafudi calc-alkaline granitic rocks (Rb-Sr c. 2.68 Ga) occurring in the southern half of the Dibaya Granite and Migmatite Complex are interpreted as the ultimate anatexitic product of the migmatitization (Rb-Sr c. 2.59 Ga).

The **Charno-enderbitic and Granulitic Complex of the Kasai–Lomami** are also known as the Kasai-Lomami Gabbronorite and Charnockite Complex covers the northern part of the Kasai Shield. It occurs between 7°S and 3°S Latitude and extends from the 24°30' E Longitude westwards into northern Angola and composed of charnockites and enderbites as well as granulites or leptinites. These rocks originated from sedimentary rocks and are the products of high grade metamorphism of an old gneissic basement of which the Haute Luanyi gneisses would be a remnant.

The granulites (charno–enderbites and hyperaluminous paragneisses) and the associated alaskites (mesoperthite-bearing leucocratic granites) from the Charno-enderbitic and Granulitic Complex of the Kasai–Lomami in DRC and Angola have been dated by Rb-Sr and U-Pb methods in the range from c. 2.76 to c. 2.89 Ga. The best estimated age for the metamorphic event is c. 2.82 Ga.

The Granito-gneissic Complex of Western Katanga, also called the Sandoa-Kapanga Complex, forms the southernmost part of the Kasai Shield, south of the 8° South Latitude nearly entirely in the Katanga Province. It forms the predominant component of the southern part of the Kasai Shield characterized by granulites, tonalitic to granitic gneisses, granites and (minor) amphibolites, are metamorphosed to the amphibolite–granulite facies. The granitic gneisses and the granulites have yielded Rb-Sr ages of c. 2.83 Ga, whereas granitoids from the Sandoa area, in this complex, were dated at c. 3.02 Ga.

The Dibaya Granite and Migmatite and the Charno-enderbitic and Granulitic complexes are separated in the west by the Palaeoproterozoic Lulua-Luiza Supergroup and their contact zone in the east, in the Kanda-Kanda region, is occupied by the large, Archaean plutonic Kanda-Kanda Tonalitic Complex. The leucocratic granites (alaskites) from the Kanda-Kanda Tonalitic Complex have been dated at c. 2.86 Ga (Rb-Sr). U-Pb age determinations on tonalities have yielded c. 3.1 Ga. The complex is zoned from a tonalite core to granodiorite and finally monzogranite or granite. The migmatites occur in the Dibaya and Charno-enderbitic Complexes and both areas have been affected by the same tectonic events including shearing and mylonitization.

The relation between these Archaean units remains unclear, and although the limits appear sharp on geological maps, their contacts are not exposed. The different units in the Kasai–Katanga–NE Angola domain may originate from the same unique phenomenon, which may have started around 3.1 Ga, until c. 2.6 Ga (Moyo–Musefu event). The units would have evolved concomitantly in somehow different conditions, reflected by their own particular characteristics.

The Haute Luanyi Gneisses: The Kasai–Lomami Supergroup developed in the vicinity of a continental nucleus, possibly represented by the underlying Haute Luanyi Gneisses, covering a small area in the very southern part of the Charno-enderbitic and Granulitic Complex of the Kasai– Lomami, in contact with the huge Granito-gneissic Complex of Western Katanga.

A punctual c. 3.4 Ga Rb-Sr age has been obtained on a pegmatite. The existence of a c. 3.4 Ga crust is accepted. The Charno-enderbitic and Granulitic Complex of the Kasai–Lomami derive in part from sedimentary rocks and are the products of high grade metamorphism of an old gneissic basement of which the Haute Luanyi gneisses would be a remnant.

Archaean ? nuclei of northern Katanga: In the northeastern part of Katanga, the Palaeoproterozoic Rusizian belt contains a small and presumably Archaean nucleus (the Muhila metasedimentary and crystalline complex). A second and larger nucleus attributed to

the same complex is reported more to the south, near the town of Moba (Baudouinville in the colonial period).

In the northern nucleus, corresponding to the type Muhila Mountains, the rocks include whitish to pinkish jasper with hematite banding, itabirites, banded iron formation ("BIF"), quartz-injected micaschists and sericitic quartzites. The main trend of the rocks is orthogonal to the general trend of the Palaeproterozoic Rusizian belt, which the Muhila complex underlies. The described lithologies may constitute reminiscent of Archaean greenstone belts compared to the greenstone belts of NE Congo (Upper Congo Granite-Greenstone association) and of Zimbabwe.

7.2 Local geology

The 1981 1:200,000 scale geological map edited by the Geological Survey of the Democratic Republic of Congo (formerly Zaïre) in conjunction with the BRGM of France covers the area of the KGL Masters Project Exploration Licences as illustrated in Figure 7.2. Exploration Licences 2621, 2622, 2624 and 2796 are covered by the southern part of the Mambasa sheet whereas Exploration Licences 2620, 2623, 2627, 2630, 2633, 2634 and 8437 are covered by the Beni sheet. Explanatory notes are presented on the maps.

These maps indicate that the region covered by the KGL Masters project Exploration Licences is predominantly underlain by groups of undifferentiated Lower Kibalian and Ante-Kibalian formations, namely;

- Orthogneiss Complex ("C8") a crystalline basement, badly differentiated and composed of laminated and retro-metamorphosed granites and granodiorites and occasional homogeneous orthogneisses and migmatites. In contrast to the region north of the Mambasa sheet, granites within the area covered by the KGL Masters Project Exploration Licences have a limited size, and

- Paragneissic Complex ("KL1C") composed of mesozonal gneisses and amphibolites. The 'C' in map symbol 'KL1C' is added to indicate the frequent difficulty in determining the contact between the KL1 and the C8 formations.

The Lower Kibalian metamorphism is of the deep mesozonal type. Alluvial concentrates are characterized by sillimanite-kyanite. Although still a matter of debate, the Kibalian association may correspond to a typical association of greenstone belts and tonalite-trondgheimite-granodiorite ("TTG") basement.

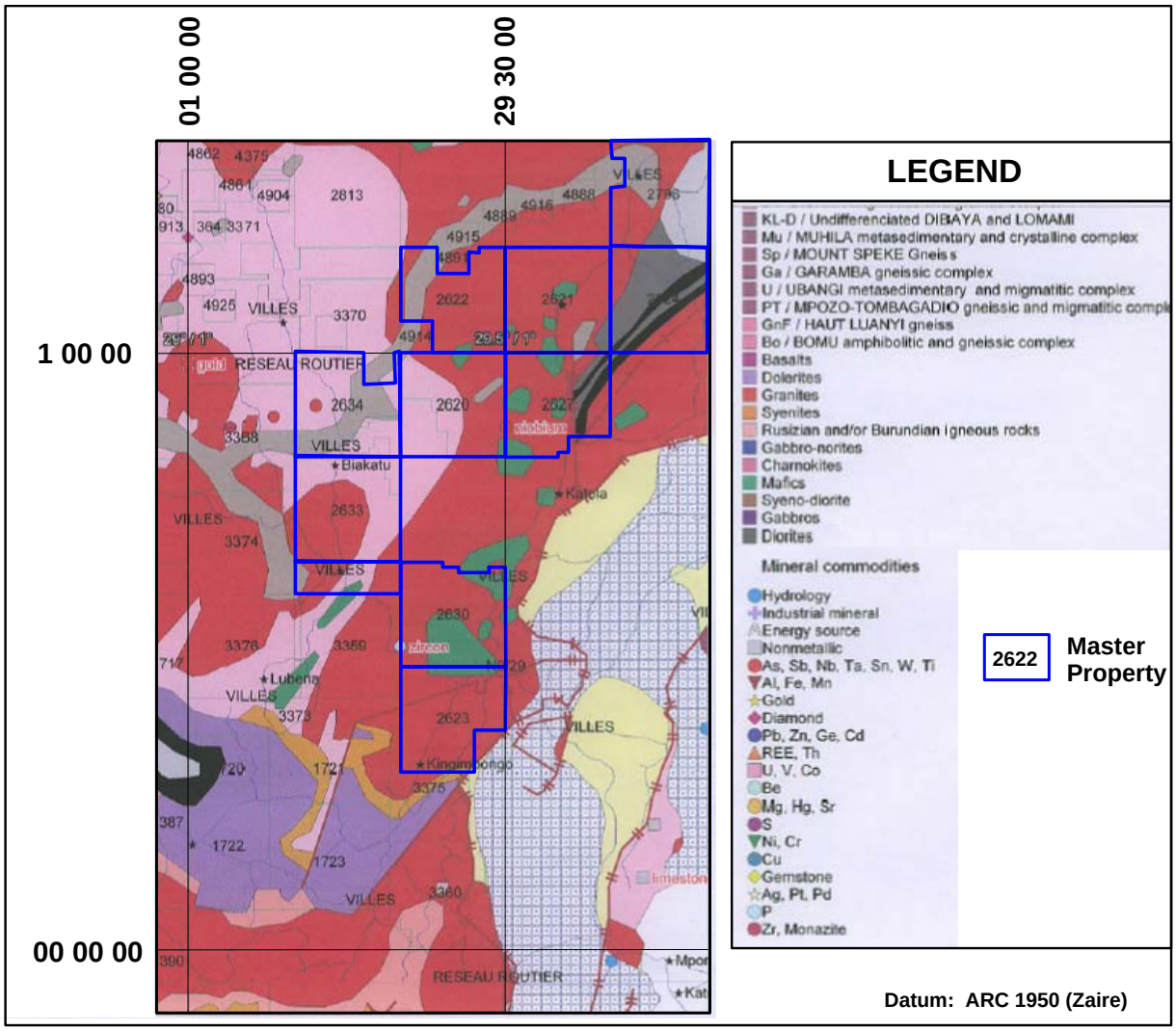

Figure 7.2. Map of the KGL Masters Project Exploration Licences and regional geology.

Upper Kibalian (“KL2”) formations are unconformably overlain by the Lower Kibalian formations. The KL2 formations are metamorphic (epizonal) volcano-sedimentary series, represented mainly by greenschists however, a mesozonal facies occurs locally.

Other formations are present, but of limited extent, in the area covered by the KGL Masters Project Exploration Licences, as follows:

- the **Neoproterozoic Lindian Loya Series** (“L4”) with a tillitic conglomerate, and tillites (“T”) of the same age, are present on Exploration Licence 2627. The Lindian formations lie unconformably on ante-Lindian basement and are predominantly situated between faults.

- the **Paleozoic Lukuga Series** (“P”) consisting of argillaceous detritic layers outcrop along the Ituri, Duma and Sambuku Rivers that flow across KGL Masters Project Exploration Licences 2634, 2620 and 2622. The basal conglomerate of the arkoses located in the lower Lindian layers are considered to have a fluvioglacial origin.

Intrusive rocks

The intrusive rocks noted in the area of the KGL Masters Project Exploration Licences, possibly representing several generations and intrude indiscriminately all the basement formations are:

- quartz veins: seem to be more frequently associated with KL2;
- pegmatites: linked mostly to the granitic formations, are never mentioned to occur in K2L or in sedimentary Lindian layers;
- dolerite and doleritic gabbro, diorite.

7.3 Property geology

The lithostratigraphic succession of the region as summarized by Tshinyama, et al., (2007) consists from upper to lower of:

- Post Karoo
- Karoo formations
- Lindian (Neoproterozoic)
- Kibalian (Mesoproterozoic)

The Post Karoo is essentially represented by lateritc cuiriasse. The Karoo formation is formed of black shales, elluvial and alluvial deposits. The Lindian is composed of black argillite and sandstone intercalated with arkosic sandstone, red micaceous sandstone, conglomerates and a number of basic dykes.

The Archaean Kibalian consists of the Upper Kibalian that unconformably overlies on the Lower Kibalian which is subdivided into a Paragneissic Complex and an older Orthogneiss Complex. The Upper Kibalian (Burundian) consists of gray quartzitic sandstone often with pyrite, pale grey shales, graphitic shales and horizons intercalated with fine quartzitic sandstone, banded sericite schists, quartz-sericite schists, medium grey to grey-green phyllites, pale grey fine to medium grained quartzites with pellitic sediments transformed by contact metamorphism to spotted schists and red banded shale.

The Lower Kibalian Paragneissic Complex is comprised of undifferentiated gneisses and amphibolites. The older Orthogneiss Complex consists of granite, laminated granodiorites metamorphosed to Orthogneiss and migmatite.

The geology of the initial eight KGL Masters Project Exploration Licences as illustrated on Figure 7.3 is a compilation by RMCA (2007).

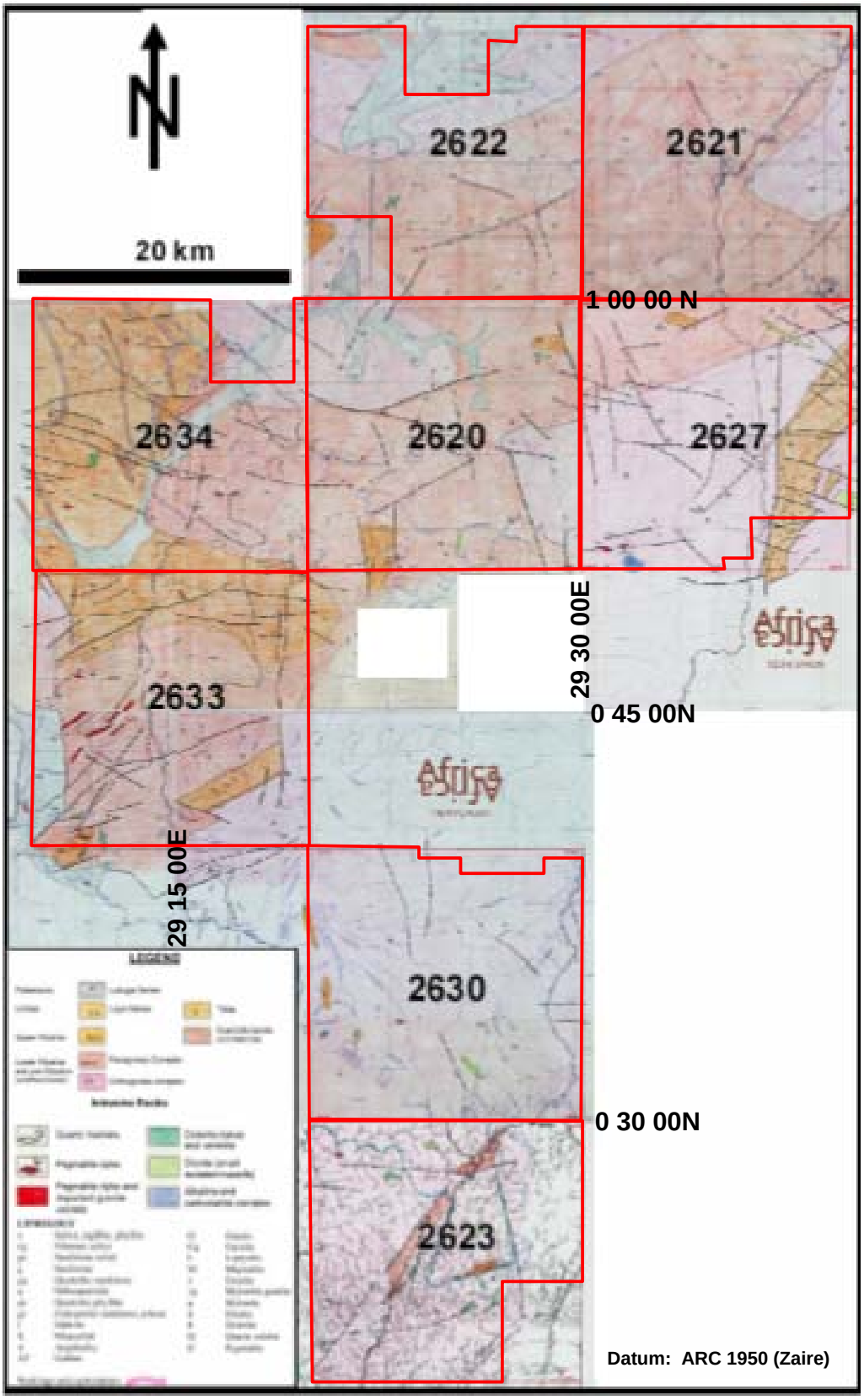

Figure 7.3. Geological map of eight of the KGL Masters Project Exploration Licences (RMCA, 2007).

8.0 DEPOSIT TYPES

Gold deposits of the Orogenic type and possibly the Intrusion-related type are being targeted on the KGL Masters Project. Mineralization similar to that of the Moto Goldmines (www.motogoldmines.com) and Anglogold Ashanti deposits, (www.anglogoldashanti.com) hosted in thrust faults and shear zones may be hosted on the property covered by the Masters Project Exploration Licences.

Geological model of deposit type being explored for

Gold mineralization within the area covered by the KGL Masters Project Exploration Licences is known to be hosted within the Kibalian greenstones and associated rocks. Gold may also be present within granitic intrusions. Given that the historical records do not contain sufficient information, such as metallic mineral assemblages, alteration mineralogy, structures, consistency in historical literature, etc., to determine the exact geological model of gold deposit(s) that would normally occur within the geologic setting of the KGL Masters Project the following represents the most likely scenarios.

- Orogenic gold deposits,
  Include:
  - shear zones
  - quartz veins or lodes, and
- Intrusion-related gold deposits
  - occur in the intrusive margin and in the halo of the surrounding lithologies

Orogenic gold deposits most consistently develop in latter stages of still ongoing regional deformation in the host metamorphic terranes. Characteristics of this deposit type are illustrated herein in Figure 8.0a and as noted by Goldfarb, et al (2005), include:

Regional Control

- First order regional fault zones:
  - Most productive gold provinces in metamorphic belts are linked to major crustal structures although ore is not directly hosted by these faults.
  - Typically several hundred kilometres long by few hundred metres wide
  - Many are not single faults but segmented structures indicative of multiple deformation events
  - Parallel to subparallel to volcanic stratigraphy in Precambrian greenstone environments and to accreted terrane margins in Phanerozoic settings
  - Commence as shortening and high-angle reverse motion (thrusts) and change to strike-slip motion; change in regional stress may be critical for fluid migration during extreme pressure fluctuations associated with major seismic events
  - Conduits for massive volume of auriferous fluids, but rarely host the deposit

- Lower order faulting
  - second and third order faults are sites of mineral deposition
  - fluids focusing into lower order faults, is most effective in areas of jogs, changes in strike, or bifurcations of the first order system
  - other favourable areas with low or minimum mean stress zones include regional fault intersections, areas of regional uplift or anticlines, zones of competency contrast such as along gravitational margins

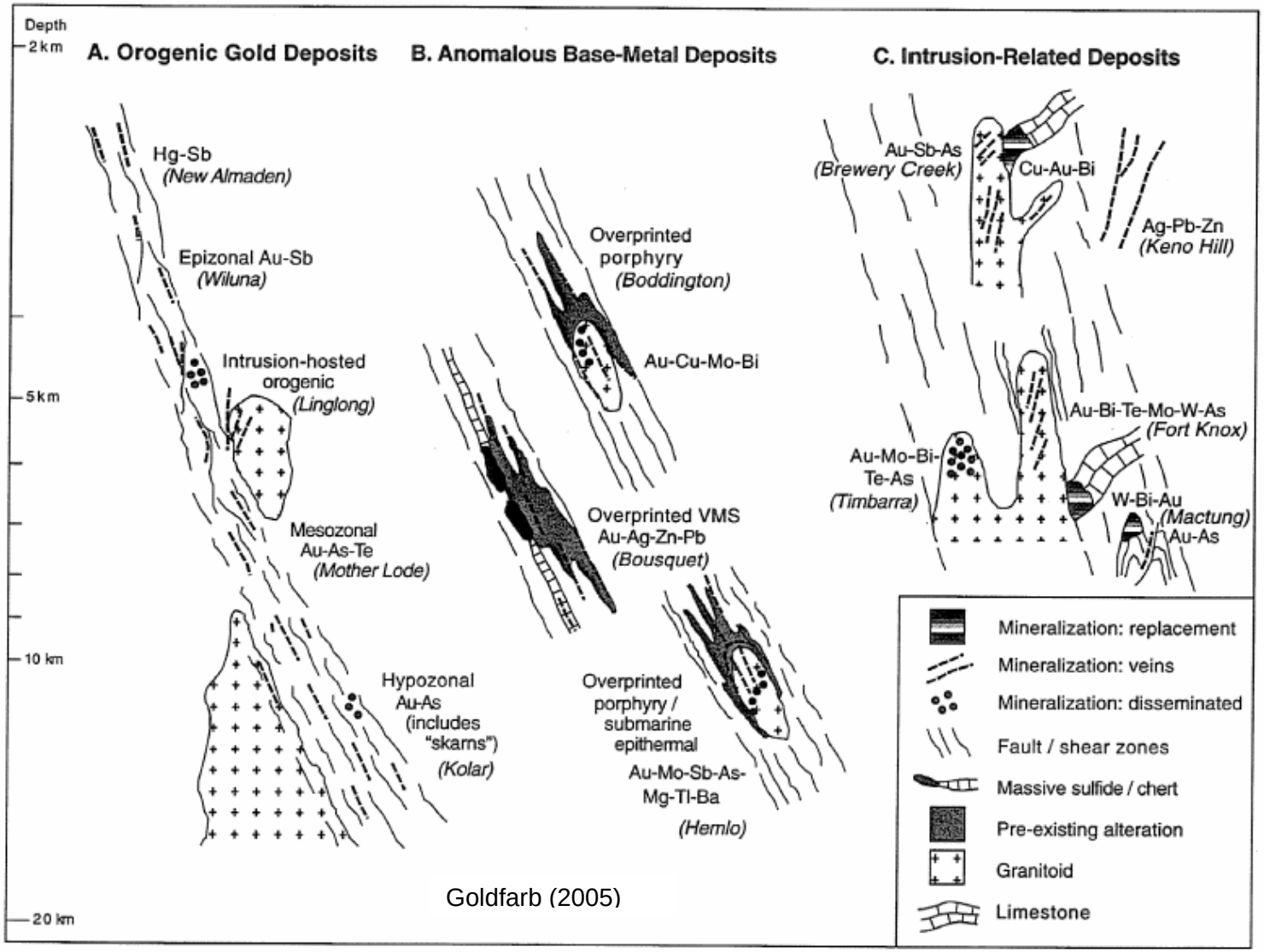

Figure 8.0a. Characteristics of Orogenic gold deposits.

- in compressional regimes, reverse faults have the highest degree of misorientation and the highest levels of fluid overpressure making them susceptible to a high fluid flux and the deposition of auriferous veins. These mineralized splays are several tens of metres long by several metres wide with the second order faults generally parallel to the regional grain whereas the third-order structures are oblique
- mineralized bodies have a variety of geometries and styles, with brittle-ductile and ductile shears being more common ore hosts than extensional quartz carbonate vein systems
- most gold-bearing veins in metamorphic belts occur as fluid-fill shears or fractures
- vein density is greatest near the centres of the shears or fault zones and decreases rapidly away from those structures
- extensional veins and vein arrays are less significant economically but can be important ore hosts in competent host rocks in areas adjacent to fault-fill vein systems
- sheeted veins, stockworks and breccia may also be common in competent rock types

- Rock chemistry
  - units that are characterized by high Fe/Fe+Mg ratios are good traps for epigenetic gold deposits. Rock types include:
    - iron formations
    - iron-rich tholeiites
    - ferruginous shales
    - some felsic igneous rocks
    - previously iron-metasomatized rocks
    - carbonaceous pelitic sequences

- Age
  - in evolving metamorphic belts with characteristic D_1 to D_4 deformation sequence, gold deposits generally form during D_2 to D_4 deformation
  - Ashanti deposits in Ghana are considered to have developed in D_5 strike-slip motion in reactivated D_2 thrusts
  - High-angle reverse faulting (thrusts) correlates with gold deposition
  - Commonly it is broadly constrained from high-angle reverse to strike-slip motion (D_2 to D_3 transition) that is most favourable for voluminous fluid flux and ore genesis
  - Spatially associated with greenschist grade belts within many Precambrian greenstone belts and Phanerozoic orogens
  - Although orogenic gold deposits are hosted by metamorphic rocks and exhibit variable features with different metamorphic grades, ore formation most commonly postdates metamorphism of the immediate host rocks

- Relationship to magmatism
  - Most auriferous Archaean greenstone belts or productive Phanerozoic orogens with gold provinces also have nearby intrusions of similar age
  - Emplacement of batholiths, stocks, sills, dykes is coeval with evolution of many lode gold deposits
  - Most of the intrusions are felsic to intermediate in composition
  - No single melt composition has been identified as consistently associated with orogenetic gold deposits
  - More important association is likelihood that both gold and many melts are controlled by the same high-order structural systems, supported by the common ‘en cornue’ shape of syntectonic plutons

- Although most gold deposits in metamorphic belts are hosted by volcanic and sedimentary rocks, a significant minority of deposits are hosted by, or adjacent to, granitoids
- Under brittle conditions, mineralization is dominated by stockworks and breccias that reflect cataclastic deformation; in igneous rocks (i.e., Fort Knox) or hornfels (i.e., Mt. Todd) sheeted-vein systems may also be characteristic
- Gold orebodies in metamorphic rocks are relatively extensive both along strike and down dip. Single veins, or more commonly groups of veins, are generally continuous for hundreds of metres
- Individual, giant gold deposits may continue along strike for as much as 2 to 5 kilometres

Reduced Intrusion-Related Gold Deposits are deposits where gold veins occur in the roof of a coeval pluton (e.g. Salave, Fort Knox, Timbarra). Characteristics of this deposit type are illustrated herein in Figure 8.0b and as noted by Goldfarb, et al (2005), include:

- Ore formation synchronous with granitoid emplacement
- Intrusions are granodiorite to granitic, subalkaline, and metaluminous to weakly peraluminous
- Magmas have a significant crustal component that likely resulted in their reduced oxidation state – may be critical in gold concentrations in the melts
- Majority of deposits are associated with reduced granitoids that typically have associated tungsten mineralization, however some are more oxidized
- At camp scale they show intrusive-centered metallogenic zonation
- Deposits such as Fort Knox, Dublin Gulch, and Timbarra contain compelling geologic evidence for a magmatic origin with features that represent the magmatic to hydrothermal transition, such as aplites, pegmatites, vein dykes, miarolitic cavities and unidirectional solidification textures
- Deposits typically evolved from early high temperature magmatic-stages to lower temperature hydrothermal veins
- The ore assemblage typically consistently contains gold intergrown with bismuth- and tellurium-bearing phases and locally molybdenum and/or scheelite
- The low sulphide content consists of a reduced mineral assemblage (pyrrhotite, pyrite, loellingite, and arsenopyrite), which is consistent with a source related to reduced magmas
- Most deposits formed at mesozonal depths (4 to 8 kilometres), but epizonal examples are known (e.g., Kidston and Shotgun) and these typically have higher base metal contents

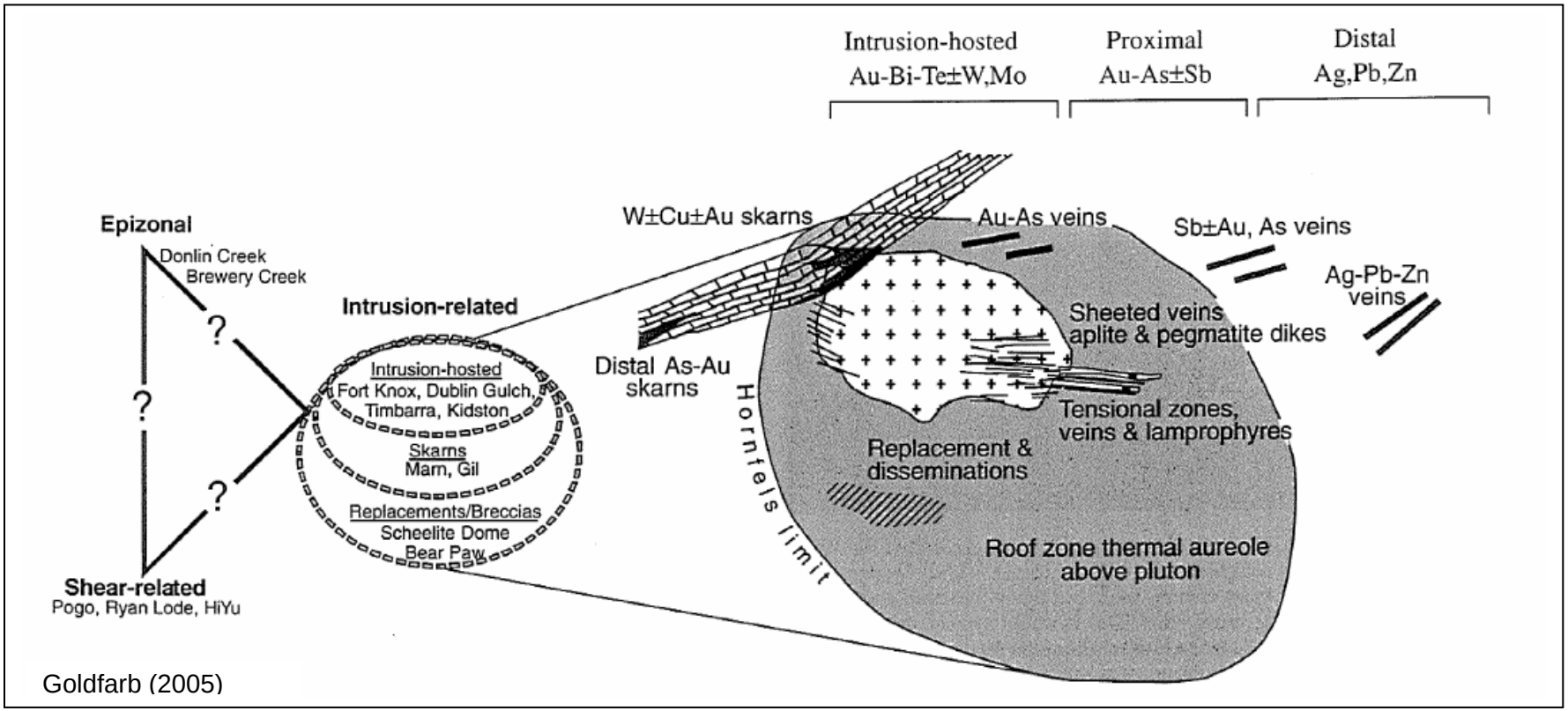

Figure 8.0b. Characteristics of Intrusion-related gold deposits.

9.0 MINERALIZATION

Quartz veins

According to RMCA (2007) prospecting was carried out during 1944 and 1945 in the southern portion of the MGL domain outside of the area covered by the KGL Masters Project Exploration Licences for vein deposits (Lutunguru River / Nyamakumbi River area, Lindi River / Manzia River area; Lenda River / Manguredjipa River area). RMCA (2007) reported that mineralized veins with exploitable reserves are limited to shear zones.

RMCA (2007) noted that trenches and underground adits were dug for evaluation purposes and Vein A in tributaries d1/G4 of the Nyamakumbi River was evaluated at 38,999 tons with grades of 14.64 g/t of amalgamable gold and 20.92 g/t of total gold (i.e., 554.308 to 803.413 kg Au). Gold grades of the host rock schists are generally less than 5 g/t.

A total of 728 metres of drilling carried out in 1952 evaluating veins in tributaries g4/G11 of the Nyamakumbi River and Vein A (*filon A*) failed to return significant gold values. However, given that recoveries were reported to be in the 5 to 10% range it follows that the drilling did not adequately test the gold grades of the veins (RMCA, 2007).

In the area covered by the KGL Masters Project Exploration Licences exploration for primary and eluvial deposits was carried out during the period of 1951 to 1953, on the hills situated between Teturi right hand tributaries, Amalutu left and right hand tributaries and Luengba tributaries (Figure 6.2.2) northwest of Exploration Licence 2634 (RMCA, 2007).

During 1951 prospecting in in-situ rock carried out in the area now covered by the KGL Masters Project Exploration Permits consisted of the following:

- prospecting by pits was carried out on the hill between tributary G2 of the Amalutu River, tributaries d8G5 of the Amalutu River and tributaries d4D13 of the Teturi River. A network of veins 0.2 m to 0.3 m thick with low gold grades (highest 1.9 g/t) was discovered west of the confluence between tributaries G5 and d8G3 of the Amalutu River. Continuation along strike to the southeast was sporadic and gold grades were low (RMCA, 2007). A map illustrating this area is illustrated on Figure 6.2.2 and a map of the prospected pits is presented in Figure 9.0a.

- prospecting by pits between tributaries G1 and G2 of the Amalutu River (RMCA, 2007).

- low gold grades (highest 5 g/t) were found in itabiritic quartzites between tributary D1 and tributary D2 of the Amalutu River (= “Amalutu aval”) and on hills between the Ituri River / Amalutu River / and G1 tributary (RMCA, 2007).

During 1952 exploration activities carried out in the area now covered by the KGL Masters Project Exploration Licences consisted of the following:

- Tributaries D15/D18 of the Amalutu River – tributaries G16/G17 of the Luengba River (Figure 6.6.2); trenching discovered many quartz veins and quartz veinlets with low grades. It is not known if these quartz veins are the source of gold exploited by alluvial mining in the vicinity (RMCA, 2007).

- a network of irregular quartz veins (*stockwork ?*) was discovered between tributary

D11 and tributary D13 on the Bela River, as illustrated on Figure 6.2.2, (this occurrence is situated outside of the KGL Masters Project Exploration Licences). For evaluation purpose, the eluvial deposit, developed by extraction department, had to be excavated (RMCA, 2007).

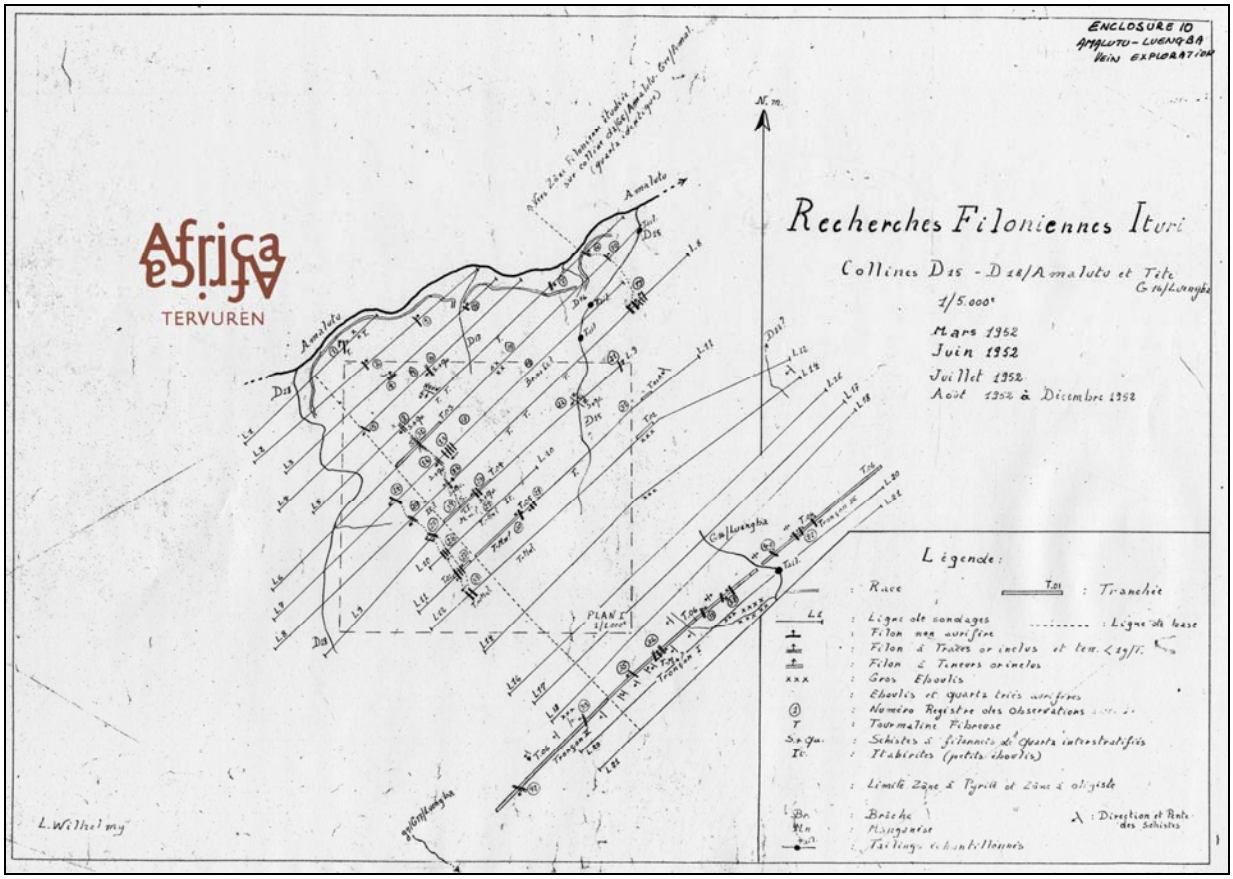

Figure 9.0a. Compilation map of gold occurrence on the hill between tributaries of the Amalutu and Teturi Rivers (RMCA, 2007).

Exploration carried out in 1953 in the area now covered by the KGL Masters Project Exploration Licences consisted of:

- galleries in adits TB1 and TB2 dug 30 metres below trenches 3 and 1 are 90 m and 72m long respectively; low gold grades and no enrichment compared to surface. Adit TB 1 intersected a 6 m wide mineralized section that returned an average grade of 1.20 g/t amalgamable gold or 1.95 g/t total gold; grades less than 1 g/t were returned over the remaining sampled areas of the adit. Adit TB2 only returned a few gold values less than 0.5 g/t. Due to the low gold values, the underground workings in Amalutu aval zone were abandoned (RMCA, 2007).

- prospecting for quartz veins on hills between tributaries D1 and D5 of the Butsha River (Figure 6.2.2) discovered quartz veins narrower than 80 cm with grades occasionally in the range of 1 to 2 g/t amalgamable gold. The trenches are barren with the exception of some gold grades less than 0.8 g/t amalgamable gold between pit lines 10 and 11 East (RMCA, 2007).

The 'Amalutu aval' occurrence was surveyed on a 500 m long and 30 m to 100 m wide area oriented towards N20W. The estimated contained gold in two layers of quartzite are presented in Table 9.0 (RMCA, 2007).

Table 9.0. Estimated gold content in the Amalutu aval occurrence (RMCA, 2007).

	Length	width	Amalg. gold grade (g/t)		total gold grade (g/t)	
	(m)	(m)	Non reduced	Reduced	non reduced	reduced
1	350	4.5	1.72	1.45	2.75	2.40
2	150	2.0	1.70	-	3.00	-

Eluvial deposits and itabirites

According to RMCA (2007) geological survey reports indicate that eluvial resources were often evaluated by the mining staff before exploitation. The Geological survey reports present few details however it was noted that eluvium was exploited on hills between the Amalutu and Luengba Rivers (RMCA, 2007). MGL annual reports do not include exploitation results; possibly they were registered under river names, although this has not been confirmed.

Trenches were dug during 1952 in the itabirite formations located in the northwest portion of KGL Masters Project Exploration Licence 2634. The highest gold grades reported are 4 m averaging 4.30 g/t amalgamable gold or 8.45 g/t total gold and 3 m averaging 0.65 g/t amalgamable gold or 2.40 g/t total gold. In deep pits dug in the trenches, some higher grades encountered are: Pit no. 51 (TR1) grades to 4.70 g/t amalgamable gold or 10.20 g/t total gold and Pit no. 52 (TR4) grades to 4.60 g/t amalgamable gold or 8.60 g/t total gold (RMCA, 2007).

The main itabirite zone is 180m long and has a maximum width of 20 m. Samples collected in the trenches generally carry lower gold values however these may reach 5.8 g/t total gold over 60 m; samples 134 to 143 in trench 9. Itabirites in this zone were not exploited and the average grade is considered to be approximately 1 g/t (RMCA, 2007).

In summary it appears that historically attention was not given to the relationship between the scarce exploitable grades encountered in the itabirites and the local fault system. This relationship was nevertheless clearly established when prospecting the Lutungure itabirite occurrences, possibly suggesting remobilization (?), (RMCA, 2007).

Glacial formations

General prospecting did not identify gold resources in the Lindian L4+T formations present on KGL Masters Project Exploration Licence 2627 (RMCA, 2007). Nevertheless, gold mineralization occurrences are known in tillites in the Biaboy Sector which have been exploited. The tillite formations along Lenda River are reported as barren (RMCA, 2007).

During the period from 1951 to 1952 the river basins were re-prospected for tin, tungsten and niobium and tantalum, commodities not previously explored for; according to RMCA (2007) comments from the literature include the following:

Tin

The reviewed files in the Royal Museum for Central Africa (Tervuren) in Brussels, Belgium do not make reference to any significant tin occurrence in the area of the KGL Masters Project Exploration Licences (RMCA, 2007).

Tungsten

Scheelite is reported to be present in most of the alluvial concentrates collected in the MGL domain however at very low grades and the grain sizes are very small (RMCA, 2007).

In 1948, an exploitable concentration of alluvial scheelite, on pit line 4, on tributary G69 of the Ituri River, upstream of the confluence of the Butsha and Ituri Rivers, produced 175 kg of scheelite (RMCA, 2007). In 1952 a scheelite mineralized quartz vein was discovered in the same place however there is no record of it having been exploited (RMCA, 2007).

RMCA (2007) noted that wolframite deposits in the area of the KGL Masters Project Exploration Licences were not mentioned in the compiled archives.

Niobium and tantalum

Records indicate that prospecting surveys targeting niobium and tantalum deposits commenced in 1951 (RMCA, 2007).

In 1955, an eluvial resource was developed and evaluated on the hill sides of the Mapembe River (RMCA, 2007). This river is outside of the KGL Masters Project Exploration Licences however it provides some indications on the type of ore. Primary lode is probably of pegmatitic origin as it is the case for the Keke deposit on the left hand tributary of the Ituri River, upstream of the confluence with the Etate River, where a pegmatite is known in relation with an alluvial coltan deposit (RMCA, 2007).

The Mapembe deposit produced a total of 75.5 tons of niobium and tantalum concentrates between 1954 and 1958 (RMCA, 2007).

An attempt to exploit the Keke deposit, situated at tributaries d5g5G5 and L10 G5 of the Keke River to the northwest of the KGL Masters Project Exploration Licence 2634 ended in 1955 due to decline in the tantalum rating even though the grade encountered in tributary G5 was 1.59 kg/m^3 (RMCA, 2007).

The composition of the Nb-Ta concentrates collected regionally varies from columbite to tantalite-tapiolite with a density of 7.8 to 8.0 g/cm^3 (RMCA, 2007).

ARTISANAL GOLD MINING

On the KGL Masters Project Exploration Licences two active hard rock artisanal gold mining sites namely the Malaguere and the Golgotha, illustrated on Figure 9.0b were visited by the author. According to the local residents there are other gold occurrences within the area that artisanal miners are exploiting; some of these at least were discovered during the regolith sampling carried out by Bascons consultants, contracted by Kilo in December 2007.

The **Malaguere artisanal gold mine** is situated on or adjacent to the border of KGL Masters project Exploration Licence 2634, approximately two hours by foot from the village of Biakatu on the Beni – Mambassa road as illustrated on Figures 4.2 and 9.0b. The legend for Figure 9.0b is presented in Figure 9.0c. ARC 1950 (Zaire) geodetic coordinates of the Malaguere artisanal gold mine are 29º 17' 55.58" East Longitude and 00º 53' 53.61" North Latitude. UTM WGS 84 coordinates of the Malaguere artisanal gold mine are 755900E and 99075N zone 35N.

According to the artisanal miners currently on site, an outcrop of gold bearing quartz vein, discovered by prospecting in 2002 and illustrated in Figure 9.0d was the beginnings of the Malaguere gold mine; it has been exploited since then.

The gold is hosted in a fractured quartz vein that varies from 1 m to 2 m thick and strikes in an east-west direction at approximately 100º - 280º and dips about 80º to the north northeast, as illustrated in Figure 9.0e. The auriferous quartz vein is hosted in Precambrian Upper Kibalian schistose metasedimentary rocks predominantly composed of quartz and micas. The area has been subjected to tropical weathering, however, as illustrated in Figure 9.0f the regolith profile overlying the Malaguere auriferous quartz vein and the host rocks is approximately one metre thick and appears to be either in situ or very proximal to its origin. Observations of the auriferous quartz vein indicate that following emplacement of the quartz vein it was foliated by a subsequent tectonic event; gold emplacement most probably occurred near the end of this tectonic event. The host metasedimentary rocks have weathered to a bright reddish colour indicative of a high ferruginous content, possibly the result of oxidation of sulphides. It is unknown to the author if the gold is restricted to the auriferous quartz vein, or if the wall rocks are also gold bearing. Also, it is not known if the quartz vein occurs within a fault, foliation plane, or the axial plane of a fold, however, the geological map (Figure 9.0b) indicates the presence of strike parallel structures. Possibly these are thrust faults that developed during the D_2 tectonic event. The Malaguere workings, as illustrated in Figure 9.0g, are up to 20 metres deep and in the order of 200 to 400 metres long. Given the extent of the Malaguere artisanal gold mine workings and the fact that it has been subjected to five years of continuous artisanal exploitation it follows that diamond drilling is warranted to evaluate its economic potential.

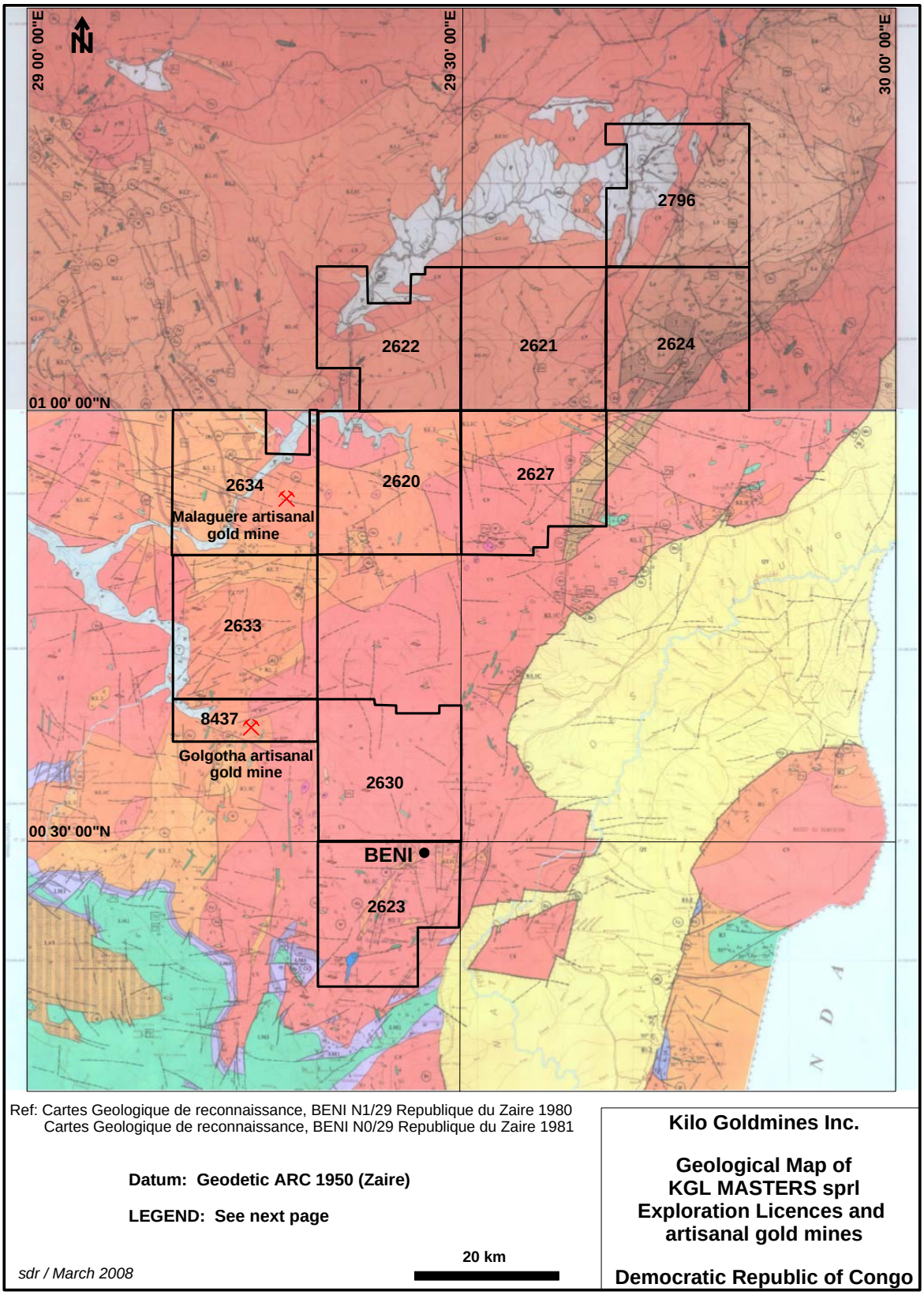

Figure 9.0b. Geological map of the KGL Masters Project Exploration Licences and the location of the Malaguere and Golgotha artisanal gold mines.

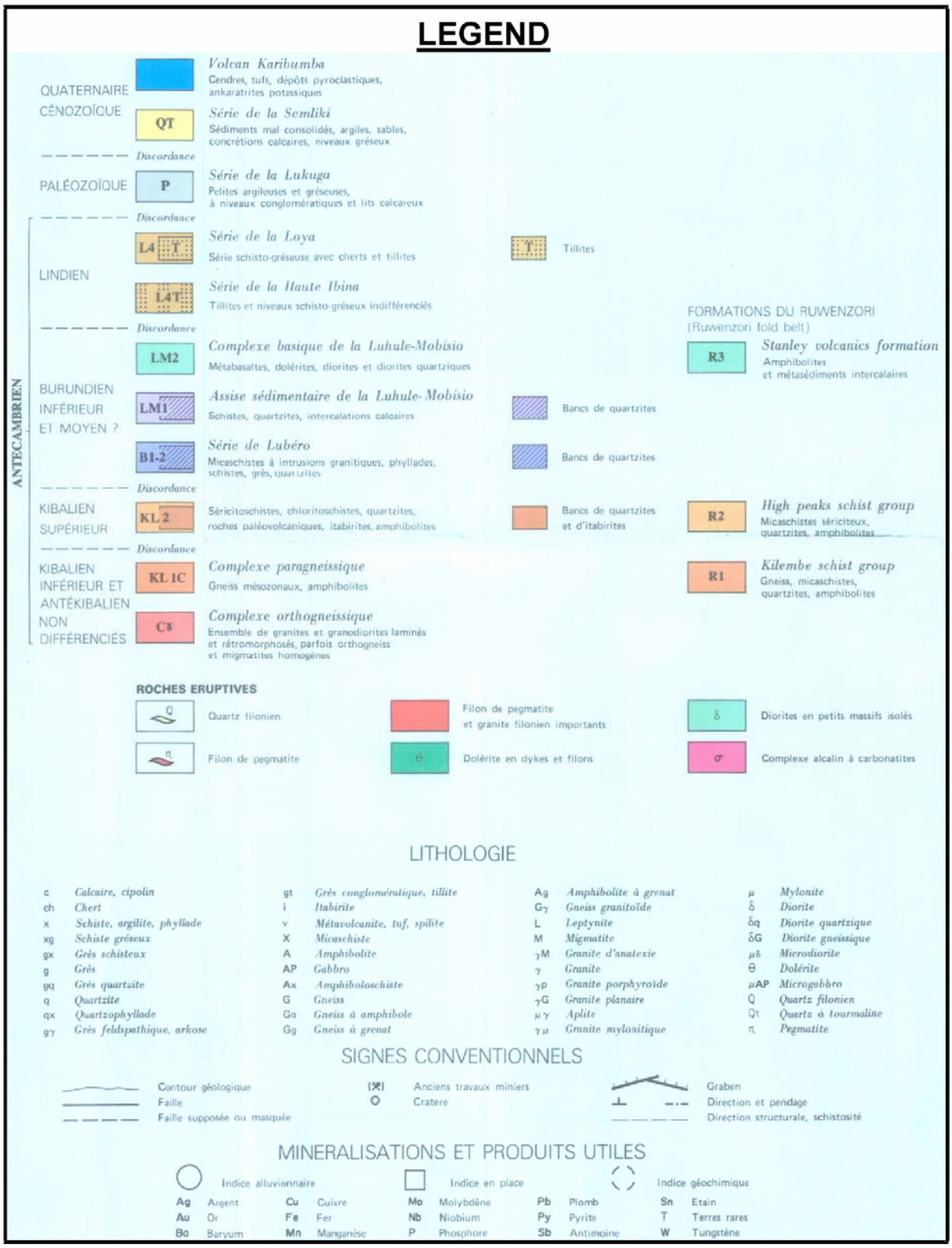

Figure 9.0c. Legend for the geological map illustrated in Figure 9.0b.

Figure 9.0d. Quartz vein outcrop, discovery site of the Malaguere artisanal gold mine.

Figure 9.0e. Photo illustrating excavations on the Malaguere auriferous quartz vein.

Figure 9.0f. Photo illustrating of the Malaguere artisanal gold mine workings and the regolith profile.

Figure 9.0g. Photo of the Malaguere pit looking east along the auriferous quartz vein.

Golgotha Artisanal Gold Mine

The Golgotha artisanal gold mine is situated in the southernmost Exploration Licence of the KGL Masters Project, namely Exploration Licence 8437, approximately 1.5 hours by foot from the village of Bela on the Beni – Mambassa road as illustrated on Figures 4.2 and 9.0b. ARC 1950 (Zaire) geodetic coordinates of the Golgotha artisanal gold mine are 29º 15' 29.60" East Longitude and 00º 37' 59.25" North Latitude. UTM WGS 84 coordinates of the Golgotha artisanal gold mine are 751400E and 69750N zone 35N.

The Golgotha artisanal workings are centered on a small hill, as illustrated on Figure 9.0h, and consists of two known parallel quartz veins about 1 to 2 metres thick separated by about 15 metres of undifferentiated Precambrian Lower Kibalian paragneissic rocks that host numerous thin auriferous quartz veins and veinlets. The quartz veins are being accessed by a number of vertical pits, as illustrated in Figures 9.0i and 9.0j. The parallel quartz veins strike approximately 290º- 110º and dip about 60º towards the north northeast as illustrated in Figure 9.0k. The Golgotha workings have been explored and exploited over a strike length of about 200 metres.

The geological map (Figure 9.0b) indicates that a number of strike parallel faults have been observed or interpreted in the area surrounding the Golgotha artisanal gold mine. Given the extent of the Golgotha gold mine workings, the presence of the multiple parallel auriferous veins coupled with the lack of knowledge on the presence or absence of gold in the host rocks it follows that diamond drilling is warranted to evaluate the economic significance of the workings.

Figure 9.0h. Photo of the Golgotha artisanal gold mine workings.

Figure 9.0i. Photo of a pit and tunnel on the Golgotha artisanal gold mine; note the quartz veins in the pit walls.

Figure 9.0j. Photo illustrating a series of parallel, north dipping, quartz veins in the Golgotha artisanal gold mine.

Figure 9.0k. Photo illustrating two parallel gold bearing quartz veins in the Golgotha artisanal mine site.

The undifferentiated gneisses between the two parallel auriferous quartz veins are approximately fifteen metres thick and host a number of thin gold bearing quartz veins and veinlets as illustrated in Figure 9.0l.

Figure 9.0l. Photo illustrating a thin quartz vein hosted in the gneisses that occur between the two parallel quartz veins exploited by artisanal miners.

The 1:200,000 scale geological map sheet, BENI N0/29, compiled by the Republique du Zaire (1981), indicates that the lithological units in the area of the KGL Masters Project Exploration Licences are oriented north-south to north northwest. Parallel series of faults are shown on the BENI N0/29 map to occur in a north-south, east-west, northwest-southeast and northeast-southwest orientations. The quartz veins being exploited by artisanal miners at Malaguere and Golgotha do not appear to be parallel to the lithological units but rather to structural features.

10.0 EXPLORATION

Kilo has carried out the following work on the KGL Masters Project Exploration Licences.

- Contracted a compilation of historical data on file at Tevuern Museum in Brussels, Belgium.
- Completed the Geological property visit as required by the Mining Code.
- Completed the Mitigation and Rehabilitation Plan pursuant to the Mining Code 2000 and the Mining Regulations 2003.
- Visited the property and Tevuern Museum (Brussels, Belgium) to verify the reports obtained from the consultants.
- Contracted PhotoSat (Vancouver, Canada) to obtain Landsat 7 Ortho Mosaic, Regional Digital Elevation Data and Ikonos satellite photos.
- Completed regolith sampling over about 250 km² of a planned 500 km².

The author of this report recommended that regolith geochemical sampling be carried out on Exploration Licences 8437 and 2634 on the KGL Masters Project property in order to evaluate the areas that host the Malaguere and Golgotha artisanal gold mines. The recommended sampling program suggested 400 m spaced lines oriented WGS 84 UTM north-south with samples collected at 100 m intervals. The recommendations included about 7% quality control comprised of randomly inserted duplicates commercial standards and blanks. Kilo, through its 90% owned subsidiary KGL MASTERS sprl, initiated the recommended regolith sampling program in December 2007 and it was completed in January 2008. Bascons, a Kinshasa DRC consulting firm, was contracted to carry out the program. The recommended quality control procedures were implemented by Kilo and adhered to by Bascons.

Figure 10.0a illustrates the locations of the reolith sampled sites and also shows artisanal sites discovered in the tropical rainforest covered areas during the regolith sampling program. Illustrated in Figure 10.0b is the area where Kilo, through its 90% owned subsidiary KGL MASTERS sprl have contracted Bascons to collect regolith samples on 400 m spaced lines oriented WGS 84 UTM north-south with at 100 m intervals.

Sample preparation will be carried out by ALS Chemex, an internationally recognized analytical company, in Mwanza, Tanzania and analysis for gold by fire assay and major elements by ICP will be carried out by ALS Chemex in Johannesburg, South Africa. The author visited the Bascons crew on site.

Un-audited expenditures totalling $1,720,106.82 (Canadian) incurred by Kilo to date on the KGL Masters Project Exploration Licences, provided to the author by Kilo, are presented herein in Table 10.0a.

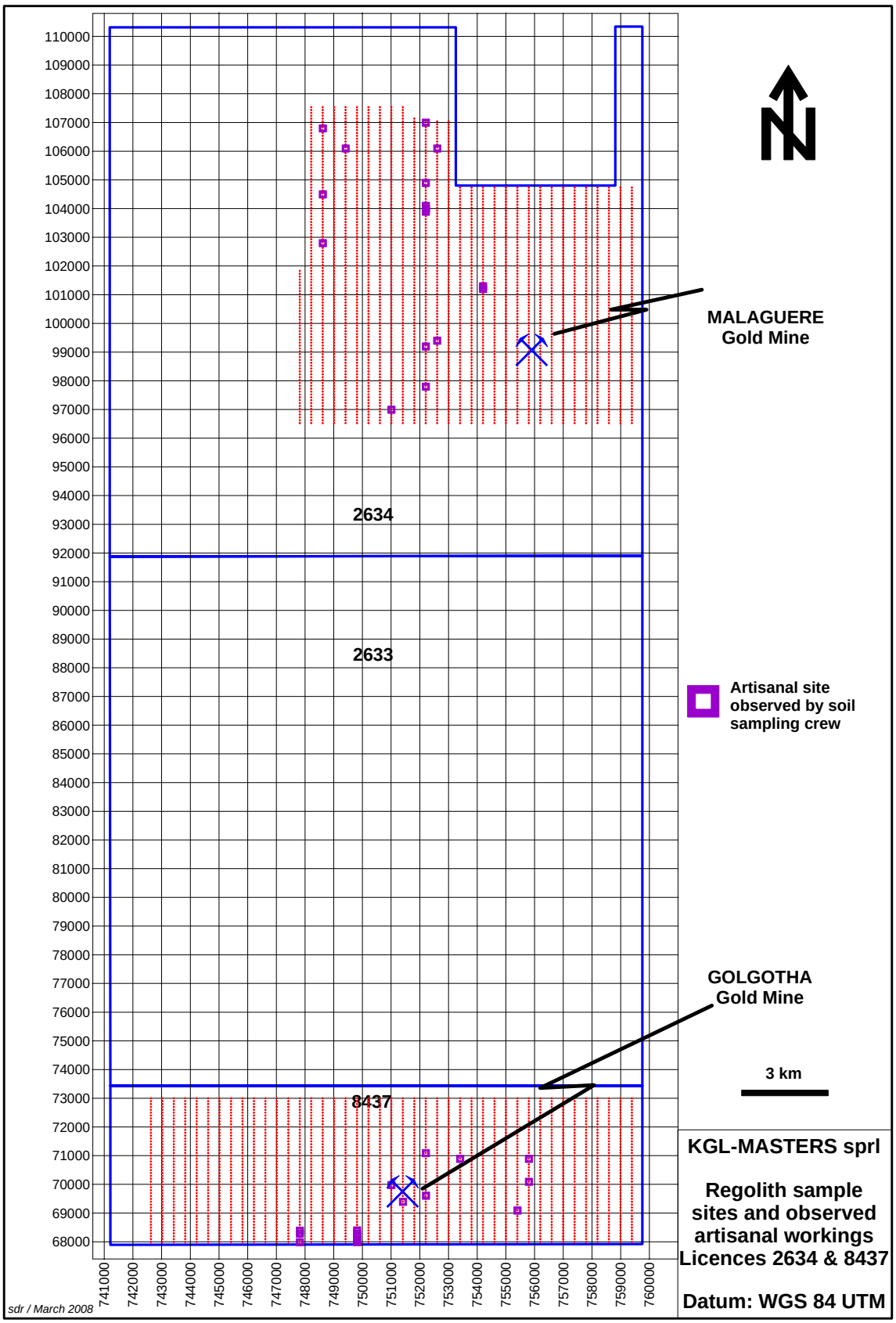

Figure 10.0a. Map illustrating sites regolith sampled and observed artisanal workings.

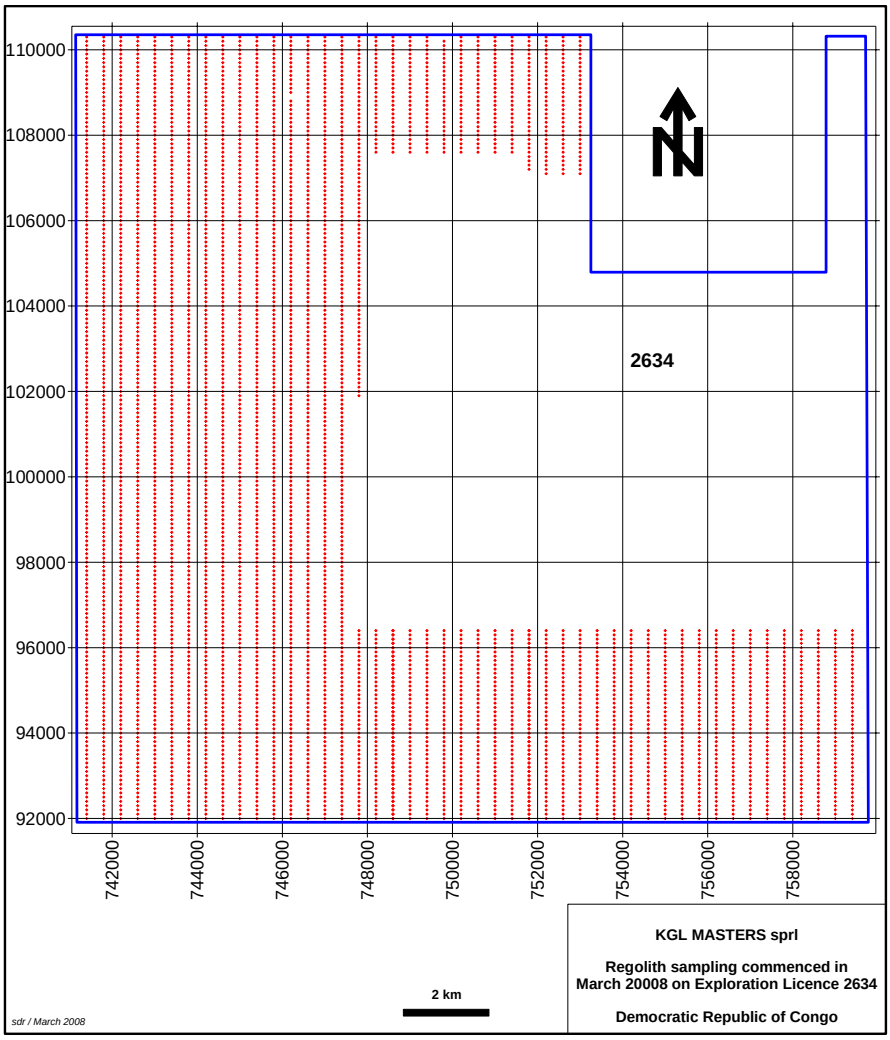

Figure 10.0b. Map illustrating regolith sampling program currently in progress on the KGL Masters Project.

Table 10.0a. Exploration expenditures incurred by Kilo on the KGL Masters Project Exploration Licences.

PROGRAM	Expenditures Canadian $
Property Acquisition	92,709.00
Mitigation and Rehabilitation study	54,150.00
Royal Museum for Central Africa – Archive compilation	24,913.09
Reconnaissance geological study and report	20,300.00
NI43-101 report	99,201.01
Miscellaneous	149,422.80
Legal Fees	16,950.00
Satellite images and photos	58,862.13
Bascons – regolith sampling	99,000.00
General and Administration	1,104,598.79
TOTAL	$1,720,106.82

11.0 DRILLING

Kilo has not carried out any drilling on the KGL Masters Project Exploration Licences.

A total of 728 metres of drilling carried out in 1952 evaluating veins on tributaries g4/G11 of the Nyamakumbi River and Vein A (*filon A*) discussed herein in Section 9.0, failed to return significant gold values, however, given that recoveries were reported to only be in the 5 to 10% range it follows that the drilling did not adequately test the gold grades of the veins (RMCA, 2007).

12.0 SAMPLING METHOD AND APPROACH

12.1 Sampling method, type and area

Kilo completed regolith sampling the portions of Exploration Licences 8734 and 2634 that cover the Malaguere and Golgotha artisanal gold mines that were recommended by the author of this report (Figure 10.0a). Kilo is currently completing regolith sampling on the unsampled portion of Exploration Licence 2634. The samples being collected are approximately 1.5 kilograms each.

12.2 Factors affecting reliability of results

Analytical results have not been received by Kilo from any of the collected regolith samples from Exploration Licences 8734 and 2634. The reliability of the results can be affected by the medium sampled, sample preparation contamination and poorly calibrated analytical equipment.

12.3 Sample quality and biases

Given that the analytical data has not been received only cursory comments can be made regarding the sample quality and biases. A visual review of the procedures in the field indicated that the sample quality was acceptable. The analytical data needs to be obtained in order to comment on any sampling biases.

2.4 Rock types, geologic controls, sampling intervals

According to the BENI geological map the rock types in the area of the regolith are Kibalian metavolcanics and metasedimentary rocks. The geological controls include, but are not limited to lithological changes, topography, structure, depth of weathering and overlying vegetation. The regolith samples are being collected at a depth of approximately 30 cm at 100 m intervals on UTM WGS 84 north-south oriented lines spaced at 400 m intervals.

12.5 Summary of relevant samples, values and estimated true widths

Kilo had not received any analytical data as of the date of this report; hence no comments can be made on relevant samples, values or estimated true widths.

13.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY

13.1 Was sample preparation conducted by an employee, officer, director or associate of the issuer?

According to Kilo, no Kilo employee, officer, director or associate of the issuer carried out any sample preparation of the regolith samples on the KGL Masters Project Exploration Licences.

13.2 Sample preparation, analysis and laboratory procedures

According to Kilo the intended sample preparation, analysis and laboratory procedures are as follows:

- crush entire sample to less than 1 millimetre.
- pulverize at least a 1 kg split of the crushed material.
- fire assay for gold using a 30 gm aliquot and instrumental (AA) finish. Laboratory to report first assay as Au1 and any duplicates done as part of the routine internal quality assurance program as AuR. If additional duplicates of the same pulp are reported, these should be reported as AuR2.
- Low level ICP analysis for 34 elements (other than gold) on each sample.

13.3 Quality control measures employed

The Kilo regolith sampling program includes approximately 7% quality control samples. In every batch of 200 samples 4 commercial blanks, 4 commercial standards and 7 duplicate samples were being inserted at random intervals.

13.4 Adequacy of sampling, sample preparation, security and analysis

The author is of the opinion that the density of sampling is adequate for the initial geochemical coverage of the areas being sampled. The sample preparation, security and analysis that Kilo intends to follow are considered adequate by the author. ALS Chemex is an internationally recognized analytical company.

14.0 DATA VERIFICATION

14.1 Quality control measures and data verification procedures applied

The author has not verified any of the historical data. The author has reviewed the regolith sampling method in the field. Kilo has implemented a rigorous quality control system in order to verify the analytical procedures and results.

14.2 Data verification or reliance by author

The author visited the property during the periods of September 26th to 30th, 2006, May 30th to June 3rd, 2007, August 27th to August 30th, 2007, December 10th to December 15th, 2007 and

February 16th to February 22nd, 2008 during which time field visits were carried out and the report on geology and mineralization by Tshinyama, et al., (2007) was verified.

14.3 Nature of any limitations on verification

Data verification was limited to Sections 14.1 and 14.2 hereof.

14.4 Reasons for any failure to verify the data

Verifying the historical data was not carried out due to constraints on time, logistics and the costs involved. Moreover, the historical data is predominantly quantitative rather than qualitative and represents a period in time in excess of fifty years ago. Furthermore, exploitation of gold since the last recorded resources were made most likely has taken place, and records are not available, making the historical records impossible to validate. Validation is further complicated with name changes of topographical features and villages.

Kilo has not received any analytical data for the regolith sampling program that was initiated in late 2007.

15.0 ADJACENT PROPERTIES

15.1 Publicly available information and source

The author has no knowledge of any publicly available information on mineralization on properties adjacent to the KGL Masters Project Exploration Licences. There are no producing mines in the vicinity. The author visited the Tindika artisanal site situated approximately twenty five kilometres to the west northwest of KGL Masters Project Exploration Licence 2634.

The Tindika artisanal workings, illustrated on Figure 15.1a, predominantly consist of a quartz vein striking about 290º - 100º and dipping steeply to the north. The artisanal miners stated that the quartz vein has been traced along strike for approximately 500 metres, and other auriferous quartz veins parallel to the Tindika quartz vein are present within the immediate vicinity. Gold observed in samples of the quartz vein varies from fine to coarse grained.

The auriferous Tindika quartz vein is hosted in the Precambrian Lower Kibalian paragneissic sequence. It is unknown if the host rocks are gold bearing. The overlying regolith where observed in the workings is generally less than a metre thick, as illustrated in Figure 15.1b, and appears to represent the tropically weathered underlying rock (saprock and saprolite), that must be supported as illustrated in Figure 15.1c when accessing the quartz vein underground. The area is devoid of outcrop.

Figure 15.1a. Photo of the Tindika artisanal site illustrating the auriferous quartz vein that is being exploited.

Figure 15.1b. Photo illustrating the thin regolith horizon overlying the Tindika artisanal site.

Figure 15.1c. Photo illustrating the support used by the artisanal miners to hold the walls of the main shaft from collapsing.

Illustrated in Figure 15.1d is gold in panned concentrates from the Tindika workings. Note how coarse grained the majority of the gold is. The gold is interpreted to have been emplaced in the quartz vine at the end of a tectonic event that postdates the age of emplacement of the quartz vein.

Figure 15.1d. A photo of gold panned from crushed samples mined at Tindika.

The geological setting of the KGL Masters Project Exploration Licences is analogous to gold exploration / development projects elsewhere in the Archaean Kabalian Kilo - Moto terrains of northeastern DRC illustrated on Figure 7.1b. Gold deposits and former producers are illustrated on Figure 15.1e. Within an area extending approximately 250 km from the KGL Masters Project Exploration Licences the two most advanced projects are the Moto Goldmines Limited 'Moto project' and the Anglogold Ashanti 'Kilo' project.

The **Moto project** of Moto Goldmines Limited, illustrated in Figures 7.1b and 15.1f, covers a major portion of the Archaean Moto greenstone belt, which consists of the Lower Kibalian System rocks. The Archaean West Nile Gneiss complex flanks the Moto greenstone belt on the north side and the Upper Zaire (younger) granitic complex lies on the south side.

Three gold deposits in the Moto greenstone belt, namely the Gorumbwa, Agbarabo and Durba were exploited primarily in the 1950s and 1960s by the Belgians; they produced more than 60% of the +3 million ounces of recorded gold production in the Moto area. Placer, alluvial and small oxide-zone workings constitute the remainder of the gold production in the area. An area 7 km by 5 km near the towns of Doko and Durba hosts many of the past-producing high-grade gold mines in the Moto greenstone belt.

A limited amount of mining, after the departure of the Belgians in the 1960s, was carried out by OKIMO, the State owned mining company, and during 1996 and 1998 Barrick Gold Corp and Anglogold completed limited exploration.

Moto has defined a world class gold resource since February 2004 by identifying a number of unexploited deposits, in particular the recognition of the Kibali – Durba – Chauffeur - Karagba gold mineralized corridor and the Pakaka - Mengu Hill mineralized corridor which at present contains an estimated combined total indicated resource of 65.49 million tonnes at 2.9 g/t Au for 6.163 million ounces of gold and inferred resource of 97.22 million tonnes at 4 g/t Au for 12.365 million ounces of gold. This project is at the feasibility stage. www.motogoldmines.com, (September 20, 2007).

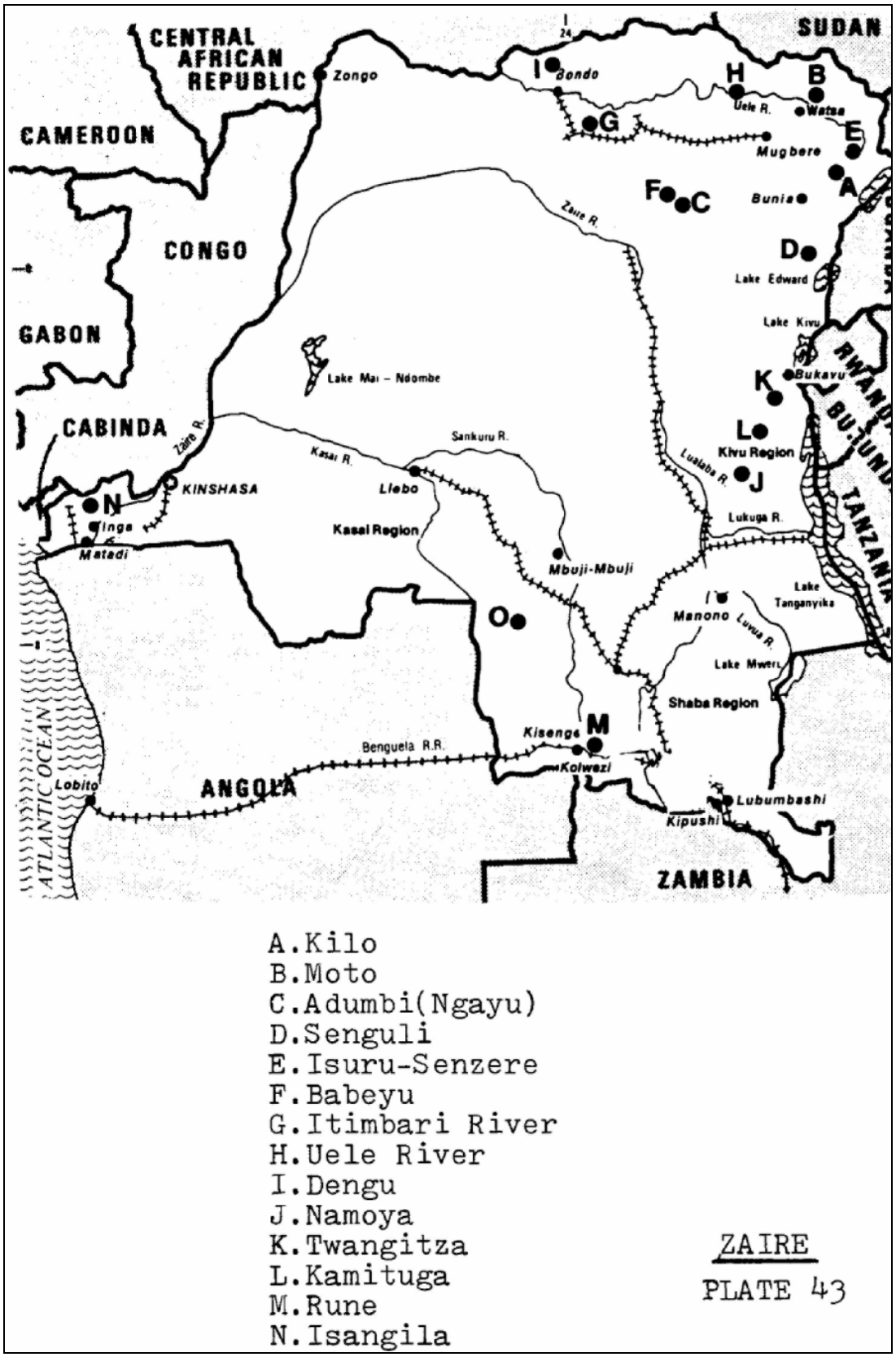

Figure 15.1e. Map illustrating gold occurrences and former gold producers in the DRC, (Elevatorski, 1995).

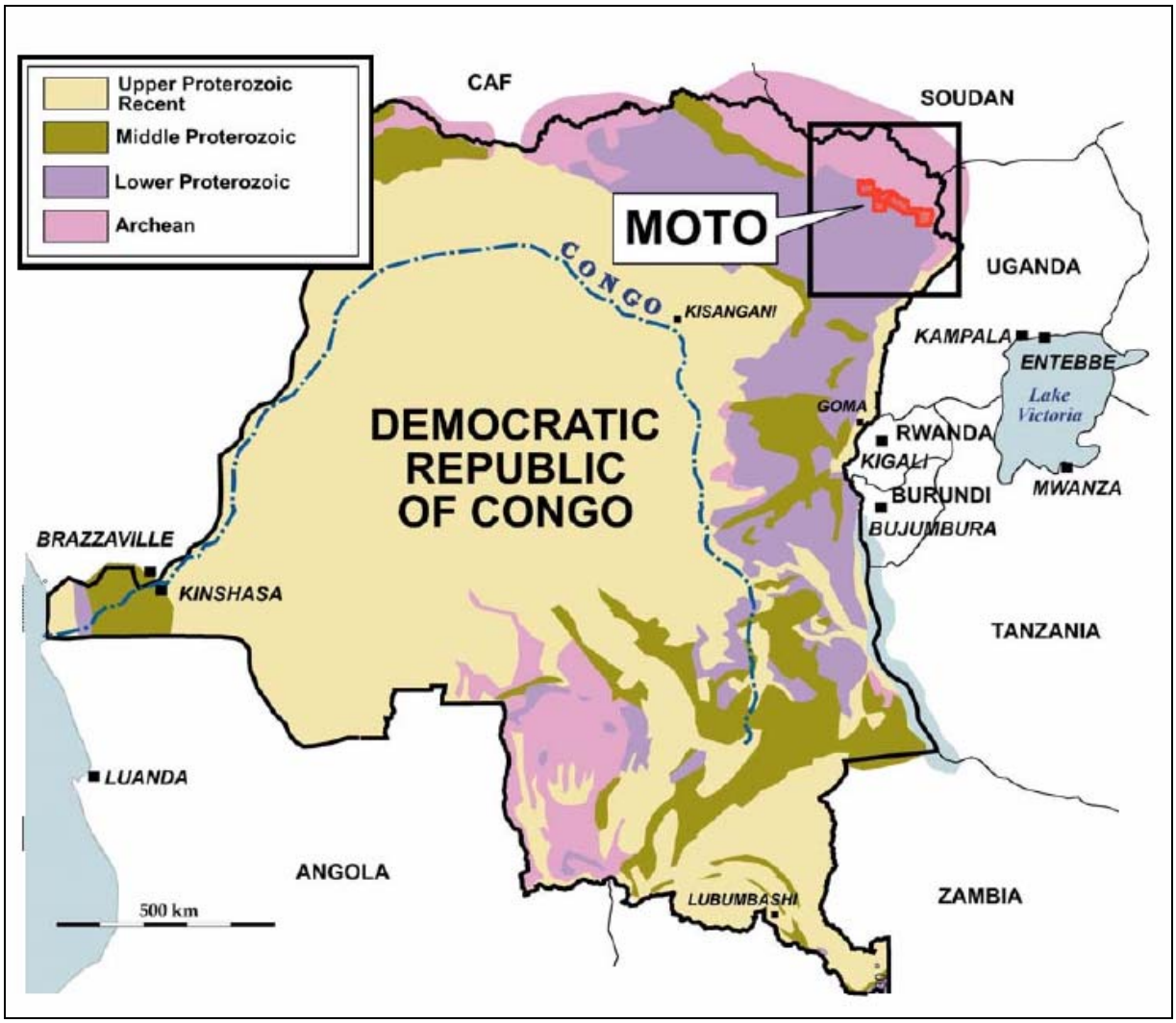

Figure 15.1f. Map illustrating the geology and location of the Moto Goldmines project.

The **Kilo project** of Anglogold Ashanti, illustrated on Figure 7.1b, is focused on delineating a 3 million-ounce gold inferred resource in shallow-dipping mineralized mylonite at the contact between granodiorite intrusive and volcano-sedimentary rocks of the Kilo greenstone belt. The exploration is being carried out on a 10 km x 15 km block surrounding the town of Mongbwalu in the north-eastern part of the DRC. www.anglogoldashanti.com, (September 20, 2007).

15.2 Verification of adjacent property data

The author visited the Tindika workings in May 2007. The author has not visited either the Moto gold or Kilo projects, nor made any attempt to verify the publicly available literature.

15.3 Relationship between adjacent property and property being reported on

The lithogical and structural characteristics on the KGL Masters Project Exploration Licences is similar to that of the Tindika gold occurrence twenty five kilometres to the west. Hence even though the geological characteristics of the KGL Masters Project Exploration Licences is similar to the characteristics observed at the Malaguere, Golgotha and Tindika artisanal workings it does not follow that similar gold bearing deposits are hosted on the KGL Masters Project Exploration Licences.

16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

Not applicable.

17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

There are no historical resources or reserve estimates, or more recent estimates made by or on behalf of Kilo that conform to the CIM guidelines of August 20, 2000. The author has not made any estimates of mineral resources on the property covered by the KGL Masters Project Exploration Licences.

18.0 OTHER RELEVANT DATA AND INFORMATION

Not applicable

19.0 INTERPRETATION AND CONCLUSIONS

The KGL Masters Project Exploration Licences are located within an area from which alluvial gold was exploited more than fifty years ago at a time when exploration for in-situ gold mineralization was not being explored for. Elevatorski (1995) has noted that some of the known gold occurrences within the Archaean Kabalian Kilo – Moto area have been discovered in areas where alluvial gold was first exploited. Such areas include Kilo, Moto, Adumbi, and Isuru-Senzere (Figure 15.1e).

The known in-situ gold occurrences on the KGL Masters Project Exploration Licences namely the Golgotha and Malaguere occur on or in very close proximity to approximately east-west oriented structures, as illustrated on Figure 9.0b. Also illustrated on Figure 9.0b are numerous east-west oriented structures, which are by analogy, prime exploration targets.

It is concluded that the KGL Masters Project Exploration Licences have geological characteristics commonly associated with gold mineralization, the area covered by the Exploration Licences is known to host in-situ gold mineralization and alluvial gold, the area has been prospected but has never been explored with modern techniques. Hence, the KGL Masters Project Exploration Licences are considered to have the potential to host one or more economic gold deposit.

20.0 RECOMMENDATIONS

20.1 Introduction

As required by NI 43-101 F1, the author states that *the character of the property is of sufficient merit to justify the following recommended exploration program.* The main objective of this programme is to discover one or more gold zones of sufficient continuity and grade that warrant further exploration to initially outline a measured resource and subsequently convert the resource into probable and proven reserves. At present no such target area has been defined on the KGL Masters Project property. To achieve the objectives a US$11.5 million two-phase program of exploration over a 24 month period is recommended.

The majority of the KGL Masters Project Exploration Licences 8437, 2633, 2634, 2620, 2621 and 2622 are underlain by a sequence of schists, derived in part at least from greenstones, and re-worked through sedimentary processes. These schists are flanked on the east and west by granitic rocks. Gold mineralization hosted in quartz veins is known to occur within these schists. A multifaceted **Phase I** exploration programme consisting of mapping, soil and stream geochemical sampling, airborne magnetic and radiometric as well as diamond drilling is recommended.

20.2 PHASE I Recommended Exploration Programme

Geophysics: A 6,500 line kilometre Phase I airborne magnetic and radiometric survey is recommended to be carried out over the south-western portion of the gold bearing schistose unit as illustrated on Figure 20.2a. The survey is planned to be carried out by rotary wing aircraft, on 100 m spaced flight lines oriented at 025º - 205º. Kilo is in the process of contracting this to a geophysical survey company. Ground Induced Polarization (IP) surveys are recommended to follow-up gold in regolith anomalies.

Regolith Geochemistry: The westernmost portion of the KGL Masters Project property is predominantly typified by a gentle undulating topography covered in a mature rainforest. The forest floor is composed of an organic layer overlying a lateritic horizon that lies on the weathered in-situ rocks. A well defined ‘stone-line’ of generally angular quartz fragments was noted to occur near the contact with underlying in-situ rocks. Where observed the organic / laterite profile was only several metres thick. The regolith profile is not considered to be comprised of long distance transported material but rather relatively locally derived weathered bedrock. Locally, some down-slope movement is expected to have occurred. Therefore is recommended that regolith samples be collected at a depth of 30 cm at 100 m intervals on north-south lines spaced 400 m apart. At each sample site a representative sample of all material found at the 30 cm depth should be collected. It is recommended that the entire sample be pulverized and an approximate 150 g pulp be sent for analysis. All of the geochemical samples should be analyzed by low-level detection methods for gold. Given that the sample site location can be identified by a hand held Global Positioning System device (“GPS”) it follows that a cut and chained grid will not be required. However, due to the thickness of the undergrowth, line cutting concurrent with the geochemical sampling will be essential. It is estimated that approximately 25,000 samples, plus approximately 7% quality control samples, will need to be collected from the area outlined on Figure 20.2b to achieve a sample density of 400 m x 100 m. In addition a contingency for 2,000 samples of infill sampling is recommended for the areas sampled to date in order to follow-up and delineate potential gold anomalies with greater precision. Quality control samples consisting of

duplicates, as well as commercial standards and blanks, must be inserted randomly with each batch of samples submitted to the laboratory for sample preparation and analysis.

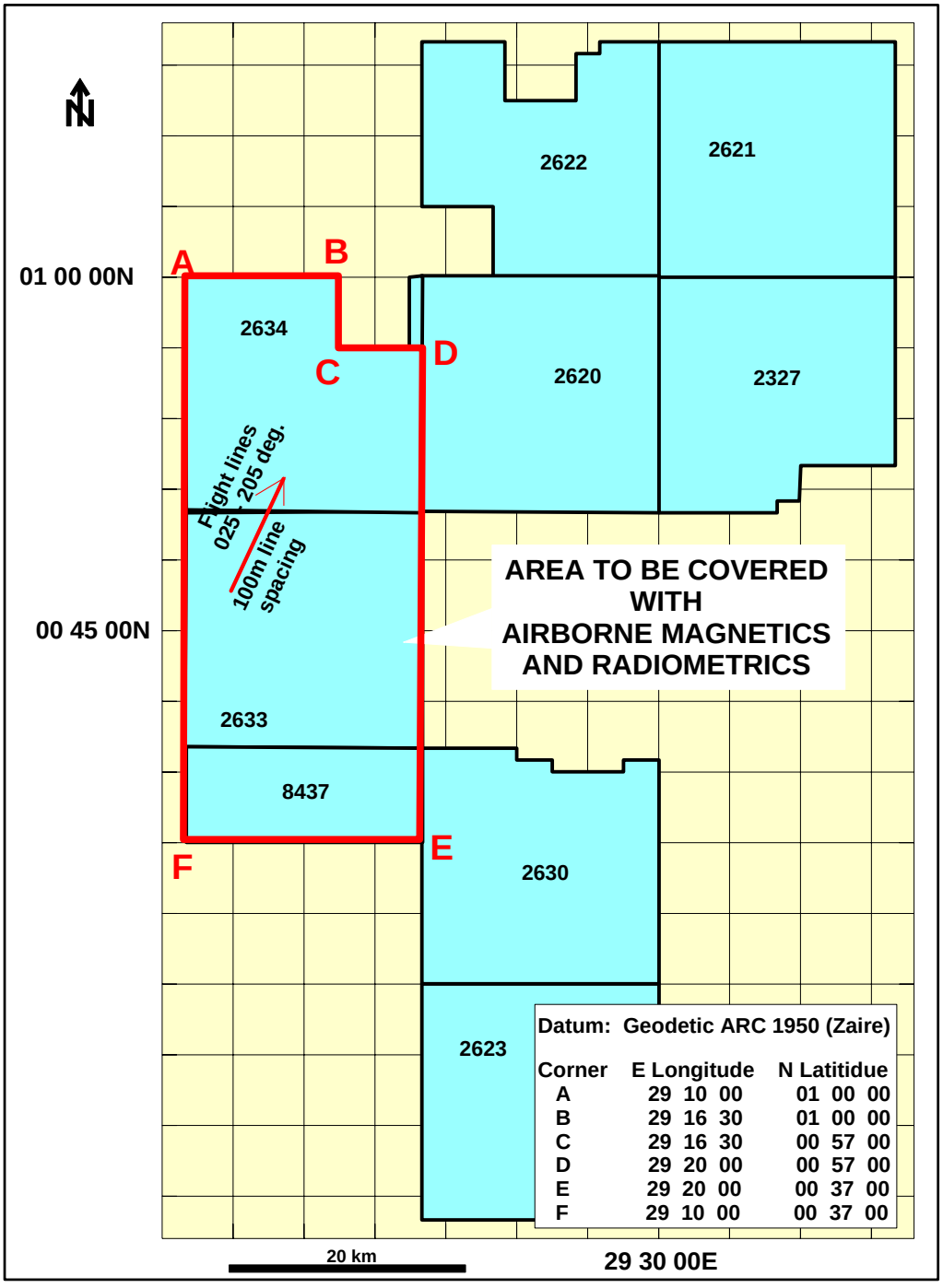

Figure 20.2a. Map illustrating the recommended area to be covered by an airborne magnetic and radiometric survey.

Illustrated on Figure 20.2b are the areas that Kilo have collected as well as are in the process of collecting regolith samples. Also illustrated on Figure 20.2b are the areas recommended for Phase I regolith sampling. The recommended areas to be explored overly lithologies and geological characteristics that have the potential to host significant gold mineralization.

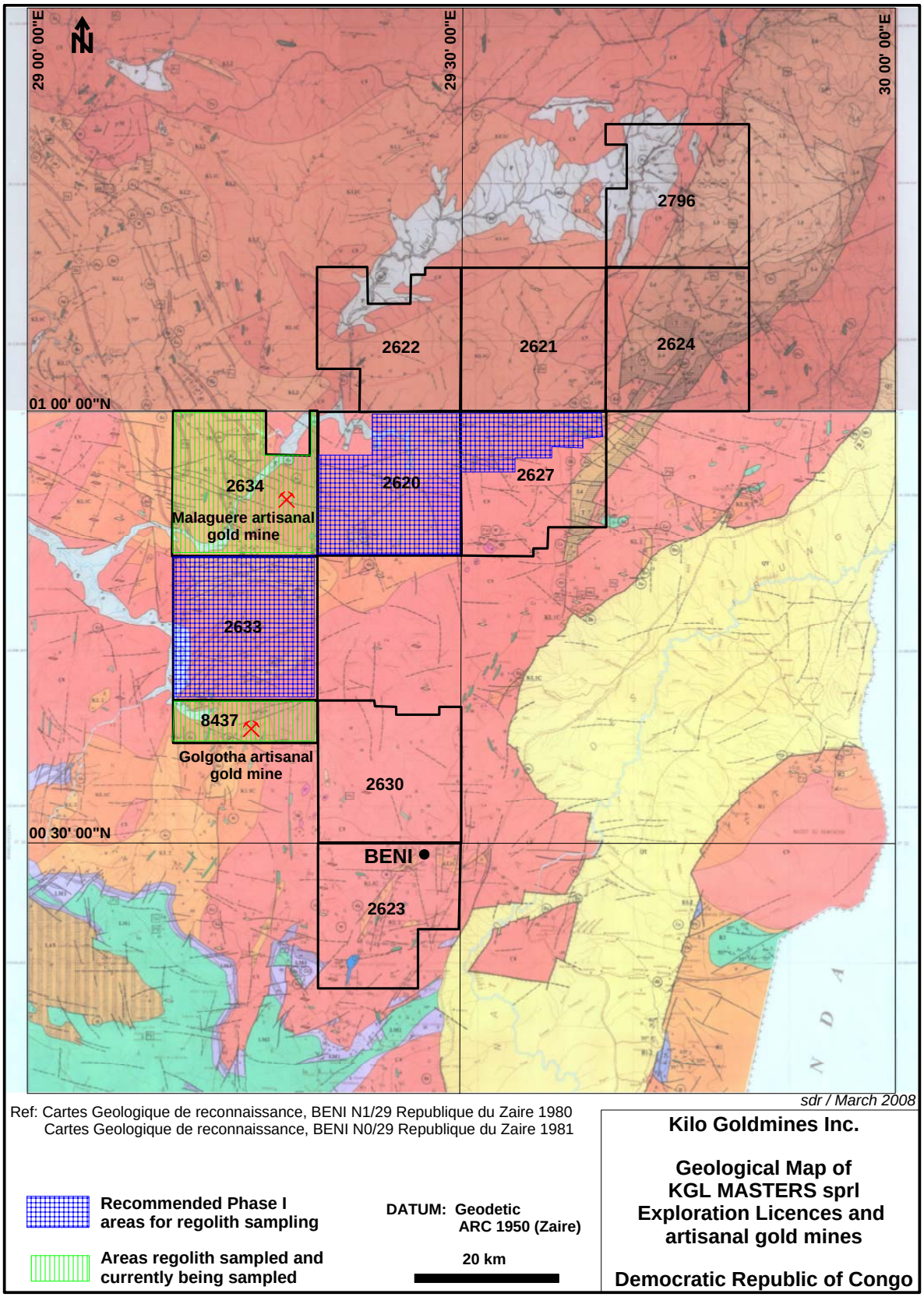

Figure 20.2b. Map illustrating areas regolith sampled and areas recommended for Phase I regolith sampling.

Stream Geochemistry: During the course of the regolith geochemical sampling program it is recommended that a stream sediment sample be collected from every stream crossed by the regolith sampling program. Stream sediment samples should be sieved to 2 mm (+10 Tyler mesh). Quality control measures similar to those for the regolith geochemical samples are recommended. It is estimated that approximately 3,000 stream sediment samples will need to be collected from the same area as the regolith samples.

Geological Mapping: It is recommended that geological mapping be carried out simultaneously with the regolith and stream sampling. All outcrop and float observed in the areas being regolith / stream sediment sampled as well as rock chips in the geochemistry sample sites should be recorded. In addition, any outcrop exhibiting geological characteristics consistent with gold mineralization should be grab-sampled and submitted for analysis.

Diamond Drilling: Given the extent of workings, and significance of the exposed auriferous gold veins it follows that diamond drilling is warranted on the Golgotha artisanal gold mine and the Malaguere artisanal gold mine.

The recommended diamond drilling on the Golgotha artisanal gold mine targets the two known parallel auriferous gold veins and the intervening approximate fifteen metres of undifferentiated gneisses that host thin gold bearing quartz veins and veinlets as well as the wall rocks to the north and south of the quartz veins. Listed in Table 20.2a are the recommended Phase I drill holes and Figure 20.2c illustrates the drill holes and the gold bearing quartz veins. The datum is UTM WGS84.

Table 20.2a. Recommended Phase I diamond drill holes on the Golgotha artisanal gold mine.

UTM E	UTM N	UTM Azimuth	Dip	Length (M)
751175	69917	200º	-50º	110
751271	69878	200º	-50º	110
751368	69843	200º	-50º	110
751414	69824	200º	-50º	110
751463	69808	200º	-50º	110
751511	69790	200º	-50º	110
751559	69775	200º	-50º	110
751654	69741	200º	-50º	110
751753	69707	200º	-50º	110
751440	69894	200º	-50º	180
751536	69860	200º	-50º	180
			Total	**1,350**

The recommended diamond drilling on the Malaguere artisanal gold mine targets the auriferous gold vein and the hosting rocks. Listed in Table 20.2b are the recommended Phase I drill holes and Figure 20.2d illustrates the drill holes and the gold bearing quartz vein and targeted zone. The datum is UTM WGS84.

A total of 2,860 metres plus a contingency of 140 metres of diamond drilling is recommended to evaluate the gold potential of the Golgotha and Malaguere artisanal gold mines.

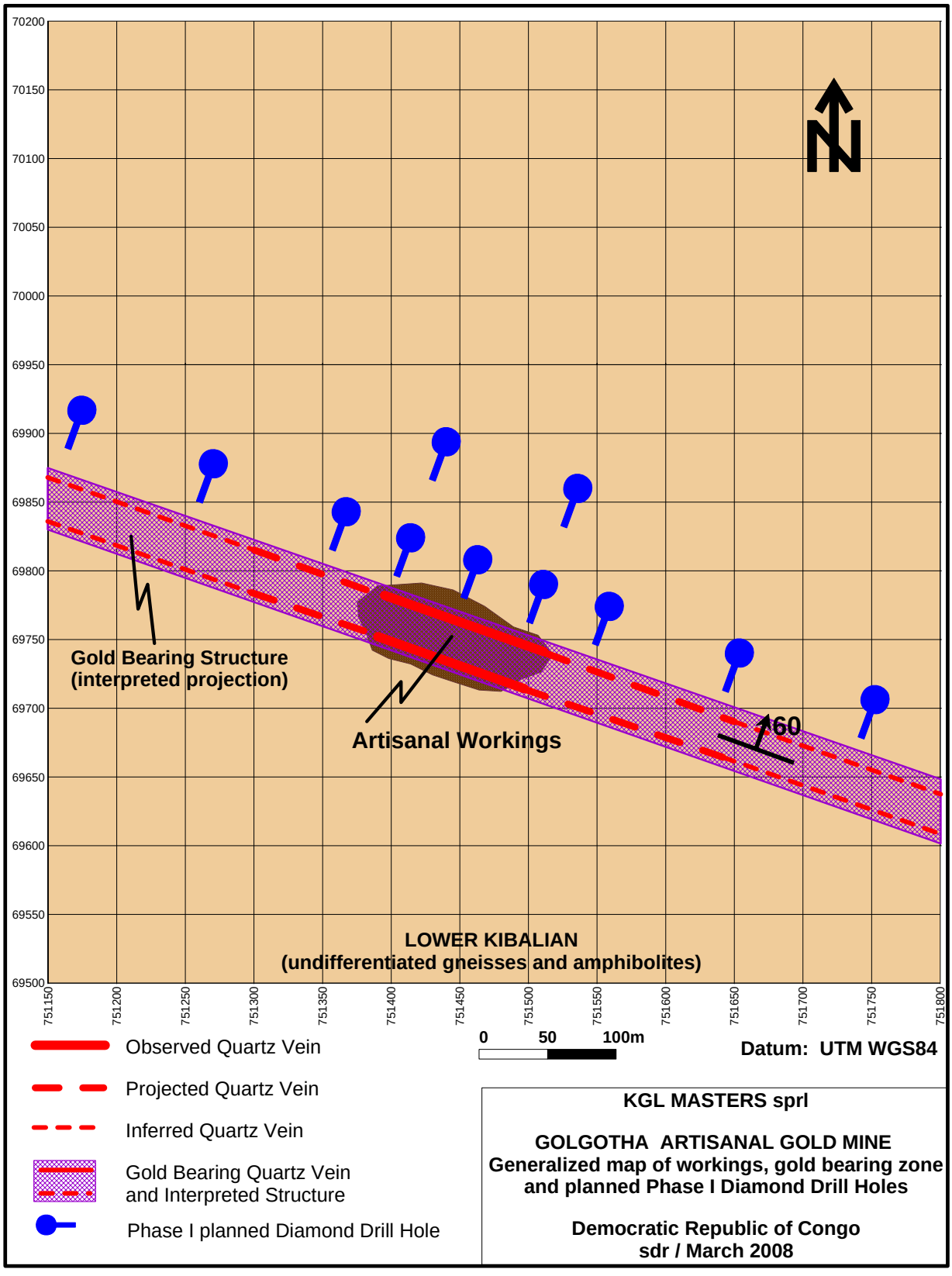

Figure 20.2c. Map illustrating the Golgotha artisanal gold mine workings, and projected gold bearing quartz veins and recommended Phase I diamond drill holes.

Table 20.2b. Recommended Phase I diamond drill holes on the Malaguere artisanal gold mine.

UTM E	UTM N	UTM Azimuth	Dip	Length (M)
755594	99171	188º	-50º	100
755696	99157	188º	-50º	100
755797	99143	188º	-50º	100
755848	99138	188º	-50º	100
755900	99132	188º	-50º	100
755949	99127	188º	-50º	100
755998	99120	188º	-50º	100
756048	99114	188º	-50º	100
756146	99102	188º	-50º	100
756245	99089	188º	-50º	100
755855	99188	188º	-50º	170
755956	99175	188º	-50º	170
756055	99163	188º	-50º	170
			Total	**1,510**

Laboratory: Given the lack of any laboratory in the KGL Masters Project area of the DRC it is essential that an internationally recognized laboratory be contracted to provide, manage and maintain a sample preparation facility at or near the area being explored. Three separate pulps will be required from each sample; one must be submitted to the district mines office, one retained by KGL Masters and the third sample submitted for analysis in either Tanzania (Mwanza) or South Africa (Johannesburg).

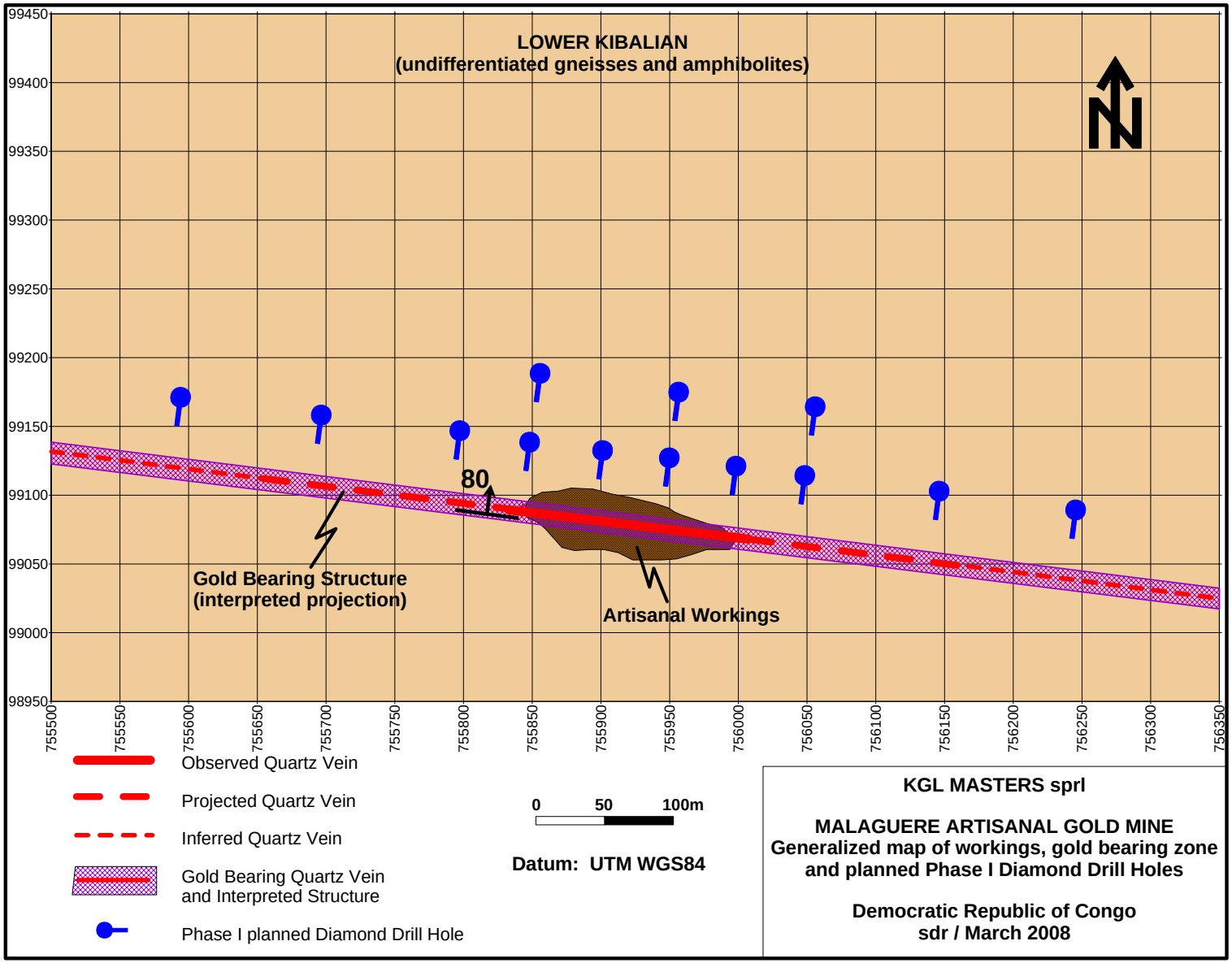

Figure 20.2d. Map illustrating the Malaguere artisanal gold mine workings, and projected gold bearing quartz veins and recommended Phase I diamond drill holes.

20.3 PHASE II Recommended Exploration Programme

Geophysics: Approximately 9,500 line kilometres of airborne magnetic and radiometric are recommended to cover the northern portion of the KGL Masters Project area as illustrated in Figure 20.3a. This area has similar geological characteristics as in the areas of the Golgotha and Malaguere artisanal gold mines. Ground Induced Polarization (IP) and magnetic surveys are recommended to follow-up anomalous gold in regolith samples and to assist in defining geological structures.

Regolith Sampling: It is estimated that approximately 25,000 samples, plus approximately 7% quality control samples, will need to be collected from the recommended area outlined on Figure 20.3a to achieve a sample density of 400 m x 100 m. In addition a contingency for 5,000 samples of infill sampling is recommended for the areas sampled prior to and during Phase I in order to follow-up and delineate potential gold anomalies with greater precision. Quality control samples consisting of duplicates, as well as commercial standards and blanks, must be inserted randomly with each batch of samples submitted to the laboratory for sample preparation and analysis.

Diamond Drilling: A total of 25,000 metres of diamond drilling is recommended to be carried out during the Phase II exploration programme. In the event that the Phase I diamond drilling is successful on the Golgotha and Malaguere artisanal gold mines the Phase II recommended diamond drilling is 8,400 metres. The remaining 16,600 metres is expected to target gold anomalies anticipated to be defined by regolith sampling and geological mapping. Listed in Table 20.3a are the recommended Phase II diamond drill holes on the Golgotha artisanal gold mine and Figure 20.3b illustrates the Phase II drill holes and the gold bearing quartz veins. The datum is UTM WGS84.

Table 20.3a. Recommended Phase II diamond drill holes on the Golgotha artisanal gold mine.

UTM E	UTM N	UTM Azimuth	Dip	Length (M)
751248	69967	200º	-50º	180
751344	69929	200º	-50º	180
751630	69824	200º	-50º	180
751727	69791	200º	-50º	180
751320	70014	200º	-50º	250
751417	69978	200º	-50º	250
751514	69943	200º	-50º	250
751609	69910	200º	-50º	250
751703	69874	200º	-50º	250
751297	70099	200º	-50º	320
751490	70027	200º	-50º	320
751586	69991	200º	-50º	320
751775	69922	200º	-50º	320
751564	70078	200º	-50º	380
			Total	**3,630**

Listed in Table 20.3b are the recommended Phase II drill holes on the Malaguere artisanal gold mine and Figure 20.3c illustrates the Phase II drill holes and the gold bearing quartz vein. The datum is UTM WGS84.

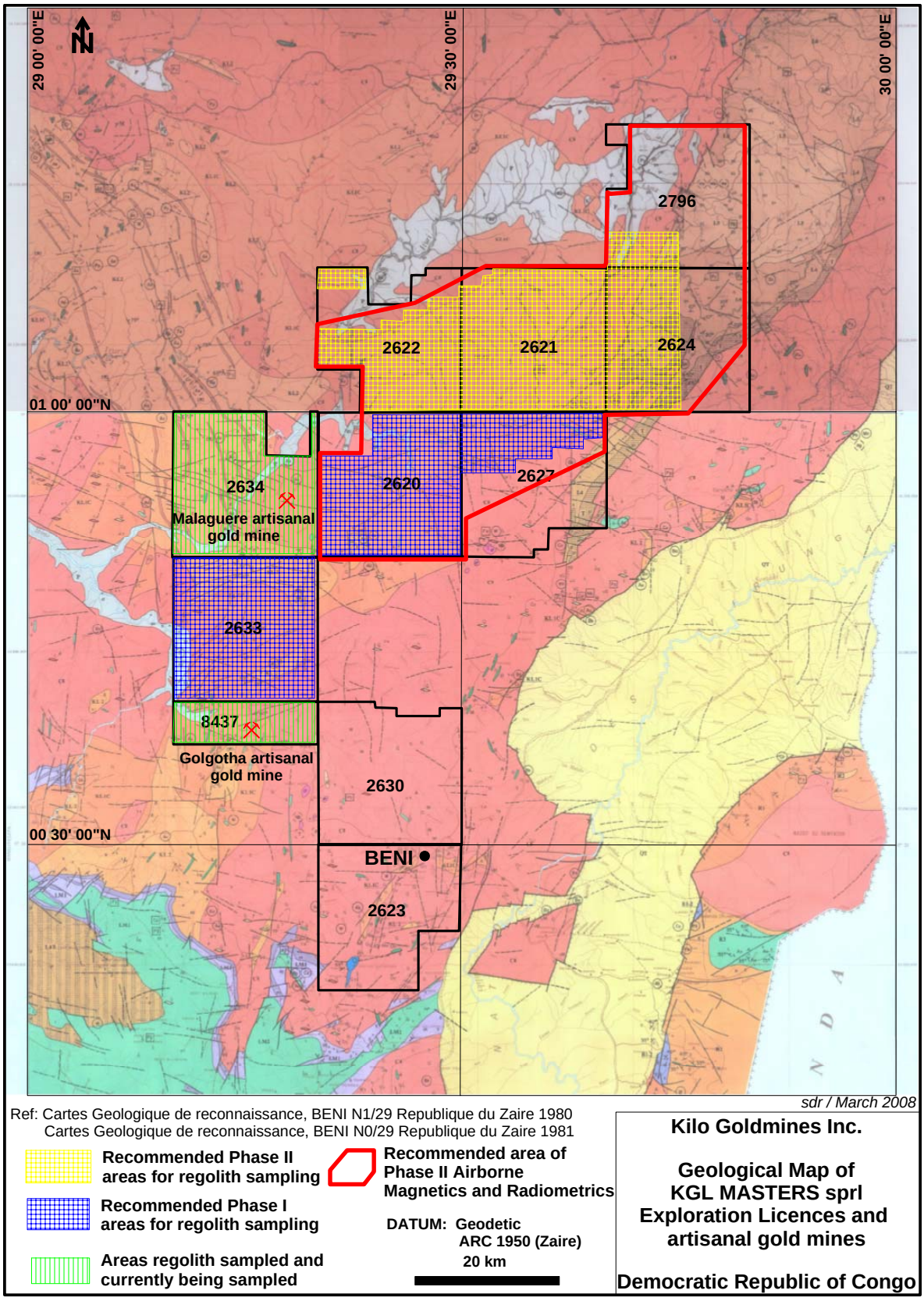

Figure 20.3a. Map illustrating areas recommended for Phase II airborne magnetic and radiometric surveys and regolith sampling.

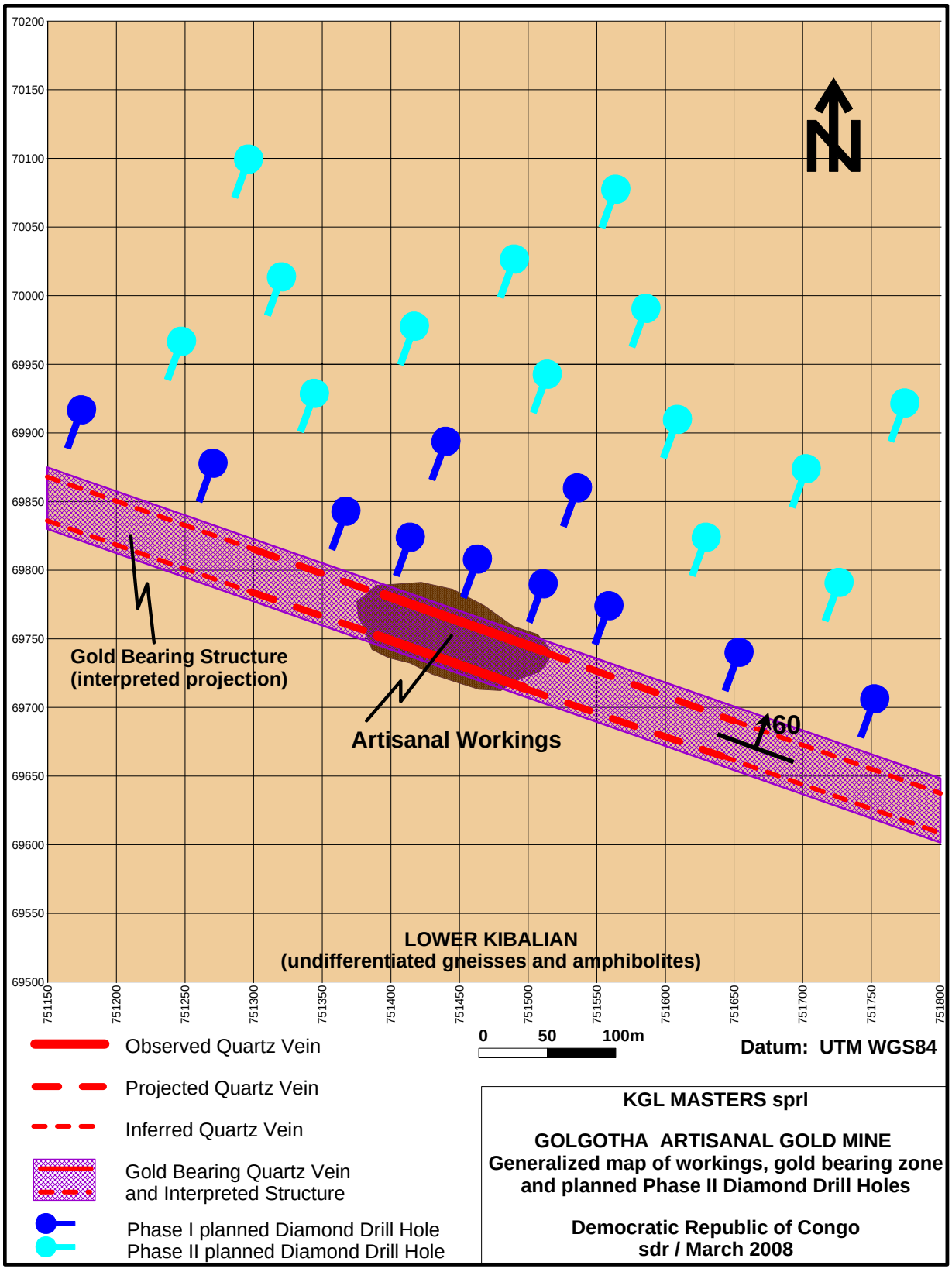

Figure 20.3b. Map illustrating the Phase II recommended diamond drill holes on the Golgotha artisanal gold mine.

Table 20.3b. Recommended Phase II diamond drill holes on the Malaguere artisanal gold mine.

UTM E	UTM N	UTM Azimuth	Dip	Length (M)
755654	99214	188º	-50º	170
755754	99202	188º	-50º	170
756153	99153	188º	-50º	170
756252	99140	188º	-50º	170
755611	99270	188º	-50º	240
755711	99257	188º	-50º	240
755811	99243	188º	-50º	240
755912	99230	188º	-50º	240
756011	99218	188º	-50º	240
756111	99207	188º	-50º	240
756210	99194	188º	-50º	240
756308	99183	188º	-50º	240
755768	99300	188º	-50º	290
755864	99287	188º	-50º	290
755966	99275	188º	-50º	290
756065	99264	188º	-50º	290
756164	99253	188º	-50º	290
755924	99330	188º	-50º	360
756023	99319	188º	-50º	360
			Total	**4,770**

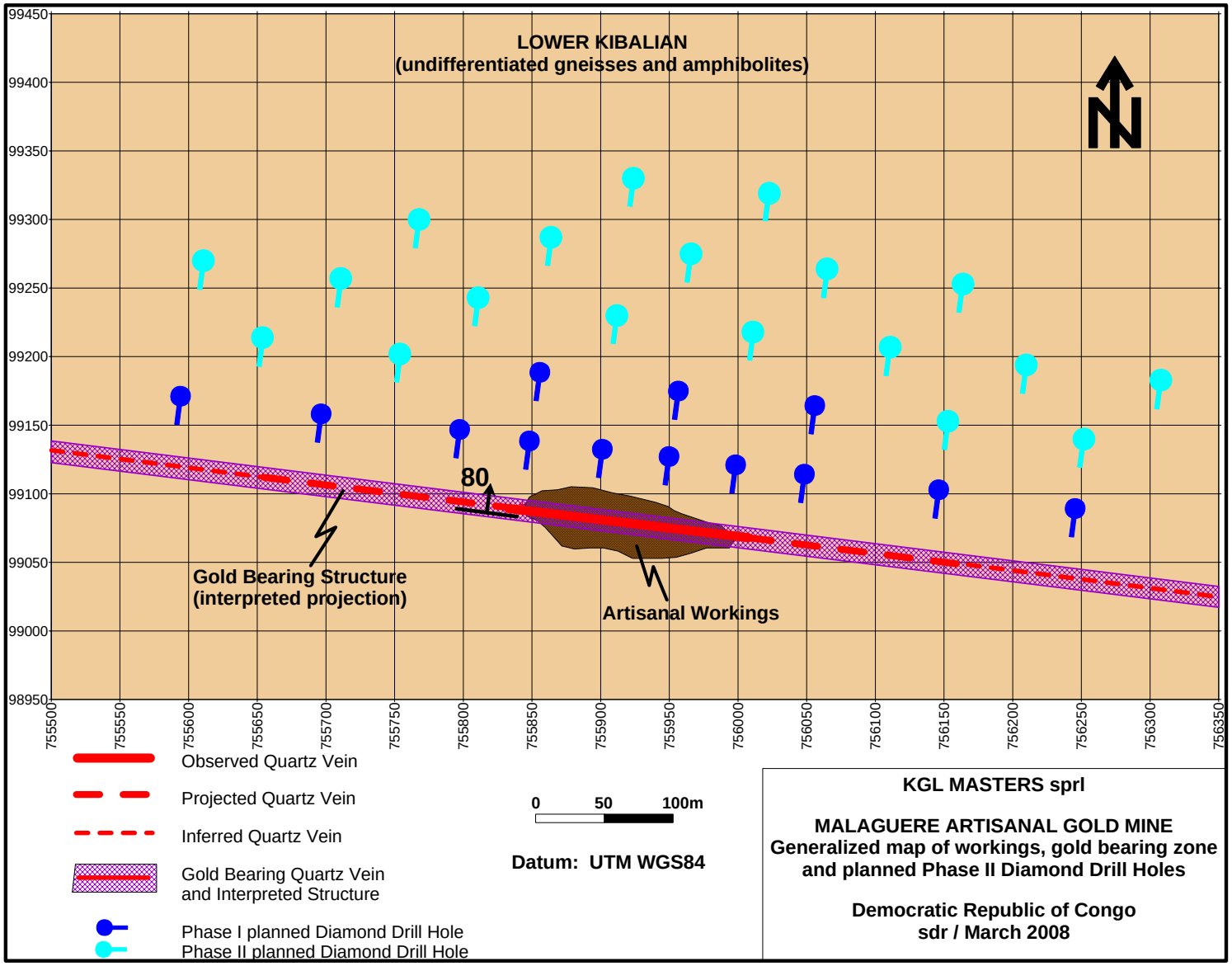

Figure 20.3c. Map illustrating Phase II recommended diamond drill holes on the Malaguere artisanal gold mine.

20.4 Recommended DRC Corporate Structure

To facilitate the exploration program Kilo has established a corporate administrative and technical office in Beni. Beni is the closest centre to the area to be explored with sufficient infrastructure to support the exploration activities. An organogram of the recommended personnel in the Beni office is presented herein in Figure 20.4a.

The primary function of the Beni Administrative office is to provide operational, logistical, financial and technical support to the field based exploration crews. Following is a brief description of the recommended function(s) each person should be responsible for and required to carry out.

- **Exploration Manager:** Reporting to the President of Kilo Goldmines the Exploration Manager has the overall responsibility of finalizing exploration activities, supervision of administrative and technical staff, liaison with all stakeholders and ensuring that all required reports are prepared and submitted to the relevant parties in a timely manner. Contracts with industry related services will be solicited, reviewed and recommendations made to the President. Also, there will be a requirement to monitor the preparation of quarterly unaudited and yearly audited financial statements.

- **Expatriate Operations Manager:** It will be the responsibility of the Expatriate Operations Manager to ensure that all activities of Kilo in the DRC are carried out in compliance with all applicable laws of the DRC. In order to effectively carry out this role a pro-active individual fluent in verbal and written French and English is essential.

  Ideally the Operations Managers will have a Military background as a key role will be to monitor security in the area.

  The Operations Manager should be a signing officer on the bank accountof the Kilo entity in the DRC and will be required to approve for payment all invoices. The Operations Manager will be expected to liaise closely with, and supervise all support staff, to ensure that all technical and financial reports are completed in a timely manner and filed in accordance with the various requirements including but not limited to the Mining Code / Mining Regulations and Fiscal requirements.

- **Administrative Manager:** An expatriate Administrative Manager or Comptroller is recommended to assist the Operations Manager with all aspects of Kilo in carrying out the necessary administration and exploration support. The Administrative Manager will maintain the administration office in an orderly fashion. The Administrative Manager will coordinate and approve all staff rotations and leave/vacation periods to ensure continuity of the exploration programmes are maintained. In addition, the Administrative Manager will cause to provide un-audited quarterly financial statements and annual audited financial statements to the Toronto office in a timely manner.

- **Senior Geologist:** The role of the Senior Geologist will be two-fold. Ensure that the project geologists are carrying out the planned exploration programmes in accordance with the corporate procedures. The Senior Geologist will liaise closely with the Database / GIS Geologist to ensure that the database is properly maintained and updated maps are generated as warranted by the field based exploration crews. In addition an integral function of the Senior Geologist will be to constantly review new

data, update interpretations as well as review and make geological interpretations on areas not being explored in order to generate and present exploration programs to the Exploration Manager.

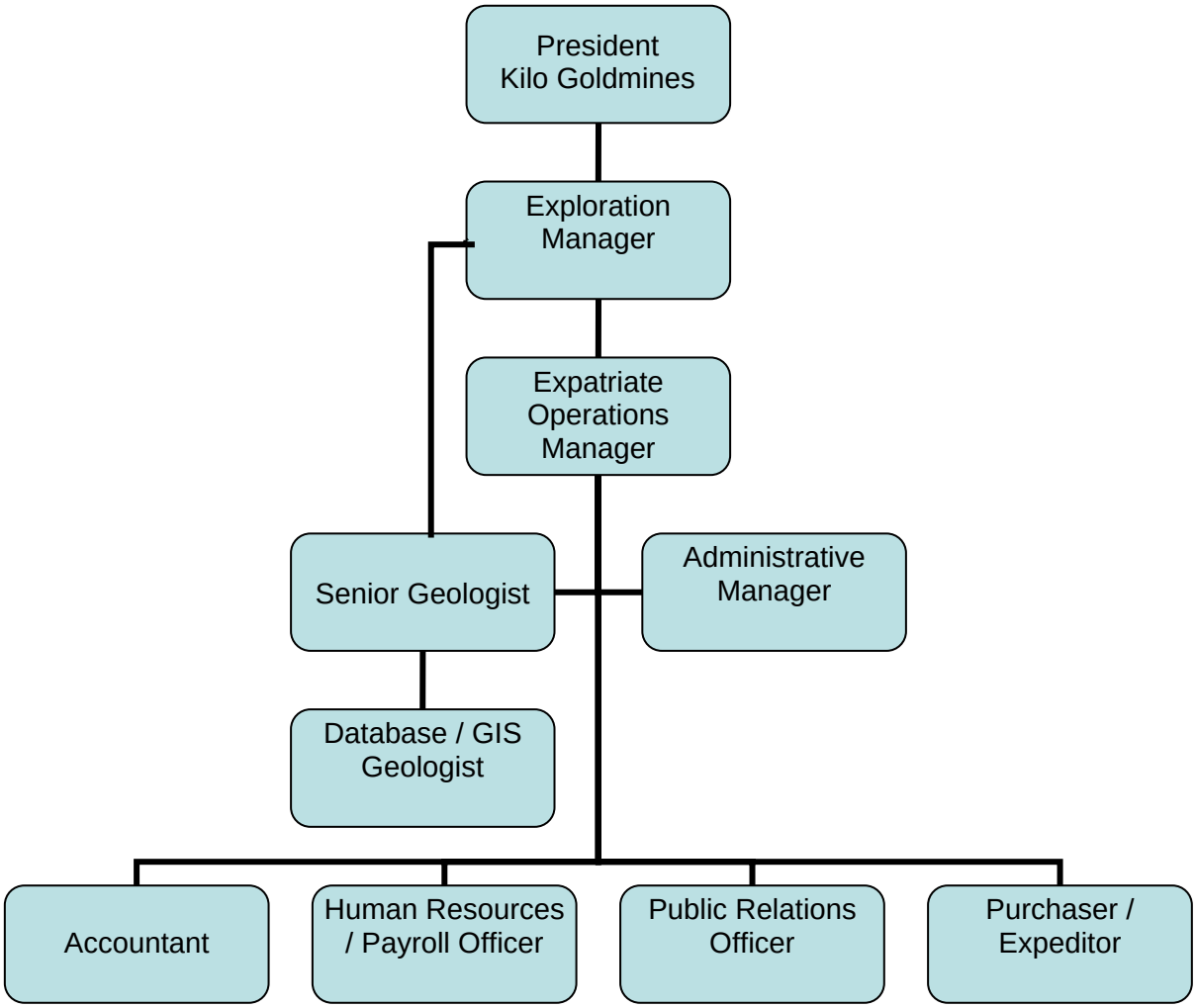

Figure 20.4a. Organogram for the Kilo DRC entity administrative and technical office in Beni.

- **Database / GIS Geologist:** The Database / GIS Geologist will have the overall responsibility of maintaining a database of all exploration data from the field based exploration geologists, Senior Geologist and Exploration Manager in a format that can be presented at any time to external audit. In addition the Database / GIS Geologist will provide maps and power points as requested by the Senior Geologist or Exploration Manager in a timely manner.

- **Accountant:** The accountant (Congolese National) will be responsible for maintaining all accounting records of the Kilo entities in the DRC in a manner consistent with Generally Accepted Accounting Procedures, ("GAAP") and any specific requirements to the DRC. All exploration expenditures must conform to any applicable requirements of the Mining Code or Mining regulations. The accountant will be required to provide monthly bank reconciliations and cash advance

reconciliations to the Administrative Manager. In addition, the preparation and presentation of un-audited quarterly financial statements to the head office in Toronto, Canada will be required. All required remittances to the relevant tax authorities, required social benefits remittances, insurance(s) and etc., will also be the responsibility of the accountant. The accountant will not be an authorized signing officer on the Kilo entity bank accounts in the DRC.

- **Human Resources / Payroll Officer:** The Human Resources / Payroll Officer (Congolese National) shall maintain all relevant personnel records. During periods of recruitment of personnel the Human Resources / Payroll Officer will assist, on site. Each Kilo DRC entity staff is to be issued a photo identity card indicating their position within the company. A number of sequentially numbered temporary identity cards will also be made to be used by persons employed on a very short term assignment. The Human Resources / Payroll Officer will prepare a contract for each employee in full compliance with the applicable Labour Code of the DRC. The employee rotation for Congolese Nationals will be determined by the Human Resources / Payroll Officer in discussion with the Operations Manager, but in any event will be set to comply with any applicable Labour Law. Also, obtaining all necessary work visas for expatriate employees will be facilitated by the Human Resources / Payroll Officer. Employee remuneration shall be calculated by the Human Resources / Payroll Officer at least monthly, and all required deductions shall be made. In order to facilitate the calculation and posting of employee remuneration the Human Resources / Payroll Officer will generate a 'time-sheet' for each employee to maintain. The Human Resources / Payroll Officer will travel to the applicable sites with sufficient funds to pay the staff. All payroll records will be presented to the accountant together with details of the expenditures in order to facilitate posting to the correct project / administrative accounts.

- **Public Relations Officer:** The Public Relations Officer (Congolese National) will constantly discuss the activities of the Kilo entities in the DRC with the local populace. In addition, all concerns that the populace may have in regards to the impact of Kilo on their lifestyle and property are to be presented to the Administrative Manager on an 'on-going' basis. A significant function of the Public Relations Officer will also be to liaise with elected officials, land administrators, medical, customs and immigration personnel as well as artisanal miners. In summary, the function of the Public Relations Officer will be to inform the local populace about Kilo and address all concerns that the local populace may have. In addition the Public Relations Officer must remain alert to any potential security issue(s) that may exist.

- **Purchaser / Expeditor:** It is recommended that the Purchaser / Expeditor (Congolese National) will have complete responsibility for acquiring all locally available items required to ensure the operations function without interruptions. In addition the Purchaser / Expeditor will facilitate the entrance into the DRC of items purchased from abroad, and the export of items, mainly geological samples, from the DRC. All necessary documentation to import supplies and export samples will be maintained by the Purchaser / Expeditor. Purchase order forms shall be prepared and made available to authorized exploration personnel for acquisition of consumable and durable goods.

To facilitate the effective execution of the recommended Phase I and Phase II exploration program on the Masters project the suggested field based personnel are presented as an organogram in Figure 20.4b.

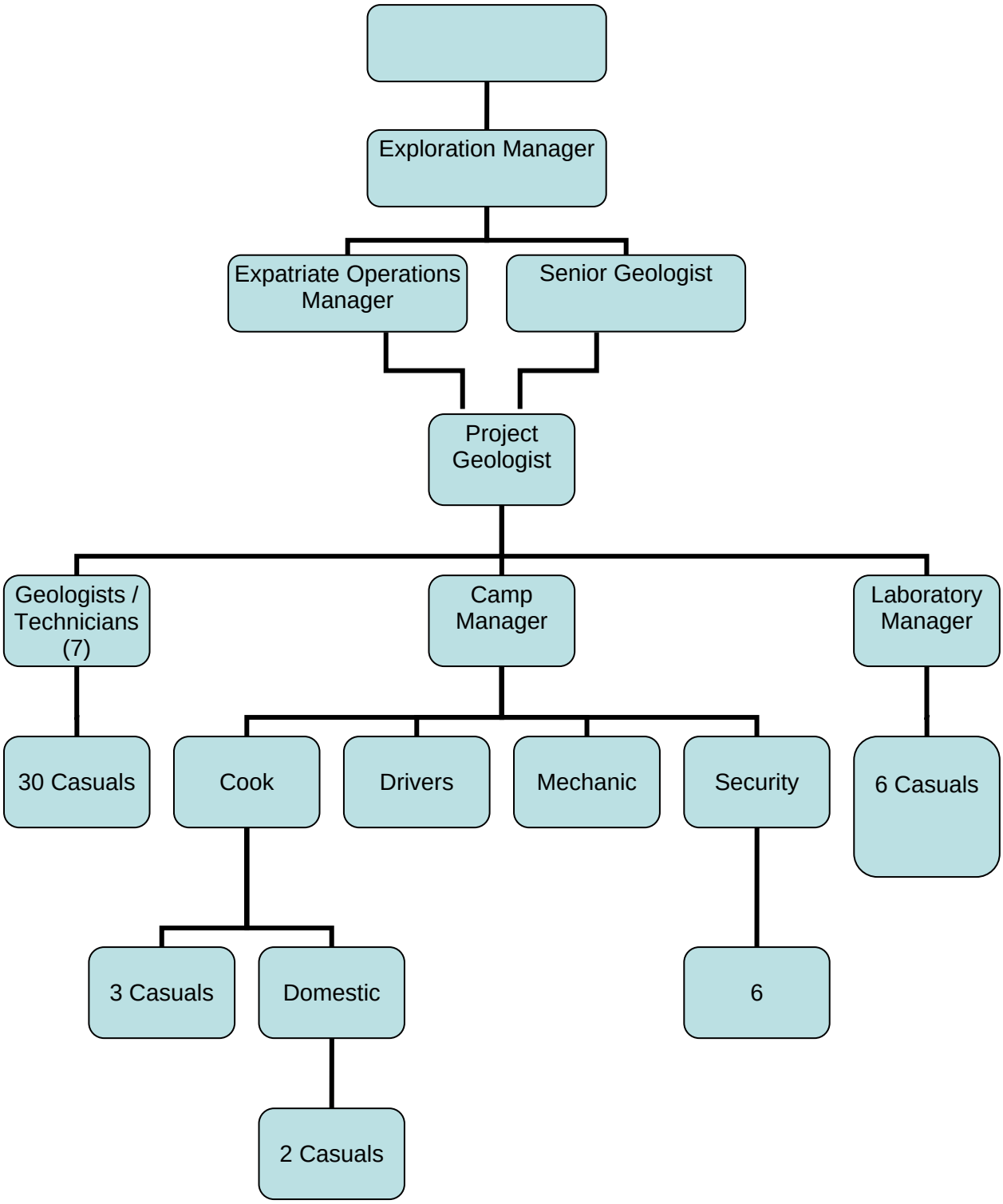

Figure 20.4b. Organogram for the Kilo DRC entity exploration camps on the KGL Masters Project Exploration Licences

The following is a brief description of the duties for each of the field based personnel:

- **Project Geologist:** Implement and supervise the exploration program as determined by the Exploration Manager and Senior Geologist. Provide weekly progress updates and monthly summary reports.

- **Geologists / Technicians:** Carry out the soil/regolith and stream sediment geochemical sampling program as well as geological mapping in accordance with the procedures of Kilo and the DRC entity of Kilo.

- **Laboratory Manager:** Manage all aspects of the sample preparation laboratory consistent with acceptable industry standards.

- **Camp Manager:** Manage all aspects of the camp. This position includes but is not limited to co-ordinating ordering and receipt of consumable goods, sample expediting to Beni, scheduling vehicle and personnel movement, and camp maintenance.

- **Cook:** Plan and prepare meals, prepare food and camp consumable supply orders in a timely manner. Supervise the domestic staff.

- **Domestic:** Maintain the camp in a neat and orderly fashion. Wash laundry.

- **Drivers:** Operate and maintain vehicles in a safe condition at all times. Report all mechanical problems to the Camp Manager.

- **Mechanic:** Maintain all equipment at camp operational and safe.

- **Security:** Ensure the safety of all personnel and equipment on site. Liaise with local villages to stay abreast of community development and potential security threats.

- **Casuals:** Carry out all aspects of soil/regolith and stream sediment sampling as directed by the geologists / technicians. Carry out all aspects of samaple preparation as instructed by the sample preparation laboratory manager. Also, carry out various camp duties as assigned.

20.5 Budget and Time Line

Budget: The budget assumes soil/regolith sampling will be carried out at the average rate of 35 samples per day plus stream sediment samples per sampling crew. It is recommended that a minimum target of 5,000 samples per month should be set in order to have a steady flow of samples to the sample preparation laboratory.

The recommended Phase I exploration programme comprised of the acquisition and installation of camp site infrastructure, establishing an administrative office in Beni, DRC, 6,500 line kilometres of airborne geophysical surveys, 29,000 regolith geochemical samples (including about 7% quality control samples), geological mapping and 5,000 metres of diamond drilling is estimated at US$3,500,000 as summarized in Table 20.5a.

The recommended Phase II exploration programme, consisting of about 9,500 line kilometres of airborne geophysical surveys, 35,000 regolith geochemical samples (including about 7% quality control samples), covering new areas and also in-fill soil sampling to define anticipated gold anomalies, trenching, Induced Polarization (IP) ground geophysics and 30,000 metres of drilling is estimated at US$8,000,000 as summarized in Table 20.5b.

Table 20.5a. Estimated budget for the recommended Phase I exploration programme.

Exploration Activity	US$
Aeromagnetic / Radiometric geophysics 6,500 line km @ 100m line spacing	600,000
Maps from Sat photos, photos, and Radar Sat images	50,000
Camp - including freight and construction (estimated)	135,000
ALS Sample prep laboratory construction (FOB Johannesburg, South Africa)	240,000
Transport & Installation of sample prep laboratory (estimated)	50,000
Consumable supplies - sample bags, stationary, tools, etc., (estimated)	50,000
Transport (sea) of consumable supplies	25,000
Vehicles 5 includes delivery to site (estimated)	150,000
Beni office (furniture, computers, consumables)	75,000
29,000 soil samples – collection - all inclusive	450,000
Sample prep, gold analysis, transport @ $15 / sample	435,000
Induced polarization (IP) survey	100,000
Geological mapping and interpretation – all inclusive	75,000
Camp costs (kitchen, fuel, support staff, maintenance)	150,000
3,000 metres Diamond Drilling all inclusive (includes analysis)	500,000
Beni administrative office, accounting, expediting, country manager, GIS, etc	250,000
Supervision / reporting	200,000
Travel (staff rotations)	65,000
Miscellaneous contingencies	100,000
TOTAL	**3,500,000**

Table 20.5b. Estimated budget for the recommended Phase II exploration programme.

Exploration Activity	US$
Aeromagnetic / Radiometric geophysics 9,500 line km @ 100m line spacing	850,000
32,000 soil samples – collection – all inclusive	500,000
Sample prep, gold analysis, transport @ $15 / sample	480,000
Trenching 10,000m – excavation costs (estimated)	50,000
10,000 trench samples gold analysis @ $15 / sample	150,000
IP surveys – all inclusive	200,000
Geological mapping and interpretation	50,000
25,000m Drilling – (RC and Diamond) – contractors costs	4,500,000
15,000 drill samples @ $15 / sample	225,000
Consumable supplies – sample bags, stationary, core boxes, etc	75,000
Supervision / reporting	220,000
Beni administrative office, accounting, expediting, country manager, GIS, etc	250,000
Camp costs (kitchen, fuel, support staff, maintenance)	250,000
Travel (staff rotations)	100,000
Miscellaneous contingencies	100,000
TOTAL	**8,000,000**

The author is of the opinion that the proposed two-phase program budgeted at US$11.5 million is realistic to achieve the objective of sufficiently evaluating a portion of the property to determine whether or not it has potential to host a gold zone(s) warranting further drilling to define resources.

Time Line: It is anticipated that it will take approximately 12 months to carry out the recommended Phase I exploration programme. Given that the Phase I recommended exploration programme only targets a portion of the KGL Masters Project area a 12 month **Phase II** exploration program is recommended herein to target those portions of the KGL Masters Project area with favourable geology not covered by the Phase I programme. Also, assuming that Phase I is successful, follow-up exploration on the areas covered by Phase I is also recommended in the Phase II exploration campaign.

Table 20.5c presents a time line by activity and month for the recommended Phase I and Phase II exploration programmes on the KGL Masters Project area.

Table 20.5c. Estimated time line of the recommended Phase I and Phase II exploration programmes on the KGL Masters Project Exploration Licences in the DRC.

EXPLORATION SCHEDULE – PHASE I and II – MASTERS Project																								
	PHASE I												PHASE II											
ACTIVITY	MONTH																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Order prep laboratory																								
Build prep laboratory																								
Transport & import prep lab																								
Establish prep lab at site																								
Order camp																								
Camp being built																								
Transport & import Camp																								
Construct camp at site																								
Order Consumables																								
Transport & Import Consum																								
Order vehicles																								
Obtain vehicles on site																								
Open Beni bank accounts																								
Airborne Geophysics																								
Geophysical interpretation																								
Recruit Staff																								
Establish Beni office																								
Geochemistry & mapping																								
Interpretation & reporting																								
Detailed geochemistry																								
IP of geochem anomalies																								
Trenching																								
Diamond Drilling																								

21.0 REFERENCES

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22.0 DATE AND SIGNATURE PAGE

Effective date of report: March 17, 2008

"Stanley D. Robinson"
Stanley D. Robinson, M.Sc., P.Geo

Date of signing report: March 17, 2008

Original signed by "S.D.Robinson"
APEGM Member Number 22886

CERTIFICATE OF AUTHOR'S QUALIFICATIONS

I, Stanley Robinson, hereby declare that:

a. I am an independent consulting geologist whose address is 157 Codsell Avenue, Downsview, Ontario, Canada M3H 3W5.

b. This certificate pertains to report entitled “43-101 Report on the KGL Masters Project,” dated March 17, 2008.

c. I have been involved in mineral exploration as a geologist continuously since 1974. I graduated from Sir George Williams University, Montreal (Canada) with a B.Sc. degree (1971) and from the University of Ottawa with a M.Sc. degree (1974). I have worked twelve years on gold projects in East and West Africa hosted in rocks having the same age, similar topography and climate as the KGL Masters project. I have been a Fellow (Number F2772) of the Geological Association of Canada since 1991, a Member (Number 96949) of the Canadian Institute of Mining, Metallurgy and Petroleum since 1980, a Member (Number 2164) of the Prospectors and Developers Association of Canada since 1977, a member of the Society for Economic Geologists since 2005 and a Professional Geoscientist in good standing with the Association of Professional Engineers and Geoscientists of Manitoba (Number 22886) since 2000. I am a "qualified person" as defined by NI 43-101.

d. I visited the KGL Masters project in September 2006, May/June 2007, August 2007, December 2007 and February 2008.

e. I have 13 years experience in exploration for gold deposits in Archaean and Proterozoic terranes in East and West Africa, including those in lateritic environments.

f. I am responsible for all sections of this report.

g. According to the tests of independence in section 1.5 of NI 43-101, I am independent of Kilo Goldmines Inc.

h. I have not previously worked on the KGL Masters Project property other than site visits above stated in Item d hereof. I do not hold any interest, directly or indirectly, in any of the properties discussed in this report, nor do I expect to obtain any direct interest in the properties discussed in this report.

i. I have read NI 43-101, and Form 43-101 F1 and this report has been prepared in compliance with these documents and in conformity with generally accepted Canadian mining industry practice.

j. As of the date of this report (March 17, 2008) I am not aware of any material fact or material change not reflected in this report. I consent this report can be submitted to regulatory agencies, and used for the purposes of a qualifying transaction simultaneously with an equity capital placement. I also consent to allow posting of this report on SEDAR.

Stanley D. Robinson, M.Sc., P.Geo APEGM Member Number 22886

“Stanley D. Robinson”

Date of signing report: March 17, 2008

CONSENT OF AUTHOR

157 Codsell Ave
Downsview
Ontario, Canada
M3H 3W5

March 17, 2008

Dear Sir / Madam

Pursuant to NI43-101 the undersigned hereby grants permission to Kilo Goldmines Inc. and/or Blue Ribbon Capital Corporation, to submit the report authored by the undersigned entitled "43-101 Report on the KGL MASTERS PROJECT" dated March 17, 2008 for review by all applicable authorities and, upon acceptance, filing on SEDAR.

Respectively submitted,

"Stanley D. Robinson"
Stanley D. Robinson, P.Geo.

23.0 ADDITIONAL REQUIREMENTS FOR TECHNICAL REPORTS ON DEVELOPMENT PROPERTIES AND PRODUCTION PROPERTIES

Not applicable (no development or production).