

leading earth-science solutions



Council for Geoscience

ANNUAL REPORT

—2007/08—

Vision:

Leading earth-science solutions

Mission:

To provide expert earth-science information and services to improve the management of natural resources and the environment for a better quality of life for all.

Values:

- (i) Innovate and create through teamwork;
- (ii) Excel through quality and performance;
- (iii) Value diversity through trust and respect, and
- (iv) Invest in its people.

Thrusts:

- Mineral Resources Development
- Geoscience Mapping
- Water Resources Assessment and Protection
- Engineering Geoscience and Physical Geohazards
- Environmental Geoscience and Chemical Geohazards
- Education and Information

Focus Areas:

- Growth
- Africa Development
- Innovation
- Rural Development and Poverty Eradication
- Regulatory Systems and Stakeholder Compliance
- Transformation
- Skills Development

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ABRIDGED
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Cover

The impact of the different sediment provenance areas of the desert sands and the ability of wind to selectively concentrate specific mineral fractions on the basis of grain size, specific gravity and shape. Understanding these processes is critical to exploration for titanium-bearing heavy minerals.



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of the Council for Geoscience
2007/08

Editing and Layout:

Information Management Unit, CGS

Printing:

Bathopele Marketing

Publication Date:

August 2008

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Council for Geoscience

MANAGEMENT BOARD

OF THE COUNCIL FOR GEOSCIENCE



Prof. P E Ngoepe
Chairperson of the Board



Mr T Ramontja
Chief Executive Officer



Prof. J M Barton Jr



Dr D G Clarke



Mr R W Hieber



Mr K Hodges



Ms T R Mbassa



Mr A P Nkuna



Ms N D Ntombela



Ms T Xaso

Alternate Members

Ms S Bansi

Alternate to Ms N D Ntombela

Mr M Riba

Alternate to Dr D G Clarke

Mr M Smith

Alternate to Mr R W Hieber

REVIEW

CHAIRPERSON OF THE BOARD AND THE CHIEF EXECUTIVE OFFICER OF THE
COUNCIL FOR GEOSCIENCE



The past year was successful for the Council for Geoscience (CGS) in several areas of endeavour. Scientifically the organisation has successfully executed its statutory science programme, as well as its commercial operations, both locally and abroad. However, this year also brought several challenges, the main issue being the problem of staff turnover, especially of scientists. The worldwide shortage of geologists, to a great extent driven by the expansion in the oil, gas and minerals industry, has resulted in the CGS having difficulty in appointing and retaining qualified geoscientists. Young geoscientists, in particular, are highly sought after in the job market. The CGS has instituted the following measures to address the problem:

- Establishment of a geological field-mapping school to train young geoscientists in the critical skill of geological mapping, which represents the core function of the CGS. A proposal for collaboration

in this regard with the Mining Qualification Authority, SETA, was submitted.

- Development of an intensive two-year mentoring programme for young scientists.
- Recruitment of geoscientists from Africa and countries such as India and the United Kingdom in cases where local candidates are not available.

A key challenge for the CGS remains the baseline funding that the organisation receives, which is insufficient to cover the much-needed geoscience investigations for the country. This shortfall compels the organisation to commercialise many of its activities, especially overseas, which, in turn, leads to many local geoscientists having to work in other countries, rather than on geoscience issues within this country.

The CGS has observed that there is a gradual decline in the availability of large commercial geological mapping programmes funded by either the World Bank or the European Union. Although the CGS wishes to continue its involvement in these programmes, it recognises that the infrequent and erratic availability of these programmes is not favourable to the CGS operational model and, consequently, the organisation has developed new funding sources. Of particular importance in this regard is the significantly escalated level of services the CGS has been providing to Eskom as part of the energy provider's New Build programme of increased electricity generation. The CGS is pleased to be involved in this strategically important area of activity and expects to render even greater assistance to Eskom in the future. Furthermore, the CGS has decided that, where necessary, the organisation will realign its operations in order to ensure that it can provide its full commitment to Eskom.

During the year under review the CGS has made considerable progress in reviewing the role of the organisation in addressing the development needs of the country. This was done in recognition of the need for the CGS to play an increasing role in assisting the process of land and infrastructural development, in order that the impact of geohazards is minimised.

The CGS has completed the first phase in the upgrading of five stations of the South African National Seismograph Network, and is sending data in real time from these stations to an International Data Centre in Indonesia as part of South Africa's contribution toward the establishment of the Indian Ocean Tsunami Early Warning System (IOTWS).

The CGS also endeavoured to promote IOTWS preparedness and awareness programmes as part of an educational effort. This initiative falls within the framework and objectives of Working Group 6 of the Intergovernmental Coordination Group.

The CGS has been mapping the terrestrial territory of South Africa for more than 100 years, during which geological, geophysical, metallogenic and geochemical information have been collected and presented in the form of maps. This service has underpinned the mineral-exploration industry, as well as the land-use development issues of the country. The role of a national geoscience institution, such as the CGS, is of significant importance to the economic development of the country. However, knowledge of South Africa's sea bed, which represents an area of 1,5 million km² (South Africa's land area is 1,2 million km²) is almost non-existent. It is expected that South Africa will seek to extend its territory seaward when its submission to the United Nations in terms of the Law of the Sea is tabled in May 2009. The sea bed is known to contain many resources, such as phosphate, manganese, gas hydrate, aggregates, carbonate for cement and even base metals. The sea bed also comprises environments in which the country's fish stocks are sustained. Increasing interest is being shown in the sea bed from which renewable sources of energy can be produced. There is little doubt that the large sea-bed area of the country represents the next frontier for exploration. In recognition of this, the CGS has embarked on a series of activities to highlight the importance of a systematic offshore mapping programme for the country. The CGS will be making submissions to Government in this regard during the next financial year.

The ongoing, since 2005, Small-Scale Mining Programme of the CGS, in partnership with the Department of Minerals and Energy, continued in the financial year under review. The objective of the programme is to assist in the elimination of barriers and the facilitation of access to the mainstream mining industry of South Africa. Emphasis is also placed on creating and increasing wealth in a sustainable manner, especially for rural communities. By the end of the financial year which ended on 31 March 2008, 171 projects had been approved for technical investigation and the purchase of equipment under the auspices of the Small-Scale Mining Programme.

The CGS has commenced work on GIS-based predictive mineral-deposit mapping, using its extensive databases, including geology, structures, geochemistry, remote-sensing imagery and geophysics, together with other data sources, to generate mineral potential/predictive maps of various metallogenic regions throughout South Africa. It is hoped that potential target areas identified by this technique will assist toward promoting the small-scale mining sector and other mineral industries in South Africa and, in particular, toward the creation and growth of new opportunities. A copper-potential map, comprising two sheets, has so far been completed of the copper-rich district in the Limpopo Province. The project will continue by studying the gold potential of the greenstone belts of South Africa.

Considerable investment has been made in recapitalising the scientific equipment of the CGS, varying from geophysical and geochemical equipment to the building of a dedicated near-shore survey vessel. The impact of these investments has, for example, increased the rate of geochemical sampling analysis by tenfold. Investments have also been made in information-technology infrastructure, with the modernisation of e-mail and back-up servers, and the improvement of bandwidth.

The CGS is in the process of finalising the procurement of a multipurpose drilling rig to assist with required drilling and sampling work related to the assessment of mineral deposits in terms of the Small-Scale Mining Programme of the Department of Minerals and Energy. The drilling rig will enhance the capability of the CGS to conduct assessments and to fast track the possible development of new small-scale mining operations. The drilling rig can perform several drilling techniques using one piece of equipment, a major advantage in reducing site-specific logistics.

An important and innovative development for South Africa has been the involvement of the CGS in the compilation of a carbon-dioxide geological storage atlas. Carbon capture and storage (CCS) constitute one of the recognised mitigation measures for the lowering of greenhouse-gas emissions. Assessment of the potential for CCS in South Africa requires a detailed investigation into locating and characterising potential carbon geological storage sites. The CGS, along with the Petroleum Agency of South Africa, is tasked with the compilation of this atlas, which is sponsored by Sasol, Eskom, PetroSA, Anglo American plc and the South African National Energy Research Institute (SANERI).

Important progress has been made on the compilation of the first seamless geological map for the SADC region. This represents a benchmark geoscience product for the region and will contribute significantly to mineral and groundwater exploration. The map is expected to be published in August 2008.

The Witwatersrand Water Ingress Project that the CGS has been conducting on behalf of the Department of Minerals and Energy, relating to the problem of mine water in the Witwatersrand gold-mining area, has reached a critical juncture, with the completion of a draft strategy document for the management of ingress and decant of mine water in gold mines in the Witwatersrand and the Klerksdorp–Orkney–Stilfontein–Hartbeesfontein (KOSH) areas. This proposed strategy is still to be widely distributed for public comment, before it is refined and adopted for implementation as an official Government strategy document.

The CGS has recognised the increasing need for a system integrating all its support operations, such as finances, human resources, procurement and other core operations, and has decided to implement an Enterprise Resource Planning (ERP) system for this purpose. This will give the CGS a much more up-to-date view of its financial status, scientific project plans and other resources and will enable the organisation to use its management information in a more proactive and strategic way, rather than simply offering a retrospective method of reporting the organisation's history.

The CGS is pleased to report that it has won the bid on behalf of South Africa to host the General Assembly of the International Association of Seismology and Physics of the Earth's Interior (IASPEI) in 2009, which will be held at the Cape Town International Convention Centre. This is the first IASPEI General Assembly to be held in Africa, and is endorsed by the Minister of Minerals and Energy, the International Council for Science, the Geological Society of South Africa and the South African Geophysical Association.

The CGS also plans to make a bid on behalf of the country to host the International Geological Congress (IGC) in 2016. This prestigious event is held every four years and attracts more than 7 000 visitors from around the world. The bid will be made at the next IGC in Oslo, in 2008.

In terms of international collaboration, the CGS has been involved in two projects with India. One is to produce a metallogenic and tectonic framework

linking Peninsular India with eastern/southern Africa. The second focuses on coal resources and the associated geology of India and South Africa. South Africa, through the CGS, has also forged a strong scientific and institutional collaborative relationship with Algeria by assisting the country in restructuring, developing and implementing a new geological-survey type institution. A corroborative project with two Japanese institutions, JOGMEC (Japan Oil, Gas and Metals National Corporation) and AIST (National Institute of Advanced Industrial Science and Technology), is currently in progress as part of the Japan–South African JIPSA Programme and focuses on the assessment of rare-earth elements in South Africa. An agreement between the CGS and the Korea Institute of Geoscience and Mineral Resources (KIGAM) is at an advanced stage, focusing on the scientific

study of selected alkaline and carbonatite deposits and their associated mineralisation in South Africa.

The Board and Executive Management of the CGS are highly appreciative of the staff and value their dedication and commitment to the organisation. Despite staffing issues and insufficient baseline funding that represent key challenges to the organisation, it is gratifying that the CGS is focusing on national strategic issues such as electricity generation. Ideally, the CGS would wish to further increase its focus on similar national issues where the geosciences have a major role to play.

The Board and Management of the CGS would like to thank the Ministers and staff of the Departments of Minerals and Energy and of Science and Technology for their valued support and the contributions they have made during the past financial year.



Prof. P E Ngoepe
Chairperson: Management Board of the CGS



Mr T Ramontja
Chief Executive Officer

ABRIDGED BOARD CHARTER

PER PFMA AND PROTOCOL ON CORPORATE GOVERNANCE

Board Charter

A Board Charter, which sets out the responsibilities of the Board, was developed and established for the Management Board of the Council for Geoscience, and includes the Board's code of conduct. The Board is fully committed to maintaining the standards of integrity, accountability and openness required to achieve effective corporate governance.

The charter confirms the Board's

- accountability;
- fiduciary duties and responsibilities;
- appointment of committees;
- governance and meeting procedures;
- duty to declare conflict of interests;
- responsibility for adoption of strategic plans;
- monitoring of the operational performance and management;
- determination of policy and processes to ensure the integrity of the CGS's risk management and internal controls;
- communications policy; and
- director selection, orientation and evaluation.

The Board Charter is reviewed when necessary to ensure that it remains relevant to the business objectives of the Council for Geoscience.

STATEMENT OF RESPONSIBILITY

Council For Geoscience

Management Board's Responsibility for the Annual Financial Statements

The Board Members are responsible for the monitoring, preparation and the integrity of the financial statements and related information included in this annual report.

In order for the Board to discharge its responsibilities, Management has developed and continues to maintain a system of internal controls. The Board has the ultimate responsibility for the system of internal controls and reviews its operation primarily through management structures.

The internal controls include a risk-based system of internal accounting and administrative controls designed to provide reasonable, but not absolute assurance that assets are safeguarded and that transactions are executed and recorded in accordance with generally accepted business practices and the Council for Geoscience's policies and procedures. These controls are implemented by trained, skilled personnel with an appropriate segregation of duties and are monitored by Management. It includes a comprehensive budgeting and reporting system operating within strict deadlines and an appropriate control framework.

The Board is accountable for the process of risk management and the system of internal controls in the Council for Geoscience. This is regularly reviewed for effectiveness and for establishing appropriate risk and control policies and communicating these throughout the organisation. There is an ongoing process for identifying, evaluating and managing the significant risks faced by the organisation. It has been in place for the year under review, up to the date of approval of the annual report and financial statements.

There is an adequate system of internal controls in place to mitigate the significant risk faced by the organisation to an acceptable level. This system is designed to manage, rather than eliminate, the risk of failure and to maximise the opportunities to achieve business objectives.

There is a documented and tested process in place that will allow the organisation to continue its critical business processes in the event of a disastrous incident impacting on its activities.

The external auditors are responsible for reporting on the financial statements. These financial statements are prepared in accordance with South African Statements of Generally Accepted Accounting Practices that incorporate disclosures in line with the accounting philosophy of the company. The financial statements are

based on appropriate accounting policies, consistently applied and supported by reasonable and prudent judgements and estimates.

The Board Members believe that the organisation will be a going concern in the year ahead. For this reason they continue to adopt the going-concern basis in preparing the financial statements of the Council for Geoscience.

The Board Members are not aware of any matter or circumstance arising since the end of the financial year, not otherwise dealt with in the Council for Geoscience's annual financial statements that would affect the operations of the Council for Geoscience or the results of its operations significantly.

The annual financial statements for the year 2007/08 were approved by the Accounting Authority in terms of section 51.(1)(f) of the Public Finance Management Act on 31 July 2008 and are signed on its behalf by:



Prof. P E Ngoepe
Chairperson: Management Board of the CGS



Ms T R Mbassa
Member: Management Board of the CGS

Date: 31 July 2008
Pretoria

REPORT OF THE AUDITOR-GENERAL TO PARLIAMENT ON THE FINANCIAL STATEMENTS AND PERFORMANCE INFORMATION OF THE COUNCIL FOR GEOSCIENCE FOR THE YEAR ENDED 31 MARCH 2008

REPORT ON THE FINANCIAL STATEMENTS

Introduction

1. I have audited the accompanying financial statements of the Council for Geoscience which comprise the statement of financial position as at 31 March 2008, statement of financial performance, statement of changes in net assets and cash flow statement for the year then ended, and a summary of significant accounting policies and other explanatory notes, and the accounting authority's report, as set out on pages 31 to 57.

Responsibility of the accounting authority for the financial statements

2. The accounting authority is responsible for the preparation and fair presentation of these financial statements in accordance with the basis of accounting determined by the National Treasury, as set out in accounting policy note 1.1, and in the manner required by the Public Finance Management Act, 1999 (Act No. 1 of 1999) (PFMA). This responsibility includes:
 - designing, implementing and maintaining internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error
 - selecting and applying appropriate accounting policies
 - making accounting estimates that are reasonable in the circumstances.

Responsibility of the Auditor-General

3. As required by section 188 of the Constitution of the Republic of South Africa, 1996 read with section 4 of the Public Audit Act, 2004 (Act No. 25 of 2004) (PAA), my responsibility is to express an opinion on these financial statements based on my audit.

4. I conducted my audit in accordance with the International Standards on Auditing and *General Notice 616 of 2008*, issued in *Government Gazette No. 31057 of 15 May 2008*. Those standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.
5. An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.
6. An audit also includes evaluating the:
 - appropriateness of accounting policies used
 - reasonableness of accounting estimates made by Management
 - overall presentation of the financial statements.
7. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

Basis of accounting

8. The public entity policy is to prepare financial statements on the basis of accounting determined by the National Treasury, as set out in accounting policy note 1.1 to the financial statements.

Opinion

9. In my opinion the financial statements present fairly, in all material respects, the financial position of the Council for Geoscience as at 31 March 2008 and its financial performance and cash flows for the year then ended, in accordance with the basis of accounting determined by the National Treasury, as set out in accounting policy note 1.1 and in the manner required by the PFMA.

OTHER MATTER(S)

Without qualifying my audit opinion, I draw attention to the following matter(s) that relate to my responsibilities in the audit of the financial statements:

Matter of governance

10. The PFMA tasks the accounting authority with a number of responsibilities concerning financial and risk management and internal control. Fundamental to achieving this is the implementation of certain key governance responsibilities, which I have assessed as follows:

Matter of governance	Yes	No
Audit committee		
• The public entity had an audit committee in operation throughout the financial year.	X	
• The audit committee operates in accordance with approved, written terms of reference.	X	
• The audit committee substantially fulfilled its responsibilities for the year, as set out in section 77 of the PFMA and Treasury Regulation 27.1.8.	X	
Internal audit		
• The public entity had an internal audit function in operation throughout the financial year.	X	
• The internal audit function operates in terms of an approved internal audit plan.	X	
• The internal audit function substantially fulfilled its responsibilities for the year, as set out in Treasury Regulation 27.2.	X	
Other matters of governance		
The annual financial statements were submitted for audit as per the legislated deadlines section 55 of the PFMA for public entities.	X	
The financial statements submitted for audit were not subject to any material amendments resulting from the audit.	X	
No significant difficulties were experienced during the audit concerning delays or the unavailability of expected information and/or the unavailability of Senior Management.		X
The prior year's external audit recommendations have been substantially implemented.	X	

OTHER REPORTING RESPONSIBILITIES

Reporting on performance information

11. I have reviewed the performance information as set out on pages 24 to 28.

Responsibilities of the accounting authority

12. The accounting authority has additional responsibilities as required by section 55(2)(a) of the PFMA to ensure that the annual report and audited financial statements fairly present the performance against predetermined objectives of the public entity.

Responsibility of the Auditor-General

13. I conducted my engagement in accordance with section 13 of the PAA read with *General Notice 616 of 2008*, issued in *Government Gazette No. 31057 of 15 May 2008*.
14. In terms of the foregoing my engagement included performing procedures of an audit nature to obtain sufficient appropriate evidence about the performance information and related systems, processes and procedures. The procedures selected depend on the auditor's judgement.

15. I believe that the evidence I have obtained is sufficient and appropriate to report that no significant findings have been identified as a result of my review.

APPRECIATION

16. The assistance rendered by the staff of the Council for Geoscience during the audit is sincerely appreciated.

Auditor-General!

Pretoria

31 July 2008



AUDITOR - GENERAL

EXECUTIVE REPORT

Mandate of the Council for Geoscience

The Council for Geoscience (CGS) is mandated to gather, compile, interpret and disseminate geoscience knowledge for South Africa, as provided for by the Geoscience Act (Act No. 100 of 1993). This mandate includes the following:

- a. Carry out the systematic geoscience (geological, geophysical, geochemical, metallogenic, etc.) mapping of the onshore and offshore territories of South Africa, compile the information into products and publish the information for public use.
- b. Collect, archive and arrange access to all geoscience data and information on South Africa. These data and information include the data from the CGS, universities and private companies.
- c. Conduct basic geoscience research in order to understand geoscience processes, both present and past.
- d. Manage a number of national geoscience facilities on behalf of the country. These resources include the National Geoscience Museum, the National Borehole Core Library, the National Geoscience Library, the National Seismograph Network and the South African Infrasound Observatory.
- e. Provide ad hoc advice to Government on geoscience matters.

- f. Provide geoscience data and products to external clients, both nationally and internationally. These services are to be rendered on a full cost-recovery basis.

Legislative and Corporate Governance Requirements

The CGS was established in terms of the Geoscience Act (Act No. 100 of 1993). This Act also established the mandate and national responsibilities of the CGS. The CGS was listed as a schedule 3A Public Entity in terms of the Public Finance Management Act (Act No. 1 of 1999), as amended by Act No. 29 of 1999.

Overview of Business Operations

During the past year the CGS has continued to execute both its statutory and commercial programmes. The management of the national geoscience facilities on behalf of the State is included in the statutory programme.

South Africa is currently facing an energy challenge which has been characterised by an increase in the demand for energy. The CGS is well positioned to conduct research, and to provide advice and information to relevant key stakeholders in this regard. Some of the opportunities for the CGS, derived from the energy situation thus far, are:

- Carbon sequestration
- Provision of geoscience services to Eskom.

The mining sector plays a major role in defining the economic landscape of South Africa and in ensuring that the South African economy remains competitive on the global stage. The critical success factor in this regard is the capability of the mining sector to supply the relevant products and services, including the ability of the economy to create the platform for sustained operations, as well as the ability of the nation to aggressively map the geology of the country and to develop methods for the rapid delivery of results to the private and public sectors. The CGS is a key role player in this regard; hence, the bulk of statutory funding is utilised for geoscience mapping.

Other areas of focus at the moment include the following:

- The formulation of and involvement in various geoscience partnerships, which are aimed at developing infrastructure capacity and capabilities, including building Africa's geophysics capacity in order to create a workforce of highly trained scientists to meet the long-term manpower requirements of the continent's natural-resource sector, as well as to reverse the current 'brain drain' of Africa's best and highly skilled scientists.
- The CGS is a key role player in the Organisation of African Geological Surveys (a NEPAD initiative), of which the mandate is to foster and sustain government-supported geoscience endeavours and excellence on the African continent. The ultimate purpose of this endeavour is socio-economic development and poverty eradication, with special reference to mineral-resource assessment, sustainable land use and development, hazard mitigation and environmental protection. The specific aims of the organisation include, but are not limited to, creating regional and continent-wide promotional maps and documents that inform decision makers in government and industry on matters relating to the applied geosciences.
- The provision of direct support to African countries that do not have the capacity to map their continental shelves as a preliminary step in the process of claiming extensions to their Exclusive Economic Zones, which need to be submitted by 2009.

The CGS, in close cooperation with the Department of Minerals and Energy, forms part of the Small-Scale Mining Board (SSMB). This Board is responsible for assessing and approving various small-scale mining-project proposals. Significant progress has been made during the past year with the registration and execution of several new projects.

A substantial part of the commercial commitment of the CGS still resides with its international projects, procured through the Economic Development Fund of the European Union and the World Bank. The CGS plays different roles in these programmes; as technical leader, participant in the execution of the work, as well as supervisor of other consultants involved in the projects.

The current statutory funding levels fall short of enabling the CGS to meet its mandate. Hence, the national and international projects that the CGS is undertaking are crucial for the organisation to effectively support its annual technical programme, part of its statutory commitment, and to sustain the growth taking place in the organisation. Although the organisation has been successful in sourcing commercial projects, an increased demand on its resources, as a result of having to service these commercial projects, has led to a situation where the most experienced geoscientists are often allocated to commercial work, thus resulting in under capacity in servicing statutory work. There is also the realisation that this situation has created and is perpetuating an increased risk of strategic drift from the core business.

Consequently, the CGS Management, in 2006/07, developed a national strategy to transform the CGS into a geoscience organisation that focuses on national growth issues. The need for this strategy document was based on the realisation that the CGS was facing critical challenges with regard to its operations and ability to contribute to the country's economy. Therefore serious and urgent interventions were needed if the CGS was to remain relevant to the needs of the country. In order to meet the requirements of its mandate of producing geoscience knowledge and infrastructure, and of developing geoscience-related solutions that address the growth challenges facing the country, the CGS has developed longer-term strategies, by which it is engaging Government to secure additional funding through the Medium-Term Expenditure Framework process. So far, the organisation has been successful with a programme for the identification of priority

mineral targets by using national geophysical and geochemical surveys.

Geoscience mapping and research programmes of the CGS, which are financed by State funds appropriated by Parliament, have made good progress in terms of achieving targets and improving performance. In this regard, the technical performance of the CGS for the past year was 89.3 per cent.

Highlights of Financial Results

	2008 R'000	2007 R'000
Government grant – core funding	107,755	93,100
Grant – earmarked funding	-	265
Government grant recognised	2,756	2,849
Contracting revenue	89,070	97,701
Publication revenue	760	595
Other operating income	22,374	12,556
Total revenue	222,715	207,066
Total expenses	200,167	190,839
Surplus for the year	22,548	16,227

Strategic Objectives

The evolution of the CGS as an organisation has been characterised by a number of key successes, some of which are:

- The CGS has accumulated an extensive body of knowledge by the systematic geoscience mapping of South Africa, and has published information, data and results to this effect.
- The CGS has contributed broadly to poverty eradication and the development of the 'second economy' by participating in the programme aimed at developing small-scale mining operations.
- The CGS has become a financially viable institution.
- Through its commercial, regional and international commitments, the CGS has been able to establish a reputation of professionalism and ability to meet its commitments.

- The CGS has systematically improved its infrastructural resource base to allow it to deliver on its mandate.

In realising the urgent need for the CGS to address the national imperatives, its technical and social programmes address the following focus areas of the organisation as defined in its strategy:

- **Growth of the CGS and development of the 'first economy'** (ensuring that the CGS grows as an organisation and also contributes to economic development — people, science and finances)
- **Regulatory systems and stakeholder** (ensuring CGS compliance with legislative requirements, development of CGS regulatory systems and alignment with national mandates)
- **Rural development and poverty eradication** (ensuring that the CGS contributes to the development of the 'second economy')
- **Innovation** (development of products, systems and services)
- **Africa development** (CGS assistance in the development of Africa and its people, by upgrading the continent's geoscience infrastructure)
- **Skills development** (building capacity in respect of scientific, administrative and managerial/ leadership skills)
- **Transformation** (business and people).

The objectives of the CGS are achieved by continuously improving and enhancing the quality of its geoscience research, products and services. The strategic research priorities of the CGS are based on the following six scientific and business thrusts:

- Geoscience research and mapping
- Geoscience applicable to the engineering and construction industries, and the mitigation of geoscience-related physical hazards
- Geoscience applicable to water
- Geoscience education and information management
- Mineral- and energy-resources development and poverty eradication
- Geoscience research applicable to the environment and chemical hazards.

The Management Board of the CGS approves the mission, strategies, goals, operating policies and priorities of the organisation and monitors compliance with the policies and achievements with respect to the scientific, administrative and financial objectives.

The Board had the following active Committees during 2007/08:

- o Audit and Risk Committee
- o Finance Committee
- o Technical Committee
- o Personnel, Remuneration and Transformation Committee.

Prof. P E Ngoepe
(Chairperson)
Re-appointed on 1 October 2006

Mr T Ramontja
(Chief Executive Officer — *Ex Officio*)
Appointed on 1 November 2003

Prof. J M Barton Jr
Re-appointed on 1 October 2006

Dr D G Clarke
Re-appointed on 1 October 2006

Mr A P Nkuna
Re-appointed on 1 October 2006

Ms N D Ntombela
Resigned on 31 March 2008

Ms T Xaso
Re-appointed on 1 October 2006

Mr R W Hieber
Appointed on 1 October 2006

Mr K Hodges
Appointed on 1 October 2006

Ms T R Mbassa
Appointed on 1 October 2006

Ms S Bansi
Alternate to Ms N D Ntombela
Resigned on 1 May 2007

Mr M Riba
Alternate to Dr D G Clarke
Re-appointed on 1 October 2006

Mr M Smith
Alternate to Mr R W Hieber
Appointed on 1 October 2006

[illegible]

BOARD MEETINGS 1 April 2007 – 31 MARCH 2008							
BOARD MEMBERS	29 May 2007	26 July 2007	30 August 2007	27 September 2007	08 November 2007	19 March 2008	Meetings attended
Dr D G Clarke	Present	Present	Apology	Apology	Present	Present	4
Mr A P Nkuna	Present	Present	Present	Present	Present	Apology	5
Ms T Xaso	Apology	Present	Apology	Present	Apology	Apology	2
Ms T R Mbassa	Apology	Present	Present	Present	Apology	Apology	3
Mr K Hodges	Present	Apology	Present	Apology	Present	Present	4
Mr R W Hieber	Apology	Present	Present	Present	Present	Apology	4

Alternate Members

Ms S Bansi	Not member	Not member	Not member	Not member	Not member	Not member	0
Mr M Smith	Apology	Main member attended	Main member attended	Present	Main member attended	Apology	1
Mr M Riba	Main member attended	Main member attended	Apology	Apology	Main member attended	Main member attended	0

Audit and Risk Committee

The Audit and Risk Committee of the CGS evaluates the annual internal and external audit plans, the internal and external audit reports and the financial statements. The Audit and Risk Committee also assesses the effectiveness of the internal audit function and the risk-mitigation procedures which are in place.

In addition, the Audit and Risk Committee, from time to time, assesses its mandate and charter in order to deal with emerging risks.

The composition of the Audit and Risk Committee as at 31 March 2008 was:

Mr B Hawksworth (Chairperson)

Mr R W Hieber

Ms S J Mbongo

Ms N D Ntombela

Ms N G Jiyane

AUDIT AND RISK COMMITTEE MEETINGS 1 April 2007 – 31 MARCH 2008						
MEMBERS	24 May 2007	18 July 2007	15 August 2007	22 October 2007	22 February 2008	Meetings attended
Mr B Hawksworth	Present	Present	Present	Present	Present	5
Ms N D Ntombela	Apology	Apology	Apology	Apology	Apology	0
Mr R W Hieber	Apology	Present	Present	Present	Present	4
Ms S J Mbongo	Present	Apology	Apology	Apology	Present	2
Ms N G Jiyane	Present	Present	Present	Apology	Present	4

Finance Committee

The Finance Committee of the CGS deals with a range of corporate financial issues of the CGS, such as the recommendation for the approval of the Budget, the recommendation for major capital expenditure, the writing off of bad debts and assets and any other financial matters as are referred to it by the Board for recommendations.

The composition of the Finance Committee as at 31 March 2008 was:

Dr D G Clarke (Chairperson)

Mr M Smith

Ms N D Ntombela

Mr T Ramontja

Ms S Bansi

FINANCE COMMITTEE MEETINGS 1 April 2007 – 31 MARCH 2008				
MEMBERS	24 May 2007	24 October 2007	21 February 2008	Meetings attended
Mr M Smith	Present	Present	Apology	2
Mr T Ramontja	Present	Present	Present	3
Ms S Bansi	Not member	Not member	Not member	0
Ms N D Ntombela	Apology	Present	Apology	1
Dr D G Clarke (Joined 01/06/2007)	Not member	Present	Present	2

Technical Committee

The Technical Committee of the CGS deals with the annual scientific and technical programme of the CGS, evaluates the scientific and technical output, oversees the annual technical audit and recommends on such scientific and technical matters as are referred to it by the Board.

The composition of the Technical Committee as at 31 March 2008 was:

Prof. J M Barton Jr (Chairperson)

Ms S Bansi

Mr K Hodges

Ms T R Mbassa

Dr K Pietersen

Mr T Ramontja

Dr C Gauert

TECHNICAL COMMITTEE MEETINGS 1 April 2007 – 31 MARCH 2008				
MEMBERS	16 May 2007	12 September 2007	21 February 2008	Meetings attended
Mr T Ramontja	Present	Present	Present	3
Prof. J M Barton Jr	Present	Present	Present	3
Dr K Pietersen	Present	Present	Present	3
Mr K Hodges	Apology	Apology	Present	1
Ms T R Mbassa	Apology	Present	Apology	1
Dr C Gauert	Present	Apology	Present	2
Ms S Bansi	Not member	Not member	Not member	0

Personnel, Remuneration and Transformation Committee

The Personnel, Remuneration and Transformation Committee determines the human resources strategies and policies of the CGS. The Committee approves the remuneration structure and salary changes in the CGS and evaluates and makes recommendations on the payment of production bonuses. The Committee also decides upon the remuneration of the Executive Management.

The composition of the Personnel, Remuneration and Transformation Committee as at 31 March 2008 was:

Mr A P Nkuna (Chairperson)

Ms S Bansi

Prof. J M Barton Jr

Mr T Ramontja

Mr L L Makibinyane

Ms N D Ntombela

PERSONNEL, REMUNERATION AND TRANSFORMATION COMMITTEE MEETINGS 1 April 2007 – 31 MARCH 2008					
MEMBERS	16 May 2007	15 August 2007	24 October 2007	21 February 2008	Meetings attended
Mr T Ramontja	Present	Present	Present	Present	4
Prof. J M Barton Jr	Present	Present	Present	Present	4
Ms S Bansi	Not member	Not member	Not member	Not member	0
Mr A P Nkuna	Apology	Apology	Apology	Apology	0
Ms N D Ntombela	Apology	Apology	Present	Apology	1
Mr L L Makibinyane (Joined 01/01/2008)	Not member	Not member	Not member	Present	1

Financial and Operational Factors

Post-balance-sheet events

No material facts or circumstances have arisen, between the date of the balance sheet and the production of this report, which will affect the financial position of the CGS as is reflected in the financial statements.

Major changes in respect of fixed assets

An amount of R3,2m was invested in the acquisition of new fieldwork vehicles. Scientific equipment that was acquired amounted to R17,5m, computer software and hardware to R3m, and R1,2m was invested in a boat for the Marine Geoscience Unit.

Losses Incurred or Recovered

Material losses incurred

The Management Board of the CGS has developed a Materiality and Significance Framework for the CGS. The Board has approved that any expenditure in excess of approximately 1 per cent of the annual operating expenditure budget, which is an amount of R600 000 for 2007/08, and/or the writing off and disposal of any asset in excess of approximately 2 per cent of the value of property and equipment as indicated in the annual financial statements of the year 2006/07, which is an amount of R3,8m individually or in aggregate, would be deemed material and significant. The CGS has thus accepted the above-mentioned threshold figures of materiality for its financial framework.

PERFORMANCE OBJECTIVES

Performance Management Criteria and Performance Targets of the Council for Geoscience

The Council for Geoscience (CGS) has developed a number of measures that are used to evaluate the performance of the organisation against a set of predetermined targets. These measures were designed as a means to evaluate the performance of the CGS with respect to three levels of accountability. These include the measurement of:

- collective scientific and technical output during a specific financial year
- the performance of the different business units
- corporate performance.

The overall evaluation of corporate performance is based on aspects such as business growth, investment into organisational excellence, customer and client relationships, operational best practices, investing in people and stakeholder interaction. All of the above performance targets are set annually by the CGS and are, at the end of the financial year, audited by a team of external auditors.

In line with the strategy developed by the CGS Management, the organisation has adopted a Balanced Scorecard (BSC) approach to its performance measurement. The corporate BSC, which measures the performance of the organisation at corporate, business unit and individual level was approved and accepted by the Management Board of the CGS. The BSC incorporates the current performance measures into the following evaluation perspectives:

- Stakeholder and customer satisfaction
- Economic growth
- Organisational systems
- Scientific excellence and human capital development.

Corporate Performance Targets of the Council for Geoscience

In order to evaluate the corporate performance of the CGS, the organisation has developed a range of performance indicators, which cover the entire spectrum of activities within the CGS. The range of performance indicators, together with the performance targets for the period 2007/08 are summarised in the following table.

Corporate Scorecard for 2007/08			
Market (Stakeholder/Customer) Perspective		To drive stakeholder and customer satisfaction by the development of world-class products and services	
Objectives	Measures	Target 2007/08	Performance 2007/08
To Develop a Stakeholder- and Customer-Focused Organisation	- Status of Annual Technical Programme throughout the Year	On Schedule	On Schedule
	- % Completion of Annual Technical Programme ¹	70%	89,3%
	- Percentage Satisfied Customers	80%	84,6%
Dissemination of Information to Users	- No. of Maps and Publications published	32	32
Promotion of CGS to Stakeholder/ Customer	Number of Transactions per Annum (Invoices) ²	3 700	3 797
To Create Wealth and Ensure Rural and Regional Development	- No. of Small-Scale Mining Initiatives in Progress ³	20	171
	- No. of Rural Development Projects ⁴	20	38
	- No. of Regional and African Development Projects ⁵	10	30
To Develop Strategic Partnerships	- No. of Partners ⁶	18	43
	- No. of Active BEE/HDI Partners ⁷	5	124
Economic/Financial Growth		To achieve sustainable revenue and profit growth	
Objectives	Measures	Target 2007/08	Performance 2007/08
Generate Revenue	- Total Revenue (Rands)	R221m	R222,7m
	- Government Grant	R107,8m	R107,8m
	- Contract Revenue (Rands)	R106,7m	R89,8m
	- Sundry Income	R6,5m	R25,1m
	- Commercial Surplus	R16,2m	R22,5m
	- Ratio of Contract Revenue to Total Revenue	48%	40%
	- Ratio of External Revenue to Total Revenue	51%	52%
Overhead Efficiency	- Ratio of Overheads to Total Cost	53%	52%
	- Ratio of Personnel Cost to Total Cost	61%	55%

Effective Systems (Organisational)		To develop and maintain effective and streamlined processes, using appropriate tools and methodologies	
Objectives	Measures	Target 2007/08	Performance 2007/08
To Develop and Implement Effective Policies and Procedures	- % Policies reviewed, approved and developed	10%	52%
To Drive Preferential Procurement	- Preferential Procurement as a % of Total Procurement	30%	45,6%
To Implement Corporate Planning and Reporting	Regulatory Compliance — PFMA	100%	100%
World-Class People Perspective		To develop a world-class geoscience organisation where our people can grow and perform	
Objectives	Measures	Target 2007/08	Performance 2007/08
To Attract and Retain a Skilled Workforce	- Turnover (Management) ⁸	12%	10%
	- Turnover (Scientists)	12%	16%
	- Turnover (Technical Staff)	12%	7%
To Promote Scientific and Innovation Excellence	- No. of Innovation Projects ⁹	8	30
	- No. of Staff studying ¹⁰	40	63
	- No. of Staff and Students enrolled for MSc and PhD Degrees	23	26
	- No. of Papers and Articles published ¹¹	60	90
	- Proportion of Researchers to Total Staff	40%	41,2%
	- % of Scientific Staff with PhD and MSc Degrees	50%	42,3%
To Build a Positive Organisational Culture	- % Satisfied Staff Members	55%	44,3%
To Reflect and Embrace RSA Diversity	% Overall EE Targets in the CGS (W-B)	60:40	46:54
	% EE Targets Senior Officials and Management (W-A-I-C)	61:33:1:5	57:38:0:5
	% EE Targets Professionals (W-A-I-C)	63:29:5:3	58:36:4:2
	% EE Targets Technicians (W-A-I-C)	46:45:3:6	37:56:0:7
	% EE Targets Administrators (W-A-I-C)	43:33:12:12	26:65:3:6
	% Overall EE Targets by Gender (M-F)	62:38	58:42
	% Overall EE Targets for Disabled People	1%	1,5%
To Build and Maintain External Relations	- No. of Projects with External Collaborators ¹²	30	57
	- No. of Publications with External Collaborators ¹³	21	53

Notes to the Corporate Scorecard

The following notes clarify significant variances between expected targets and observed performance pertaining to operational measures:

1. Percentage completion of Annual Technical Programme

Since 2004, when completion of the CGS Annual Technical Programme (ATP) reached a low of just under 60 per cent, the organisation has introduced measures to improve the output from its statutory programme. Taking into account some back-log issues, the aim is to gradually increase the performance targets. The higher percentage completion of the ATP is attributed to increased monitoring of, and reporting on, the progress of the ATP throughout the year, which is done by means of monthly reporting and an in-depth mid-term review of the programme. These measures have led to the staff having more clarity on and appreciation for the importance of meeting targets, and, more importantly, completing projects defined in the ATP.

2. Number of transactions per annum (invoices)

The amount of invoicing is directly linked to the output of the commercial programme of the CGS and the new customers that are reached by means of the marketing drive. The CGS has grown its commercial venture substantially from just over R24,000,000 in 2004 to over R80,000,000 in the past financial year. The Bookshop and Information Centre of the organisation have also seen an increase in the sale of their products. These factors all contribute to the higher than expected number of transactions.

3. Number of small-scale mining initiatives in progress

The initiatives included under this measure refer to the small-scale mining projects under investigation by the CGS, as approved by the Small-Scale Mining Board (SSMB) of the Department of Minerals and Energy. From 2004 to mid-2006 the total number of small-scale mining projects under investigation was very low (generally fewer than 10); explaining why the target for the 2007/08 financial year was as low as twenty (20). However, with the increase in popularity

of the programme during the 2007 year, a large number of projects were approved by the SSMB.

4. Number of rural development projects

The higher number of rural development projects is mainly attributed to the inclusion of work that the CGS has done on geological map areas in rural regions. The MTEF funding secured at the beginning of the 2007/08 financial year has also contributed to the higher than initially projected number of projects.

5. Number of regional and African development projects

At the time that the initial projections were made for this measure, the CGS was uncertain of a number of initiatives in Africa. Many of these projects have since come to fruition in countries such as Ghana, Gabon, Madagascar, Mauritania and Mozambique. In addition, the CGS has become involved in *AfricaArray*, through which it is participating in seismological projects in many different parts of the continent.

6. Number of partners

The CGS has, through both its commercial and statutory engagements, established partners at a higher rate than had initially been foreseen. During the course of the year, the organisation established more relationships, for instance with the Japanese Institutions of AIST and JOGMEC. The extensive interest in mineral exploration in Africa has turned the CGS into a sought-after partner by, especially, international groups, and it is the effect of this that can now be seen in the performance of the organisation under this measure.

7. Number of active BEE/HDI partners

The performance under this measure is mostly influenced by Small-Scale Mining projects. From 2005 to early 2007, the number of active partners (i.e. those who could be allocated projects at any one time in the commercial Small-Scale Mining projects) was fairly insignificant (hence also modest targets). However, with the introduction of a new procurement process in the CGS, all the partners (110 by the end of the 2007/08 financial year) became active as projects could be allocated to them.

8. Turnover (Management, scientists and technical staff)

The CGS is currently operating in a very turbulent employment market for geoscientists. High commodity prices and the need for finding new mineral targets have resulted in a high demand for geologists and geoscientists. In some instances lucrative salary packages are being offered. It is foreseen that the CGS will find it difficult to attract and retain geoscientists for some years to come, and hence the targets under this measure will remain speculative and the performance uncertain.

9. Number of innovation projects

The higher number of completed innovation projects is ascribed to the drive in promoting innovation. In particular, emphasis is placed on developing projects that have a direct and practical benefit to the South African public. For example, when a project is assessed for inclusion in the ATP, the degree of innovation the project offers is also assessed. In addition, innovative aspects of a project can emerge unexpectedly during the progress of a project.

10. Number of staff studying

With an increased focus on skills development and attaining higher education, the performance under this measure has outstripped the expectation. Initial targets were set with a lower baseline. However, further studies are now actively being promoted and are linked, in many instances, to either statutory or commercial projects.

11. Number of papers and articles published

The higher number of papers is ascribed to the large number of oral presentations made, which form part of conference proceedings. In particular, the CGS did not project in full the effect of some local conferences, which drew a significant amount of interest from its staff and increased the number of papers significantly. The CGS encourages its staff to attend and present scientific findings both nationally and internationally.

12. Number of projects with external collaborators

The higher number of projects with external collaborators is mainly attributed to the shift in scientific enquiry toward more multidisciplinary collaboration. There is also strong interest in collaboration from international scientific partners in view of the often unique and interesting geological features the country has to offer.

13. Number of publications with external collaborators

The increased performance can mostly be attributed to statements made under items 11 and 12. Certain global programmes, such as the International Year of Planet Earth, also increased the number of expected contributions. The increase in the number of staff studying toward MSc and PhD degrees has also contributed to the increased performance under this measure.

REPORT

OF THE AUDIT AND RISK COMMITTEE

Responsibilities

The Management Board of the Council for Geoscience has the overall responsibility to ensure that the organisation has and maintains effective, efficient and transparent systems of risk management and internal controls. The responsibility to ensure the adequacy and effectiveness of these systems is delegated to the Audit and Risk Committee. The Audit and Risk Committee is an advisory committee of the Board, operating as overseer with an independent and objective stance.

The Audit and Risk Committee has adopted formal terms of reference, which have been confirmed by the Board, as its charter, and is satisfied that it has discharged its duties and responsibilities as set out in the Charter. In performing its responsibilities the Audit and Risk Committee has reviewed the following:

- The functioning of the internal control system
- The functioning of the internal audit programme
- The risk areas of the entity's operations to be covered in the scope of the internal and external audits
- The reliability and accuracy of the financial information provided to Management and other users
- The accounting or auditing concerns identified as a result of the internal or external audits

- The entity's compliance with legal and regulatory provisions.

Governance

The Board appointed the following members of the Audit and Risk Committee:

Mr B Hawksworth (Chairperson)

Mr R W Hieber

Ms N G Jiyane

Ms S J Mbongo

Ms N D Ntombela

The Audit and Risk Committee met five times during the period under review.

Internal Control Systems

The members of the Audit and Risk Committee believe that the system of internal controls is adequately designed to cover organisational risks, financial risks and operational risks. The control system provides reasonable, but not absolute, assurance that the organisation's assets are safeguarded, transactions are authorised and recorded properly, and that material errors and irregularities are either prevented or detected timeously. These controls are monitored throughout

the organisation by the Management and employees with the necessary segregation of authority and duties.

The Operational Risk Management Committee, which reports to the Audit and Risk Committee on a quarterly basis, continuously evaluates and monitors the effectiveness of all internal control systems in respect of all areas of risk that have been identified.

Having reviewed the effectiveness of the organisation's system of internal controls, and based on detailed reports provided by the Internal Auditors, the members of the Audit and Risk Committee are not aware of any significant weakness or deficiency in the organisation's system of internal controls.

Internal Auditing

Internal auditing was outsourced during the year under review and provides a supportive role to Management and the Audit and Risk Committee to achieve their objectives by identifying and evaluating significant exposures to risk and contributing to the empowerment of risk management and control systems.

The internal audit function is responsible for independently and objectively evaluating the organisation's system of internal controls at a detailed

level and to bring any significant business risks and exposures to the attention of Management and the Audit and Risk Committee through the provision of comprehensive internal audit reports.

Financial Statements

The Audit and Risk Committee has reviewed and discussed the financial statements of the Council for Geoscience for the year ended 31 March 2008 with the Auditor-General and the Accounting Authority. The Audit and Risk Committee also reviewed the management letter of the Auditor-General and the responses of Management thereto. The members of the Audit and Risk Committee believe that the financial statements comply, in all material respects, to the requirements of the Public Finance Management Act (Act No. 1 of 1999, as amended) and South African Statements of Generally Accepted Accounting Practices (GAAP) and Generally Recognised Accounting Practices (GRAP). The Audit and Risk Committee agrees that the adoption of the going-concern premise is appropriate in preparing the annual financial statements.

The Audit and Risk Committee, at its meeting held on 22 July 2008, recommended the adoption of the annual financial statements by the Board of Directors.

Approved



Mr B Hawksworth

Chairperson: Audit and Risk Committee

31 July 2008

Pretoria

STATEMENT OF FINANCIAL POSITION

AS AT 31 MARCH 2008

	Notes	2008 R'000	2007 R'000
Assets			
Non-current assets			
Property, plant and equipment	2	179,164	161,281
Intangible assets	3	2,731	896
Post-employment benefit assets	4	-	1,062
Current assets		249,398	229,379
Trade and other receivables	5	78,139	72,141
Cash and cash equivalents	6	171,259	157,238
Total assets		431,293	392,618
Net assets and liabilities			
Net assets			
Accumulated surplus		206,520	183,972
Non-current liabilities			
Post-employment benefit liabilities	4	54	-
Government grant	7	94,342	97,098
Current liabilities		130,377	111,548
Trade and other payables	8	24,214	24,745
Deferred income	9	100,947	82,748
Provisions	10	5,216	4,055
Total net assets and liabilities		431,293	392,618

STATEMENT OF FINANCIAL PERFORMANCE

FOR THE YEAR ENDED 31 MARCH 2008

	Notes	2008 R'000	2007 R'000
Revenue	11	200,341	194,510
Cost of contracts	11	(57,391)	(75,787)
Gross surplus		142,950	118,723
Other operating income	11	15,483	5,994
Administrative expenses		(141,608)	(114,017)
Other operating expenses	11	(1,142)	(985)
Interest received	12	6,891	6,562
Surplus from operations		22,574	16,277
Finance cost	13	(26)	(50)
Net surplus for the year		22,548	16,227

STATEMENT OF CHANGES IN NET ASSETS

FOR THE YEAR ENDED 31 MARCH 2008

	Notes	Revaluation reserve R'000	Accumulated surplus R'000	Total R'000
Balance at 31 March 2006		7,430	167,745	175,175
Prior-period error		(7,430)	-	(7,430)
Net surplus for the year		-	16,227	16,227
Balance at 31 March 2007		-	183,972	183,972
Net surplus for the year		-	22,548	22,548
Balance at 31 March 2008		-	206,520	206,520

CASH FLOW STATEMENT

FOR THE YEAR ENDED 31 MARCH 2008

	Notes	2008 R'000	2007 R'000
Cash inflow from operating activities		45,247	27,741
Cash receipts from customers		191,587	165,340
Cash paid to suppliers and employees		(153,205)	(144,111)
Cash generated from operations	14	38,382	21,229
Interest received	12	6,891	6,562
Finance cost	13	(26)	(50)
Cash outflow from investing activities		(31,226)	(15,344)
Acquisition of:			
Property, plant and equipment	15.1	(29,012)	(14,509)
Intangible assets	15.2	(2,221)	(835)
Proceeds on disposal of property and equipment		7	-
Net increase in cash and cash equivalents		14,021	12,397
Cash and cash equivalents at beginning of year	6	157,238	144,841
Cash and cash equivalents at end of year	6	171,259	157,238

VALUE ADDED STATEMENT

FOR THE YEAR ENDED 31 MARCH 2008

	2008 R'000	% Value added	2007 R'000	% Value added
Value added				
Government Grant - Core funding	107,755	75.1%	93,100	70.9%
Government Grant - Earmarked funding	-	0.0%	265	0.2%
Government grant recognised	2,756	1.9%	2,849	2.2%
Contracting revenue	89,070	62.0%	97,701	74.4%
Publication revenue	760	0.4%	595	0.5%
Revenue	200,341	139.5%	194,510	148.1%
Paid to suppliers for material and services	(79,148)	(55.1%)	(75,739)	(57.7%)
Interest earned	6,891	4.8%	6,562	5.0%
Other income	15,483	10.8%	5,994	4.6%
	<u>143,567</u>	<u>100.0%</u>	<u>131,327</u>	<u>100.0%</u>

Distributed as follows -	% Distributed		% Distributed	
Employees	107,910	75.2%	100,040	76.2%
- Staff costs	95,807	66.7%	83,433	63.5%
- Employer contributions	8,538	5.9%	13,910	10.6%
- Bursary and training	3,565	2.5%	2,697	2.1%
Finance cost	26	-	50	-
Central and Local Government	1,596	1.1%	1,548	1.2%
Retention for expansion and growth	34,035	23.7%	29,689	22.6%
- Depreciation	11,101	7.7%	12,207	9.3%
- Amortisation	386	0.3%	1,255	1.0%
- Retained surplus for the year	22,548	15.6%	16,227	12.4%
	<u>143,567</u>	<u>100.0%</u>	<u>131,327</u>	<u>100.0%</u>

Value added ratios

- Number of employees		335		319
- Revenue per employee	R	598	R	610
- Wealth created per employees	R	429	R	412

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

1 Accounting policies

1.1 Basis of preparation

The financial statements have been prepared in accordance with the South African Statements of Generally Accepted Accounting Practices (GAAP) including any interpretations of such statements issued by the Accounting Practices Board, with the effective Standards of Generally Recognised Accounting Practices (GRAP) issued by the Accounting Standards Board replacing the equivalent GAAP statement as follows:

Standard of GRAP	Replaced statement of GAAP
GRAP 1: Presentation of financial statements	AC101: Presentation of financial statements
GRAP 2: Cash flow statements	AC118: Cash flow statements
GRAP 3: Accounting policies, changes in accounting estimates and errors	AC103: Accounting policies, changes in accounting estimates and errors

Currently recognition and measurement principles in the above GRAP and GAAP statements do not differ or result in material differences in items presented and disclosed in the financial statements. The implementation of GRAP 1, 2 and 3 has resulted in the following changes in the presentation of the financial statements:

1. Terminology differences:

Standard of GRAP	Replaced statement of GAAP
Statement of financial performance	Income statement
Statement of financial position	Balance sheet
Statement of changes in net assets	Statement of changes in equity
Net assets	Equity
Surplus/deficit for the period	Profit/loss for the period
Accumulated surplus/deficit	Retained earnings
Contributions from owners	Share capital
Distributions to owners	Dividends

2. The cash flow statement can only be prepared in accordance with the direct method.
3. Specific information has been presented separately on the statement of financial position such as:
 - (a) receivables from non-exchange transactions, including taxes and transfers;
 - (b) taxes and transfers payable;
 - (c) trade and other payables from non-exchange transactions.
4. The amount and nature of any restrictions on cash balances are required to be disclosed.
5. The financial statements are prepared in accordance with the going concern principle under the historical cost basis except for financial instruments which are presented at fair values.

Paragraphs 11–15 of GRAP 1 have not been implemented due to the fact that the budget reporting standard has not been developed by the local standard setters and the international standard is not effective for the current financial year. Although the inclusion of budget information would enhance the usefulness of the financial statements, non-disclosure will not affect the objective of the financial statements.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

1 Accounting policies (continued)

1.2 Revenue recognition

Revenue comprises the annual government grant recognised as income in the current year, contract income and sales of publications.

1.2.1 Recognition of income

The Council for Geoscience measures revenue at the fair value of the consideration received or receivable. Revenue is recognised only when it is probable that the economic benefits associated with a transaction will flow to the Council for Geoscience, and the amount of revenue and associated costs incurred or to be incurred, can be measured reliably.

1.2.2 Government grant

The Council for Geoscience received grants in the form of assets and baseline allocation from government departments.

Government grants are recorded as deferred income when they become receivable and are then recognised as income on a systematic basis over the period necessary to match the grants with the related costs which they are intended to compensate. The conditions for the use of each grant are stated in contractual agreements. Government refers to government, government agencies and similar bodies whether local, national or international.

1.2.3 Recognition of income from contracts

Revenue from contracts represents the invoiced value of goods supplied by the Council for Geoscience. Income from contracts is recognised by means of progress payments over the duration of the contracts. Income for contracts in progress is recognised when it can be invoiced. When the outcome of a contract can be estimated reliably, revenue is recognised by reference to the stage of completion of the contract activity.

1.3 Interest received

Interest is recognised on a time proportionate basis with reference to the principal amount receivable and the effective interest rate applicable.

1.4 Property, plant and equipment

The cost of an item of fixed assets is recognised as an asset when:

- it is probable that future economic benefits associated with the item will flow to the company;
- and
- the cost of the item can be measured reliably.

Costs include costs incurred initially to acquire or construct an item of fixed assets and costs incurred subsequently to add to, replace part of, or service it. If a replacement cost is recognised in the carrying amount of an item of fixed assets, the carrying amount of the replaced part is derecognised.

Day to day expenses incurred on property, plant and equipment are expensed directly in profit and loss for the period. Major maintenance that meets the recognition criteria is capitalised.

Fixed assets are carried at cost less accumulated depreciation and any impairment losses.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

1 Accounting policies (continued)

Depreciation is provided on all fixed assets other than freehold land, to write down the cost, less residual value, by equal instalments over their useful lives as follows:

Land	Not depreciable
Buildings	30 years
Motor vehicles	5–8 years
Equipment	5–7 years
Aircraft - Body	10 years
Aircraft - Engine	Useful hours
Aircraft - Propeller	Useful hours
Office furniture	20 years
Computer equipment	8 years

The depreciation charges for each period is recognised in profit or loss, unless it is included in the carrying amount of another asset.

The useful lives and residual values are reviewed on an annual basis and changes are reflected as change in accounting estimates on a prospective basis.

1.5 Intangible assets

An intangible asset is recognised when:

- it is probable that the expected future economic benefits that are attributable to the asset will flow to the entity; and
- the cost of the asset can be measured reliably.

Capitalised computer software is carried at cost less accumulated amortisation and less accumulated impairment losses. Computer software is tested annually for impairment or changes in estimated future benefits. Amortisation is provided to write down the intangible assets to their residual, on a straight-line basis, being two and five years.

1.6 Translation of foreign currencies

Foreign currency transactions

A foreign currency transaction is recorded, on initial recognition in Rands, by applying to the foreign currency amount the spot exchange rate between the functional currency and the foreign currency at the date of the transaction.

At each balance sheet date:

- foreign currency monetary items are translated using the closing rate.

Exchange differences arising on the settlement of monetary items or on translating monetary items at rates different from those at which they were translated on initial recognition during the period or in previous annual financial statements are recognised in profit or loss in the period in which they arise.

Cash flows arising from transactions in a foreign currency are recorded in Rands by applying to the foreign currency amount the exchange rate between the Rand and the foreign currency at the date of the cash flow.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

1 Accounting policies (continued)

1.7 Research and development

Expenditure on research activities is recognised as an expense in the period in which it is incurred.

An internally generated intangible asset arising from research and development is recognised only if all of the following conditions are met:

- An asset is created that can be identified;
- It is probable that the asset created will generate future economic benefits;
- The development cost of the asset can be measured reliably;
- It is technically feasible to complete the intangible asset so that it will be available for use or sale;
- The ability to use or sell the intangible asset; and
- It is the intention to complete the intangible asset so that it will be available for use or sale.

Where no internally generated intangible asset can be recognised, development expenditure is recognised as an expense in the period in which it is incurred. Internally generated assets are amortised on a straight-line basis over their useful lives.

1.8 Deferred income

Deferred income is recognised using the accrual basis and is accounted for in the statement of financial performance in the period in which it satisfies the recognition criteria to be recognised as revenue.

1.9 Retirement benefit costs

Short-term employee benefits

The cost of short-term employee benefits (those payable within 12 months after the service is rendered, such as bonuses, paid vacation leave and sick leave), is recognised in the period in which the service is rendered and is not discounted.

The expected cost of compensated absences is recognised as an expense as the employees render services that increase their entitlement or, in the case of non-accumulating absences, when the absence occurs.

Defined contribution plans

The Council for Geoscience operates both a defined-contribution pension and provident fund and a defined benefit plan in respect of post-retirement medical-aid contributions. For the defined benefit plan, the defined benefit obligation and the related current service, cost is determined by using the projected unit credit method. The defined benefit plan is subject to an annual actuarial valuation.

A portion of the actuarial gains and losses is to be recognised as income or expense, provided the net cumulative actuarial gains and losses at the end of the previous reporting period exceeds the greater of-

- 10% of the present value of the defined benefit obligation at that date, or
- 10% of the fair value of any plan assets at that date.

The portion of actuarial gains and losses to be recognised is equal to the excess calculated using the above limits, divided by the expected average remaining working lives of the employees participating in the plan.

The actuarial gains or losses are further limited to the extent that the net cumulative unrecognised actuarial gains or losses (before recognition of that actuarial gain or loss) exceeds the unrecognised part of the transactional liability. Payments to defined-contribution retirement benefit plans are charged to the statement of financial performance in the year to which they relate.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

1 Accounting policies (continued)

1.10 Provisions

Provisions are recognised when:

- the entity has a present obligation as a result of a past event;
- it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation; and
- a reliable estimate can be made of the obligation.

The amount of a provision is the present value of the expenditure expected to be required to settle the obligation.

1.11 Financial instruments

Initial recognition

The entity classifies financial instruments, or their component parts, on initial recognition as a financial asset, a financial liability or an equity instrument in accordance with the substance of the contractual arrangement.

Financial assets and liabilities are recognised on the entity's balance sheet when the company becomes party to the contractual provisions of the instrument.

Financial assets and liabilities are recognised initially at fair value.

Gains and losses

A gain or a loss arising from a change in a financial asset or financial liability classified as at fair value through profit or loss is recognised in profit or loss.

Derecognition of financial instruments

The entity derecognises a financial asset only when the contractual rights to the cash flows from the asset expire; or it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another entity.

The entity derecognises financial liabilities when, and only when, the entity's obligations are discharged, cancelled or they expire.

Impairment of financial assets

Financial assets are assessed for indicators of impairment at each balance sheet date. Financial assets are impaired where there is objective evidence that, as a result of one or more events that occurred after the initial recognition of the financial asset, the estimated future cash flows of the investment have been impacted.

The carrying amount of trade receivables is reduced through the use of an allowance account (bad debt provision). When a trade receivable is considered uncollectible, it is written off against the allowance account. Subsequent recoveries of amounts previously written off are credited against the allowance account. Changes in the carrying amount of the allowance account are recognised in profit or loss.

Trade and other receivables

Loans and receivables are measured at amortised cost less any impairment losses recognised to reflect irrecoverable amounts. Impairment is determined on a specific basis, whereby each asset is individually evaluated for impairment indicators. Write-offs of these assets are expensed in profit or loss.

Cash and cash equivalents

Cash and cash equivalents are short-term, highly liquid investments that are readily convertible to known amounts of cash. Cash and cash equivalents are measured at fair value.

Trade and other payables

Trade and other payables are classified as other financial liabilities.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

1 Accounting policies (continued)

1.12 Operating leases

Leases of assets under which all the risks and rewards of ownership are effectively retained by the lessor are classified as operating leases. Lease payments under an operating lease are recognised as an expense on a straight-line basis over the lease term.

Any contingent rents are expensed in the period they are incurred.

1.13 Impairment

The entity assesses at each balance sheet date whether there is any indication that an asset may be impaired. If any such indication exists, the entity estimates the recoverable amount of the asset. If there is any indication that an asset may be impaired, the recoverable amount is estimated for the individual asset. The recoverable amount of an asset is the higher of fair value less costs to sell and its value in use.

If the recoverable amount of an asset is less than its carrying amount, the carrying amount of the asset is reduced to its recoverable amount. This reduction is an impairment loss. An impairment loss of an asset carried at cost less any accumulated depreciation or amortisation is recognised immediately in profit or loss.

The entity assesses at each reporting date whether there is any indication of an impairment loss recognised in prior periods for assets that no longer exist or may have decreased. If any such indication exists, the recoverable amounts of those assets are estimated. The increase in the carrying amount of an asset attributable to a reversal of an impairment loss does not exceed the carrying amount that would have been determined had no impairment loss been recognised for the asset in prior periods. A reversal of an impairment loss of assets carried at cost less accumulated depreciation or amortisation is recognised immediately in profit or loss.

1.14 Critical accounting estimates and judgements

Provision for bad debts

Past experience indicates a reduced prospect of collecting debtors over the age of two years. Debtors balances older than two years are regularly assessed by Management and provided for at their discretion.

Provisions

Provisions were raised and Management determined an estimate based on information available.

Property, plant and equipment

Management has made certain estimations with regards to the determination of estimated useful lives and residual values of items of property, plant and equipment.

Leases

Management has applied its judgement to classify all lease agreements that the entity is party to as operating leases, as they do not transfer substantially all risks and rewards to the entity. Furthermore, since the operating lease in respect of premises is only for a relatively short period of time, Management has made a judgement that it would not be meaningful to classify the lease into separate components for the land and for the buildings of EVN Africa's current lease, and the agreement will be classified in its entirety as an operating lease.

1.15 Sources of estimation uncertainty

There are no key assumptions concerning the future and other key sources of estimation uncertainty at the balance sheet date that could have a significant risk of causing material adjustment to the carrying amounts of assets and liabilities within the next financial year.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

2. Property, plant and equipment

2008	Land	Buildings	Equipment	Office furniture	Aircraft and boat	Motor vehicles	Computer equipment	Total
	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
Gross carrying amount	18,231	113,224	67,261	250	14,460	9,210	14,279	236,915
Accumulated depreciation at the beginning of the year	-	(5,550)	(49,597)	(146)	(3,301)	(5,990)	(11,050)	(75,634)
Opening net carrying amount at 31 March 2007	18,231	107,674	17,664	104	11,159	3,220	3,229	161,281
Movements during the year:								
Acquisitions	-	2,154	17,560	1,486	1,479	3,298	3,035	29,012
Disposals	-	-	-	-	(28)	-	-	(28)
Depreciation	-	(3,773)	(4,169)	(31)	(1,578)	(714)	(836)	(11,101)
Closing net carrying amount at 31 March 2008	18,231	106,055	31,055	1,559	11,032	5,804	5,428	179,164
Gross carrying amount	18,231	115,378	84,821	1,713	15,866	12,508	17,337	265,854
Accumulated depreciation	-	(9,323)	(53,766)	(154)	(4,834)	(6,704)	(11,909)	(86,690)

Property, plant and equipment (continued)

2007	Land	Buildings	Equipment	Office furniture	Aircraft	Motor vehicles	Computer equipment	Total
	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
Gross carrying amount	3,081	32,362	64,431	12,548	13,493	6,543	14,971	147,429
Accumulated depreciation at the beginning of the year	-	(4,472)	(46,778)	(10,011)	(1,760)	(5,890)	(11,539)	(80,450)
Opening net carrying amount at 31 March 2006	3,081	27,890	17,653	2,537	11,733	653	3,432	66,979
Movements during the year:								
Acquisitions	-	249	8,034	13	967	2,738	2,508	14,509
Acquired through government grant	15,150	80,613	-	-	-	-	-	95,763
Disposals	-	-	(866)	(2,426)	-	(12)	(459)	(3,763)
Depreciation	-	(1,078)	(7,157)	(20)	(1,541)	(159)	(2,252)	(12,207)
Closing net carrying amount at 31 March 2007	18,231	107,674	17,664	104	11,159	3,220	3,229	161,281
Gross carrying amount	18,231	113,224	67,261	250	14,460	9,210	14,279	236,915
Accumulated depreciation	-	(5,550)	(49,597)	(146)	(3,301)	(5,990)	(11,050)	(75,634)

The transfer of the following land and buildings as stipulated under section 26 of the Geoscience Act (Act No. 100 of 1993) has not yet been completed.

The Council for Geoscience is currently awaiting the transfer of the Head Office building in Pretoria from the Department of Public Works to the Council for Geoscience.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

	2008 R'000	2007 R'000
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2 Property, plant and equipment (continued)

Location	Fair value
280 Pretoria Street, Silverton, Pretoria	R 94,000,000
474 Carl Street, Town Lands 351JR, Pretoria West	R 2,800,000
Portion of stand 110, 21 Schoeman Street, Polokwane	R 350,000

The fair value of these properties has been included in the carrying amount of land and buildings as at 31 March 2008.

Details regarding land and buildings are kept at the Council for Geoscience head office and will be supplied upon written request.

3 Intangible assets

Computer software

Gross carrying amount	4,844	4,670
Accumulated amortisation	(3,948)	(3,253)
Opening net carrying amount at 31 March	896	1,417
Movements during the year:		
Acquisitions	2,221	835
Disposals	-	(101)
Amortisation	(386)	(1,255)
Closing net carrying amount at 31 March	2,731	896
Gross carrying amount	7,065	4,844
Accumulated amortisation	(4,334)	(3,948)

4 Retirement benefit

4.1 Medical-aid scheme

The Council for Geoscience has made provision for the medical-aid scheme covering substantially all employees. All eligible employees are members of the defined benefit scheme administered by the Council for Geoscience. The assets of these scheme are held in administered trust funds separated from the Council's assets. Scheme assets primarily consist of listed shares, property trust units and fixed-income securities.

The defined benefit scheme administered by the Council for Geoscience is valued actuarially using the projected unit credit method. The scheme was last actuarially valued during the year ended 31 March 2008. At that time the scheme was certified by the reporting actuary as being in a sound financial position. In arriving at his conclusion, the actuary took into account the following assumptions at reporting date (expressed as weighted averages):

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

	2008 R'000	2007 R'000
4 Retirement benefit (continued)		
Key assumptions		
Discount rate	9.37%	8.25%
Expected return on plan assets	9.37%	8.25%
Future salary increases	N/A	N/A
Medical inflation rate	8.12%	6.75%
The actual return on plan assets are:		
Expected return on plan assets	2,600	2,217
Actuarial gain on plan assets	229	1,890
Actual return on plan assets	<u>2,829</u>	<u>4,107</u>
The amount included in the statement of financial position arising from the Council for Geoscience's obligation in respect of the post-retirement medical-aid contributions to staff members is as follows:		
Present value of fund obligations	34,608	28,618
Fair value of plan assets	(33,115)	(31,277)
Unrecognised actuarial loss/(gain)	(1,439)	1,597
Asset recognised in the statement of financial position	<u>54</u>	<u>(1,062)</u>
Movements in the net liability in the current period were as follows:		
Net liability at the beginning of the year	(1,062)	(5,200)
Amounts charged to income	1,116	4,138
Net asset at the end of the year	<u>54</u>	<u>(1,062)</u>
Present value of the obligation at 1 April	28,618	20,919
Interest cost	2,341	1,654
Current service cost	1,375	994
Benefits paid	(525)	(499)
Actuarial (gain)/loss obligation	2,799	5,550
Present value of obligation at 31 March	<u>34,608</u>	<u>28,618</u>
Fair value of plan assets at 1 April	31,277	27,715
Expected return on plan assets	2,600	2,217
Benefits paid	(525)	(499)
Actuarial gain/(loss) on plan assets	(237)	1,844
Fair value of plan assets at 31 March	<u>33,115</u>	<u>31,277</u>
Fair value of obligation	34,608	28,618
Unrecognised actuarial gain/(loss)	(1,439)	1,597
Fair value of assets	(33,115)	(31,277)
Fair value of assets	<u>54</u>	<u>(1,062)</u>

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

	2008 R'000	2007 R'000
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4 Retirement benefit (continued)

4.2 Pension and Provident Fund benefits

The Council for Geoscience and its employees contribute to a defined contribution plan. The assets of the scheme are held separately from the Council for Geoscience in funds under the control of trustees. The total cost charged to income of R5,188,295 (2007: R4,209,919) represents equal contributions of 7.5% by the employer and employee.

5 Trade and other receivables

Trade receivables	32,018	18,252
Trade receivables - Retention	4,775	853
Contract customers	35,079	52,210
Other receivables	6,780	1,682
Prepaid expenses	312	429
Personnel debt	88	30
	<u>79,052</u>	<u>73,456</u>
Less - Provision for bad debts	(913)	(1,315)
	<u>78,139</u>	<u>72,141</u>

Fair value of trade and other receivables

Fair values of trade and other receivables are determined at a price charged at transaction date and impaired when indicators of impairment are present. At year end there were no differences between the book value and the fair values of trade and other receivables because of the short-term maturity.

6 Cash and cash equivalents

Cash and cash equivalents at the end of the year are represented by the following balances:

Cash at bank	32,883	15,524
Call accounts	138,376	141,714
Cash and cash equivalents at the end of the period	<u>171,259</u>	<u>157,238</u>

There is no difference between the fair value of cash and cash equivalents and their book value.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

	2008 R'000	2007 R'000
7 Government grant		
Carrying amount at the beginning of year	97,098	7,430
Disposals	-	(3,246)
Recognised as income	(2,756)	(2,849)
Acquired through government grant	-	95,763
Carrying amount at the end of year	<u>94,342</u>	<u>97,098</u>
8 Trade and other payables		
Trade payables	11,341	7,996
Advance clients' billing	-	232
Advance European Commission	-	6,797
Other payables	12,873	9,720
	<u>24,214</u>	<u>24,745</u>
9 Deferred income		
Deferred income arising as a result of an agreement entered into with the Department of Minerals and Energy to develop and implement various measures to mitigate the effect of mining-induced contamination of the groundwater in the Witwatersrand area. A.		
Carrying amount at the beginning of year	4,491	4,841
Amounts received	1,941	4,600
Interest earned	536	407
Amounts used during the year	-	(5,357)
Carrying amount at the end of year	<u>6,968</u>	<u>4,491</u>
Deferred income arising as a result of an agreement entered into with the Department of Minerals and Energy to develop and implement Small-Scale Mining programmes.		
Carrying amount at the beginning of year	40,477	19,518
Amounts received	22,889	21,799
Amounts used during the year	(10,897)	(2,236)
Interest earned	3,224	1,396
Carrying amount at the end of year	<u>55,693</u>	<u>40,477</u>
Deferred income arising as a result of an agreement entered into with the Department of Minerals and Energy to develop and implement the closing of mine holes.		

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

	2008 R'000	2007 R'000
9 Deferred income (continued)		
Carrying amount at the beginning of year	19,661	28,614
Amounts used during the year	(11,674)	(10,466)
Interest earned	955	1,513
Carrying amount at the end of year	8,942	19,661
Deferred income arising as a result of a contract entered into with the Lesotho ARF project.		
Carrying amount at the beginning of year	351	709
Amounts used during the year	(298)	(358)
Carrying amount at the end of year	53	351
Deferred income arising as a result of an agreement with the Department of Minerals and Energy in terms of the Sustainable Development Through Mining project.		
Carrying amount at the beginning of year	12,581	8,050
Amounts received	8,000	9,300
Amounts used during the year	(11,854)	(5,356)
Interest earned	353	587
Carrying amount at the end of year	9,080	12,581
Deferred income arising as a result of an agreement with the Department of Science and Technology in terms of the Madagascar Geological Mapping project.		
Carrying amount at the beginning of year	2,840	3,345
Amounts received	479	1,958
Amounts used during the year	(1,890)	(2,717)
Interest earned	159	254
Carrying amount at the end of year	1,588	2,840
Deferred income arising as a result of an agreement with the Department of Provincial and Local Government to establish a South African Tsunami Early Warning System.		
Carrying amount at the beginning of year	1,523	1,950
Amounts used during the year	(251)	(427)
Carrying amount at the end of year	1,272	1,523

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

	2008 R'000	2007 R'000
9 Deferred income (continued)		
Deferred income arising as a result of an agreement with the National Research Foundation and Norway Research Cooperation Programme for research in environmental analytical chemistry.		
Amounts received	215	-
Carrying amount at the end of year	215	-
Deferred income arising as a result of an agreement with the Department of Science and Technology to study the Witwatersrand Central Basin mine water apportionment.		
Amounts received	1,386	-
Carrying amount at the end of year	1,386	-
Deferred income arising as a result of an agreement entered into with the Department of Minerals and Energy to develop and implement various measures to mitigate the effect of mining-induced contamination of the groundwater in the Witwatersrand area. B.		
Amounts received	14,867	-
Interest earned	519	-
Carrying amount at the end of year	15,386	-
Deferred income arising as a result of an agreement with the Department of Science and Technology to establish an international collaboration research project on the Karoo sequences in South Africa, Botswana and Namibia.		
Carrying amount at the beginning of year	824	1,195
Amounts used during the year	(460)	(371)
Carrying amount at the end of year	364	824
	<u>100,947</u>	<u>82,748</u>

10 Provisions

Provision for leave pay

Carrying amount at the beginning of year	4,055	2,357
Provision current year	1,803	2,069
Amounts used during the current year	(642)	(371)
Carrying amount at the end of year	<u>5,216</u>	<u>4,055</u>

The leave pay provision relates to the estimated liabilities as a result of leave days due to employees.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

	2008 R'000	2007 R'000
11 Surplus from operations		
Operating surplus is arrived at after taking the following items into account:		
Revenue		
Government grant - core funding	107,755	93,100
Earmarked funding	-	265
Government grant recognised	2,756	2,849
Contracting revenue	89,070	97,701
Publication revenue	760	595
	<u>200,341</u>	<u>194,510</u>
Cost of contracts		
Direct cost	38,746	53,020
Personnel expenditure	18,645	22,767
	<u>57,391</u>	<u>75,787</u>
Other operating income		
Foreign currency gains	14,167	5,262
Sundry income	1,316	732
	<u>15,483</u>	<u>5,994</u>
Administrative expenses include -		
Audit remuneration	948	621
Audit fees		
- Current year	139	32
- Prior year	508	363
- Internal audit	207	226
- Fee for other services	94	-
Bad debts written off	-	121
Provision for bad debts	(402)	(5,455)
Depreciation - on owned assets	11,101	12,207
- Buildings	3,773	1,078
- Equipment	4,169	7,157
- Office furniture	31	20
- Motor vehicles	714	159
- Aircraft	1,578	1,541
- Computer equipment	836	2,252
Amortisation - intangible assets		
- Computer software	386	1,255

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

	2008 R'000	2007 R'000
11 Surplus from operations (continued)		
Rentals in respect of operating leases		
- Land and buildings	341	322
- Photocopying machines	1,235	1,298
Other operating expenses		
Net loss on disposal of equipment	28	618
Foreign currency losses	1,114	367
	1,142	985
Staff costs	110,736	102,411
Included in staff costs are:		
Defined benefit plan expense for the post-retirement medical-aid fund	1,116	4,138
Current service cost	1,375	994
Interest cost	2,341	1,654
Expected return on plan assets	(2,600)	(2,217)
Recognised actuarial loss	-	3,707
- Defined contribution plan expenses for the Pension and Provident Funds	5,188	4,210
Irregular expenditure		
Bids awarded without valid tax clearance certificates	1,957	-
	1,957	-

Tenders were awarded to sole suppliers without valid Tax Clearance Certificates. This was caused by an error in the procurement procedure of sole suppliers. There was no intention to unduly award tenders and there was no financial loss incurred. The sole supplier procedure has been revised and now includes a checklist document with Tax Clearance Certificates.

Emoluments

Senior Management	2007/2008				Total R
	Pensionable salary R	Provident Fund contributions R	Performance bonus R	Other contributions R	
Ramontja T	964,973	75,057	149,634	250,173	1,439,837
Matsepe L D	537,397	41,800	93,141	131,094	803,432
Ramagwede L F	720,109	56,011	115,386	185,683	1,077,189
Graham G	720,109	56,011	107,604	175,602	1,059,326
Zawada P K	724,020	56,012	85,609	178,765	1,044,406

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

				2008 R'000	2007 R'000	
11	Surplus from operations (continued)					
			2006/2007			
	Pensionable salary	Provident Fund contributions	Performance bonus	Other contributions	Total	
	R	R	R	R	R	
	Ramontja T	787,690	63,615	144,510	300,478	1,296,293
	Matsepe L D	367,265	33,913	77,858	213,908	692,944
	Ramagwede L F	550,761	49,047	81,987	285,468	967,263
	Graham G	635,660	49,047	114,484	202,031	1,001,222
	Zawada P K	657,837	47,687	107,329	157,160	970,013
	Management Board member - T. Ramontja Performance bonus was introduced in 2006/2007					
				2008 R	2007 R	
	Management Board Emoluments					
	Non-executive Board Members					
	Ngoepe P E			71,442	76,733	
	Nkuna A P			15,720	19,650	
	Barton J M Jr			60,624	63,114	
	Makibinyane L L			-	44,948	
	Mollo J K			-	39,300	
	Xaso T			3,930	31,440	
				151,716	275,185	
	Details regarding Management Board members service contracts:					
	Management Board members representing government departments are not included above as they received no emoluments.					
	The current term of office of the non-executive Management Board members expires on 30 September 2009.					
12	Interest received					
	Interest received					
	- Interest income on call accounts			5,733	5,821	
	- Interest income on current accounts			1,158	741	
				6,891	6,562	
13	Finance cost					
	Interest					
				26	50	

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

	2008 R'000	2007 R'000
14 Reconciliation of net surplus for the year to cash generated from operations		
Net surplus for the year	22,548	16,227
Adjustments for -		
Interest	26	50
Depreciation on property and equipment	11,101	12,207
Amortisation - intangible assets	386	1,255
Government grant recognised	(2,756)	(2,849)
(Net proceeds) on disposal of fixed assets	(7)	-
Net loss on disposal of fixed assets	28	618
Increase in provision for bad debts	(402)	(5,456)
Interest earned	(6,891)	(6,562)
Provision for post-retirement medical-aid benefits	1,116	4,138
Operating cash flows before working capital changes	25,149	19,628
Working capital changes -		
Increase in provision for accumulated leave pay	1,161	1,698
(Increase) in trade and other receivables	(5,596)	(20,865)
(Decrease)/increase in trade and other payables	(531)	6,242
Increase in deferred income	18,199	14,526
Cash generated from operations	38,382	21,229
15 Acquisition of:		
15.1 Property, plant and equipment		
Land and buildings	2,154	249
Equipment	17,560	8,034
Office furniture	1,486	13
Aircraft and boat	1,479	967
Motor vehicles	3,298	2,738
Computer equipment	3,035	2,508
	29,012	14,509
15.2 Intangible assets		
Computer software	2,221	835
16 Contingent liability		
Performance bonds and bid bonds issued for contract work to various financial institutions	20,861	15,669

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

	2008 R'000	2007 R'000
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17 Taxation

No provision for income tax was made as the Council for Geoscience is exempted in terms of section 10(1)(Ca)(i) of the Income Tax Act.

18 Operating lease commitments

18.1 EVN Africa

At the reporting date, the outstanding commitments under non-cancellable operating leases which fall due, are as follows:

Up to 1 year	295	270
2 to 5 years	-	-
Total lease commitments	<u>295</u>	<u>270</u>

The Council for Geoscience is leasing office premises from EVN Africa for a period of 1 year with an extension option, effective from 1 April 2008. The average lease payments are R24,766 (vat inclusive) per month.

18.2 Minolta South Africa

At the reporting date, the outstanding commitments under non-cancellable operating leases which fall due, are as follows:

Up to 1 year	711	1,066
2 to 5 years	-	711
Total lease commitments	<u>711</u>	<u>1,777</u>

The CGS entered into a non-cancellable operating lease on 1 December 2005 with Minolta South Africa for the rental of photocopying machines. The minimum monthly lease payment is R88,852 for a 3-year period ending 30 November 2008. Fixed minimum rental paid to Minolta is R1,066,219 (vat inclusive) and contingent rental is R168,710 (vat inclusive).

Contingent rentals are determined as follows:

Black and white copies between 0 and 146,000 are charged at 33,06 cents (vat inclusive) per copy and colour copies between 0 and 20,000 are charged at 203 cents (vat inclusive) per copy.

Black and white copies between 146,001 and 999,999 are charged at 10,03 cents (vat inclusive) per copy and colour copies between 146,001 and 999,999 are charged at 70,63 cents (vat inclusive) per copy.

19 Financial instruments

Financial instruments consist of cash and cash equivalents, investments with financial institutions, trade and other receivables, and trade and other payables.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

2008	2007
R'000	R'000

19 Financial instruments (continued)

19.1 Credit risk

Financial assets, which potentially subject the Council for Geoscience to concentrations of credit risk, consist principally of cash, short-term deposits and trade receivables. The Council for Geoscience's cash equivalents and short-term deposits are placed with high credit quality financial institutions. Trade receivables are presented net of the allowance for doubtful debts. Credit risk with respect to trade receivables is limited due to the large number of customers being dispersed across different industries and geographical areas. Accordingly, the Council for Geoscience has no significant concentration of credit risk.

The carrying amounts of financial assets included in the statement of financial position represent the Council for Geoscience's exposure to credit risk in relation to those assets.

Trade and other receivables are controlled by well established policies and procedures which are reviewed and updated on an ongoing basis. The Council for Geoscience does not have any significant exposure to any individual customer or counterparty.

19.2 Interest rate risk

The company's exposure to interest rate risk and the effective interest rates on the financial instruments at reporting date are:
31 March 2008

	Weighted average effective interest rate %	Weighted average effective interest rate %
Assets		
Cash	9.63%	6.41%
Call accounts	8.30%	7.85%

Investments

The risk is perceived to be low due to the following factors:

- Funds are only invested with approved financial institutions according to the policy of the Council for Geoscience as was approved by the Management Board.
- Investments are only reinvested or invested with Executive Management approval.

19.3 Foreign currency risk

The Council for Geoscience undertakes certain transactions denominated in foreign currencies, hence exposures to exchange rate fluctuations arise. It is not policy for the Council for Geoscience to take out cover on these outstanding foreign currency transactions due to the fact that these transactions take place on an ad-hoc basis. The Council for Geoscience exposure at 31 March 2008 is disclosed in note 21.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

	2008 R'000	2007 R'000
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19 Financial instruments (continued)

19.4 Airborne operations risk

Risk in respect of the airborne operations of the Council for Geoscience has been identified and transferred to a third party.

19.5 Fair value of financial instruments

At 31 March 2008 the carrying amounts of cash and short-term investments, accounts receivable, accounts payable approximate their fair values due to the short-term maturities of these assets and liabilities. The net fair value of the Council for Geoscience assets and liabilities are stated below -

Assets

Cash and cash equivalents	171,259	157,238
Trade and other receivables	78,139	72,141

Liabilities

Trade and other payables	24,214	24,745
--------------------------	--------	--------

20 Capital commitments

Commitments for the alterations of property and equipment

- Approved and contracted for	46,532	2,901
Thirteen motor vehicles	-	2,901
ERP system	12,432	-
Drilling rig	9,000	-
Building - Bellville	25,100	-

21 Foreign currency exposure

			2008 R'000				2007 R'000
	Exchange rate	Amount	R value	Exchange rate	Amount	R value	
21.1 Trade receivables							
Foreign currency							
Ghana Cedi	R 8.39880	¢ 140	R 1,172	R 0.000750	¢ 59,706	R 45	
Madagascar Ariary	R 0.00474	Ar 4,371	R 21	R 0.000000	-	-	
Moroccan Dirham		-	-	R 0.876600	DH 5,869	R 5,145	
Euro	R 12.86820	€ 1,809	R 23,279	R 9.695200	€ 353	R 3,422	
US\$	R 8.12020	\$ 474	R 3,845	R 0.000000	\$ 0	-	

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

	2008 R'000	2007 R'000
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21 Foreign currency exposure (continued)

	Exchange rate	Amount	2008 R'000 R value	Exchange rate	Amount	2007 R'000 R value
21.2 Banks						
Foreign funds						
Ghana Cedi	R 8.39880	¢ 58	R 484	R 0.00075	¢ 598,061	R 449
Madagascar Ariary	R 0.00474	Ar 896	R 4	R 0.00359	Ar 4,241	R 15
Moroccan Dirham	R 1.13730	DH 8,237	R 9,368	R 0.87660	DH 3,390	R 2,972
Euro	R 12.86820	€ 1,477	R 19,000	R 9.69520	€ 835	R 8,095

22 Related-party transactions

During the year, the following related-party transactions took place between the Council for Geoscience and the Department of Minerals and Energy:

Sales of goods and services	36,417	-
Deferred income	45,756	77,210

During the year, the following related-party transactions took place between the Council for Geoscience and the Department of Science and Technology:

Sales of goods and services	460	-
Deferred income	1,865	2,840

Refer to note 9 for further details regarding deferred income transactions.

The Council for Geoscience offers geoscientific services to government departments.

Government grants:

Revenue	107,755	93,100
---------	---------	--------

23 Change in accounting estimate

The useful life of an aircraft body was estimated in the 2006 financial period at 4 years and has been revised in the 2007 financial period to 10 years.

Depreciation before change	-	1,797
Depreciation after change	-	719
	-	1,078

The amount of R1,078,211 represents the helicopter depreciated for 9 months and the aeroplane for 12 months in the 2007 financial period.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 MARCH 2008

	2008 R'000	2007 R'000
23 Change in accounting estimate (continued)		
The change of R1,147,257 for a full year will be reflected in future periods.		
On 1 April 2007 the CGS Management revised and changed the useful lives of its old assets as follows:		
	Old	New
Motor vehicles	5 years	5–8 years
Equipment	5 years	5–7 years
Office furniture	10 years	20 years
Computer equipment	3 years	8 years
Computer software	2 years	5 years
The depreciation charge for the current year decreased by R2,433,135 due to the change in the accounting estimate and future depreciation is expected to increase by R2,433,135.		
Operating surplus is arrived at after taking into account the following:		
Depreciation: Affected assets	4,209	
Due to the change in accounting estimate regarding the useful life of assets, the depreciation expense is reported at	<u>4,209</u>	
Motor vehicles	350	
Equipment	3,021	
Office furniture	6	
Computer equipment	620	
Computer software	212	
Depreciation expense using the previous rates would have been reported at	<u>6,642</u>	
Motor vehicles	504	
Equipment	4,290	
Office furniture	16	
Computer equipment	1,271	
Computer software	561	
Difference	<u>2,433</u>	
Motor vehicles	154	
Equipment	1,269	
Office furniture	10	
Computer equipment	651	
Computer software	349	



Council for Geoscience

leading earth-science solutions





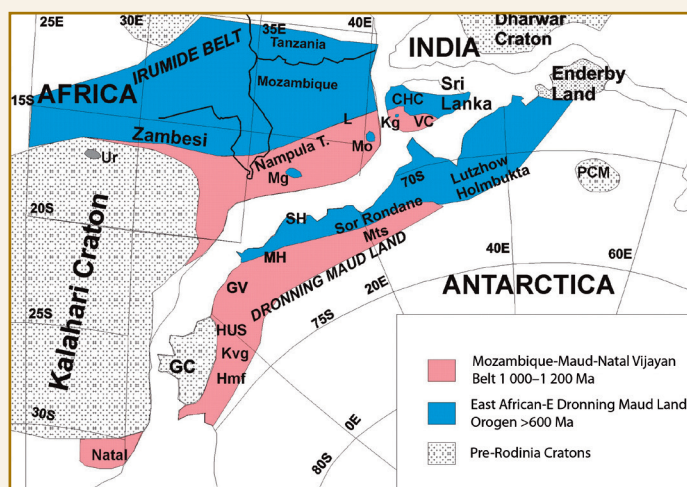
HIGHLIGHTS OF ACTIVITIES

OF THE COUNCIL FOR GEOSCIENCE DURING 2007/08

AFRICA COLLABORATION

Schematic map of the various crustal blocks belonging to the North Gondwana and South Gondwana areas in Mozambique, Sri Lanka and Dronning Maud Land, Antarctica.

Mo - Monapo Klippen,
Mg - Mugeba Klippen,
Kg - Kataragama Klippen,
L - Lurio Belt,
SH - Shirmacher Hills,
MH - Muhlig Hoffmanfjella,
GV - Gjelsvikfjella,
HUS - Sverdrupfjella,
Kvg - Kirwanveggan,
Hmf - Heimefrontfjella,
GC - Grunehogna Craton,
Ur - Urungwe Klippen,
PCM - Prince Charles Mountain.



Mozambique Project

As part of the Mozambique Mapping Project, CGS staff members completed the mapping of a significant area of northern Mozambique in the period 2000 to 2006. This project yielded significant new data, particularly rock-age, chemical and structural data. This project is aimed at bringing the new information to the attention of the broader geoscience community.

The latest data permit a better understanding of the processes involved in the amalgamation of the supercontinent Gondwana at ~600 to 540 million

years ago and the breakup of Gondwana at ~200 to 180 million years ago into its various fragments including Africa, India, Sri Lanka, Antarctica and Australia, among others.

The new data have, in particular, facilitated the conclusion that certain areas of Mozambique, and Sri Lanka and Antarctica, which were adjacent to Mozambique prior to the breakup of Gondwana, share similar histories, thus facilitating correlations between the areas.

These correlations, which are strongly supported by the ages of the rocks, as well as the similarities in the structural and metamorphic evolution patterns in the various areas, have provided new insights into the evolution of the geology of southern Africa. These new insights suggest that a collision between two pre-Gondwana blocks contributed to the formation of Gondwana ~590 million years ago. This collision occurred along a zone stretching from northern Namibia (the Damara Belt in Namibia), through the Zambesi Valley (Zambesi Belt of Zambia and Zimbabwe), across Malawi and northern Mozambique (Lurio Belt of northern Mozambique), into Sri Lanka and, finally, into Antarctica (Maud Province of Antarctica). The collision formed a mountain range, probably equivalent to the modern-day Himalayan

Orogeny or mountain-building process. Erosion of this mountain belt since its formation ~600 million years ago, appears to have provided voluminous sediment which today, within a reconstructed Gondwana super-continent, forms sandstone formations stretching from the southern Cape, through the Transantarctic Mountains and into Australia.

Karoo-age lavas along the northern Mozambique coast are interpreted as having erupted during the breakup of Gondwana at ~180 to 200 Ma. The chemical compositions of the lavas are atypical of most other Karoo lavas in that their compositions are typical of compressional/collisional settings, in contrast to the extensional lavas that characterise most other Karoo eruptives.

The CGS delegation during a visit to Algiers with staff members of the Service Géologique National (SGN) and Centre de Recherche en Astrophysique et Géophysique (CRAAG).



Algeria-CGS Collaboration Agreement

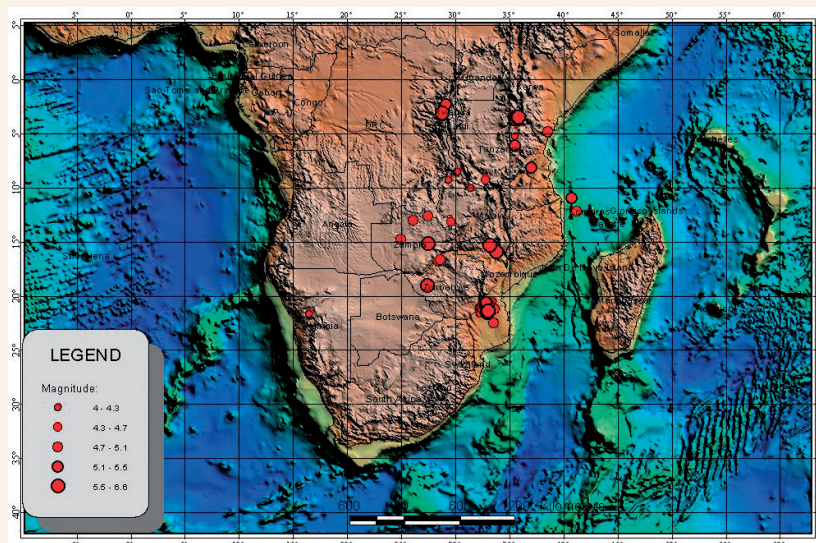
South Africa, through the CGS, has forged a strong scientific and institutional collaborative relationship with Algeria by assisting in the restructuring, developing and implementing of a new geological survey-type institution for the country. Continued discussions have culminated in a project proposal with an agreed budget for the first phase of this programme.

The first phase has already started, with four staff members of the CGS studying the current organisational structure and modus operandi of the current Algerian Geological Survey in Algiers. The CGS is in the process of completing a report, which will be submitted to the Algerian Geological Survey during a workshop in Algiers that will be held to discuss the recommendations of the report. Two further phases are expected to be implemented subject to contractual agreements in 2008/09, in which the CGS

will assist the Algerian Geological Survey to implement the findings of the report, with special emphasis on the geological mapping of the country. Although the CGS has a good working relationship with the Algerian Geological Survey for phases 1, 2 and 3, which largely focus on institutional reform, the CGS would wish, in the medium and long term, to assist Algeria with its planned and ambitious geological mapping programmes, which it sees as key to attracting investment in mineral exploration for the country. Further collaboration with Algeria would probably focus on using Algerian geologists together with CGS geologists in its international mapping programmes.

The CGS is very pleased that, for the first time, it has successfully established a working relationship with Algeria. Experiences so far indicate that the CGS is in the position to have a very fruitful and long-lasting collaboration with this country.

The occurrences of earthquakes in southern Africa, as recorded by the South African National Seismograph Network.



Earthquake Monitoring

Seismicity along the East African Rift System was moderate during the period under review, and the South African National Seismograph Network (SANSN) recorded no more than 20 earthquakes with magnitude $M \geq 5.0$ occurring in the region. The largest event, $M=6.2$, occurred on 29 November 2007 in Mozambique. The most notable seismicity in the region occurred in the Democratic Republic of the Congo (DRC) during February 2008, when three earthquakes with magnitudes ranging from $M \approx 5$ to $M \approx 6$, occurred in the Lacivu region. Reports of 42 fatalities were received from the Western Province of Rwanda and from Bukavu in the DRC. It was further reported that another 500 people were injured in Rwanda and 250 in the DRC, where a church collapsed. It is estimated that 1 500 residential and public buildings, including 25 schools, were either severely damaged or destroyed as a result of this event.

Notable earthquakes in South Africa occurred in Namaqualand (Northern Province) on 17 September 2007, with a local Richter magnitude of $M=3.9$. A magnitude $M=4.4$ earthquake occurred in the Leeu-Gamka area on 3 November 2007.

The Ceres/Tulbagh area, the region where the devastating $M=6.3$ earthquake occurred in 1969, experienced a total of eight earthquakes during the period under review; the largest event, $M=3$, occurred on 19 September 2007. The area has since experienced a period of seismic quiescence, which may be indicative of stresses rebuilding along the faults. It is worth noting that an offshore earthquake of $M=1.2$ occurred along the Western Cape coast.

Seismicity in and around Lesotho has increased dramatically since 2005, when nine earthquakes were recorded by the SANSN; this number increased to 25 during 2006 and 109 during 2007.

Geochemical Map of the Kingdom of Lesotho

The CGS was involved in the geochemical mapping of Lesotho with the main purpose of creating a knowledge infrastructure of the geology of Lesotho and of stimulating prospecting and exploration. Most of the fieldwork for this project was done from 1971 to 1981 during the exploration for diamonds by the Lesotho Government through the United Nations Development Programme. The

stream-sediment samples that were collected during the diamond-exploration programme were never analysed chemically and the full geological data benefit of the already collected samples was therefore never realised. The project was funded by the African Renaissance Fund. The CGS analysed the stream-sediment samples for 23 elements on a simultaneous X-ray fluorescence spectrometer and produced

geochemical maps for each element to complement the geological, magnetic (only in the extreme south) and gravity maps that already existed.

A total of 12 724 samples were prepared and analysed. Geochemical distribution maps were compiled for each of the 23 elements. Multi-element anomalous areas were identified and compiled as a geochemical synthesis map. Several geochemical anomalous areas need to be visited to verify analyses and for follow-up work. The verification of the anomalies is very important in order to identify and study the geological sources of the different types of anomalies. Groundwater samples from geochemical

anomalous areas were analysed to identify and study environmental health-risk areas.

The remaining map-sheet areas (approximately 50 per cent of the country) need to be sampled to complete the Regional Geochemical Map of the Kingdom of Lesotho. The same sampling methodology (of one first-order stream-sediment sample per square kilometre and size fraction) should be maintained. It is important that sampling, sample preparation and analyses are standardised as closely as possible to the previous working methods in order to achieve continuity in the mapping process.

INTERNATIONAL COOPERATION

Hutti Gold Mine,
Karnataka State, southern
India.



Kimberlite exposure, Guntal, India.



Precambrian Crustal Evolution and Metallogeny of Peninsular India and Eastern/Southern Africa

This project is one of two earth-science collaborative projects between the Geological Survey of India (GSI) and the CGS; part of a wider bilateral agreement between the two countries.

The aims and objectives of this collaborative project are to investigate the metallogenic-tectonic framework for the Precambrian crust of part of the Indian and African crustal fragments (once

amalgamated in the Gondwana supercontinent) and to produce an integrated 1:5 000 000-scale tectono-metallogenic map, with the Precambrian geology restored to its original Gondwana position, and an accompanying explanatory booklet. The study area includes Peninsular India, Sri Lanka, Madagascar (and the Seychelles), and eastern and southern Africa, from Somalia to South Africa.

continue on next page...

The Precambrian shield areas of India, and southern and eastern Africa, are endowed with numerous economically important mineral deposits and prospects. By re-assembling the Pan-African continent of Gondwana, the tectonic geology/crustal evolution and the associated metallogeny of the study area can be compared. It is hoped that an improved understanding of the complex geological evolution across the area in Precambrian–Cambrian times will further enhance the understanding of the mineral potential of Africa and India.

The tectonic component of the map concerns events from the Archaean up to the final amalgamation of Gondwana during the Cambrian. Only mineral deposits of which the genesis is known to be of Precambrian to early Cambrian age are included in the map. A variety of commodities,

including gold, base metals, diamonds, iron, manganese, tin-tungsten (with molybdenum associated in places), tantalum-niobium, gemstones, platinum-group metals, uranium and graphite occur in the study area.

From preliminary work, certain similarities in types and styles of mineralisation have been observed across the map area; however, there are some noticeable differences. The crustal evolution of Madagascar and Mozambique is being re-investigated because of the availability of new data pertaining to the Archaean and Proterozoic terrains in these areas. The final results should contribute toward a better understanding of the Precambrian metallogeny and crustal evolution (tectonic history) of India, Madagascar and eastern/southern Africa.

IASPEI 2009 General Assembly in Cape Town

The CGS will be the first organisation on the African continent to host a General Assembly of the International Association of Seismology and Physics of the Earth's Interior (IASPEI). The IASPEI 2009 General Assembly will be held in Cape Town from 10–16 January 2009.

The CGS bid was supported by the Minister of Minerals and Energy, the International Council for Science (ICSU) and the two main geoscience associations in South Africa, the Geological Society of South Africa (GSSA) and the South African Geophysical Association (SAGA).

This is an ideal event to mark the United Nation's International Year of Planet Earth and will be valuable in promoting geophysics not only in South Africa, but also in Africa. This event will provide a perfect platform for the African geoscience community to share its expertise in the international arena.

The Local Organising Committee (LOC) expects an attendance of no less than 400 delegates from regions as diverse as South America, Australia, China, Europe, North America and Africa. The IASPEI General Assemblies usually attract delegates with expertise in both the pure and applied aspects of seismology, geophysics and geology, and they represent a wide range of institutions from the academic, government and industrial sectors.

The objectives of IASPEI are:

1. to promote the study of geophysics and seismology
2. to initiate and coordinate the conduct of research which depends on cooperation between different countries, and to provide for scientific discussion
3. to facilitate particular research on scientific, engineering and applied seismology, such as the comparison of instruments used in different countries, research on aerial blasting and, generally, all matters to which seismology is related
4. to promote the study of problems relating to earthquakes, to the propagation of seismic waves, and to the internal structure, properties and processes of the Earth.

A summer training school will be held directly after the General Assembly, with six international scientists presenting lectures. The summer school intends to take advantage of the influx of seismologists to the region and will thus provide extra training to students and scientists who normally do not have the opportunity of attending events of this nature. The LOC will be obtaining sponsorships for the provision of financial support to young students and scientists from the region to attend the event.

Indian Ocean Tsunami Early Warning System (IOTWS)

The CGS was designated by the South African Government to act as the scientific/technical contact for tsunami-related issues after the devastating earthquake, measuring 9.0 on the Richter scale, which occurred on Sunday, 26 December 2004 off the northern tip of Indonesia's Sumatra Island and caused a tsunami that left a 10-nation arc of destruction in southeast Asia. The CGS operates and maintains an advanced seismological network and five of the South African National Seismograph Network stations are dedicated to contribute seismic data toward an International Data Centre. Funding for the operation and maintenance of the tsunami seismic network is made available by the Department of Provincial and Local Government.

Two officials from the CGS are members of the National Disaster Management Forum. Meetings are held quarterly, at which the CGS reports back on progress and efforts toward South Africa's commitment in the establishment of the IOTWS.

During a working group meeting in Dubai, from 4 to 6 October 2007, it was decided to develop an Indian Ocean tsunami map, incorporating earthquake sources and deep-ocean propagation of tsunamis.

Funding was allocated to upgrade an additional three stations and equip these with state-of-the-art broadband seismometers. Data from these seismic stations are being sent to a Data Centre, which is being operated by the GeoForschungsZentrum, Potsdam, Germany's National Research Centre for Geosciences, and the International Data Centre established in Indonesia.

The CGS became actively involved in promoting IOTWS preparedness and awareness programmes as part of an educational effort. The CGS is also actively involved in the Intergovernmental Coordination Group, and sessions, hosted by Indian Ocean neighbouring countries, are held on a regular basis.

New SeisComP v3.0 software that is capable of releasing earthquake-location and earthquake-magnitude information by means of e-mail or SMS, will officially be released early in 2008. The automatic processing time of received data is in the order of five minutes. Except for India, all other Indian Ocean neighbouring countries have agreed to follow an 'open data' policy, which means that data from other National Data Centres may be applied to the automatic-processing software, which will generate messages and alarms via e-mail or SMS.

The Organisation of African Geological Surveys (OAGS)

The Organisation of African Geological Surveys (OAGS) was launched on 2 February 2007, during the plenary session of the African Mining Partnership.

The OAGS is a NEPAD initiative and has representatives from African countries including Algeria, Kenya, Ghana, Chad, Zambia, Tanzania, South Africa, Sierra Leone, Nigeria, Mozambique, Mali, Zimbabwe, Angola and Uganda. All African countries, however, are free to claim membership. South Africa was elected President and Secretariat of the OAGS.

The mandate of the OAGS is to foster and sustain government-supported geoscience endeavours and excellence on the African continent in the quest for socio-economic development and poverty eradica-

tion, with special reference to mineral-resource assessment, sustainable land use and development, hazard mitigation and environmental protection.

The objectives of the OAGS, as specified by its constitution, are to:

- jointly address African geoscience issues of common interest
- promote the contribution of the geosciences to African affairs
- assist African decision makers to obtain technical advice from the members of the OAGS
- provide a geoscience network between the geological surveys.

The following projects are currently being undertaken by the member countries, mostly in a joint-partnership manner in order to leverage each contributing country's wealth of knowledge and experience:

- geological information for small-scale mining; preparation of summary document — Ghana and Nigeria
- production of a report on the role of geological surveys in the development of Africa — South Africa
- input from Africa for the Geological Map of the World; submission of a 1:5 000 000-scale

map to 'OneGeology', a flagship project of the International Year of Planet Earth to create dynamic geological map data of the world available from the Internet — South Africa and Namibia

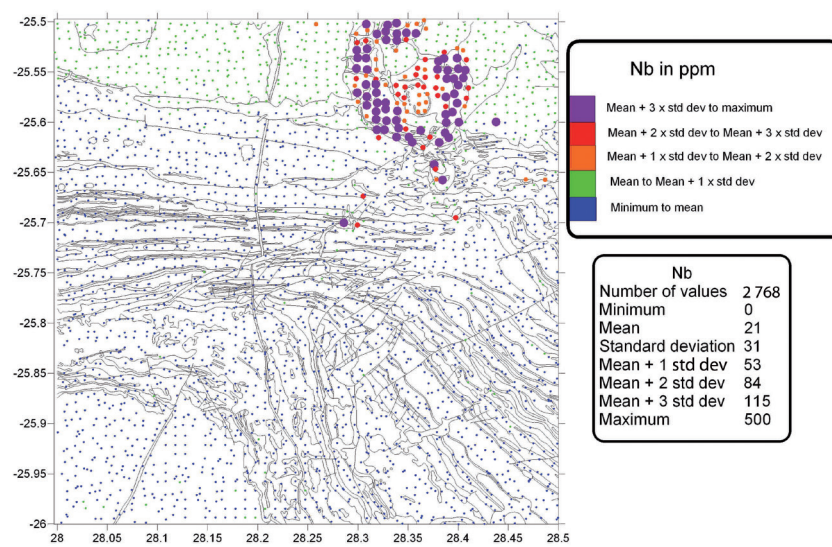
- Production of a publication on OAGS activities and the key activities of member countries — Algeria.

The last meeting of the OAGS took place on 6 February 2008, in Cape Town. During this meeting the draft constitution of the organisation was finalised and progress on the above projects was presented.

OTHER GEOLOGICAL AND ASSOCIATED MAPPING AND RESEARCH

The anomalous concentrations (purple, red and orange colours) represent the Roodekraal Complex. The mean values in green indicate the Bushveld Granite on the left and the Waterberg Supergroup on the right, whereas the below-average Nb values (in blue) depict the Pretoria Group sediments as well as the Johannesburg Dome Granite.

The 1:100 000-scale Pretoria sheet



Regional Geochemical Mapping of the 1:100 000-scale Pretoria Sheet

The Regional Geochemistry Unit of the CGS has undertaken the task of producing regional geochemical maps of South Africa to complement existing geological information. The focus of the survey is to create a geochemical database with the aim of identifying exploration targets for a wide range of commodities, to test exploration models and to initiate geological research.

Sampling of the Pretoria 1:100 000-scale sheet, including Pretoria, Silverton, Centurion and

Rietvleldam, was carried out on a sample density of one soil sample per square kilometre. The upper half of the Silverton 1:50 000-scale map was sampled by means of helicopter-supported transport. All the other sheets were foot sampled using four-wheel-drive-vehicle support. The soil samples, with an approximate mass of 5 kg, were dry sieved to extract the -75 micron fraction. The samples were analysed by the CGS in Pretoria using the following analytical techniques: Simultaneous X-ray fluorescence spectrometry

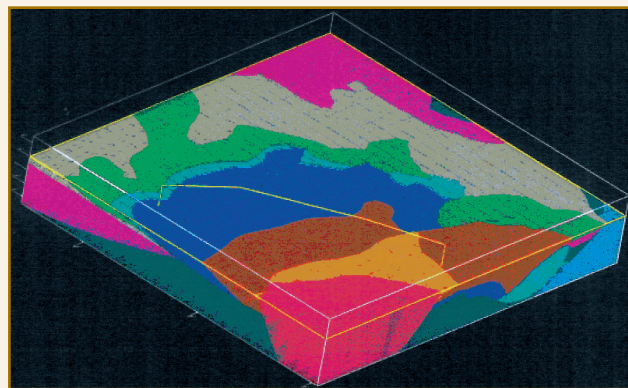
(Sim-XRF), sequential X-ray fluorescence spectrometry (Seq-XRF), inductively coupled plasma mass spectrometry (ICP-MS) and ion chromatography; DC arc emission spectrography analyses were done at the Henan Laboratory, People's Republic of China.

Geological data, as well as mineral economic data were compiled to interpret the geochemical data. Statistical data, such as the mean, minimum, maximum and standard deviation were determined for each geochemical element and were used to display the different anomalous layers of the data. Each

geochemical-element distribution was described and a synthesis of the geochemical data was presented.

A provisional summary of the comprehensive soil geochemical data set for the 1:100 000-scale Pretoria sheet revealed valuable information on, among others, the Kleinfontein anomaly that could contribute toward mineral exploration, and on contamination affecting the wellbeing of citizens in the Pretoria metropole. However, further work needs to be done by applying and testing more comprehensive models to obtain the full value of the data.

3D model of the 1:50 000-scale Mabeskraal area.



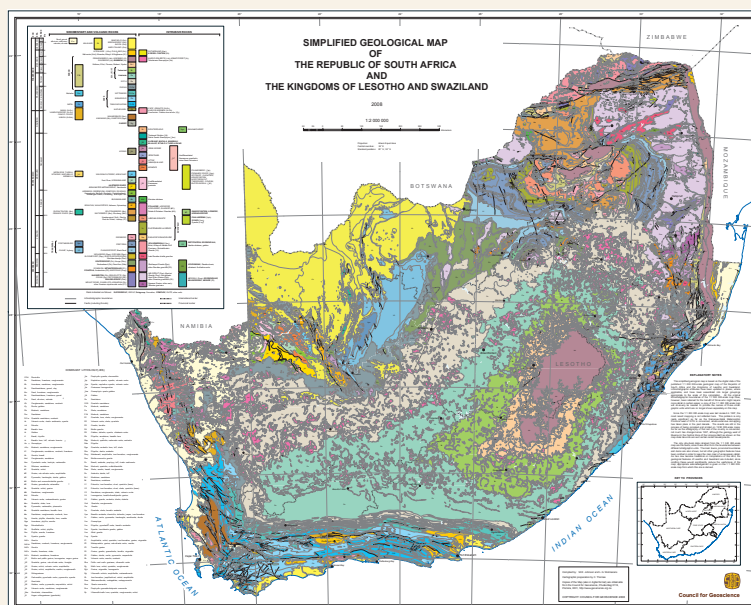
3D Geomodelling

The CGS has been producing conventional two-dimensional (2D) geological base maps; however, a base map or cross-section alone, which is limited to two dimensions, cannot represent the complete subsurface geological framework. Three-dimensional geological models, which can be manipulated and visualised, assist the viewer with the interpretation of the normally concealed geology. This kind of modelling enables graphical simplification of concepts, which are otherwise complicated and complex to visualise. The building of a 3D model is achieved by using source data such as borehole information, as well as various other methods employing geophysical disciplines.

In February 2007, the CGS, by entering into a research licence agreement with the Bureau de Recherches Géologiques et Minières (BRGM) of France and Intrepid Geophysics of Australia, embarked on

a 3D modelling programme, involving regional-geological mapping as one of the many innovation projects. The principal objective of this programme is to stimulate and broaden scientific knowledge in 3D geological mapping. This tool will be used to view and enhance the understanding of how geological entities vary spatially.

Five scientists of the CGS were trained by the BRGM in the 3D Geomodeller software application, which was developed by the BRGM and Intrepid Geophysics. The software was evaluated over a three-month period, using the preliminary edited 2526BB Mabeskraal 1:50 000-scale geological map sheet and other relevant information as a test programme. During the evaluation, importance was given to data preparation, and the amount as well as the type and format of data that can be used in 3D Geomodeller.



An example of one of the simplified maps at a scale of 1:2 000 000 that were produced by the CGS for use by students and non-geologists.

Chronostratigraphic and Lithostratigraphic Maps of South Africa

A 1:2 000 000-scale chronostratigraphic map of South Africa has been produced which should prove particularly useful to students, foreign visitors and non-geologists wanting a bird's-eye view of the distribution of rocks of different ages in South Africa. The main geological and palaeontological events in South Africa's geological history have been incorporated in the legend, together with an indication of the time periods for the country's extensive gold, iron, manganese, platinum, chromium, coal and diamond deposits. Different colours, ranging from red/purple for the oldest to blue for the youngest, were allocated to each of the time intervals shown on the map.

A simplified 1:2 000 000-scale geological map, based on the latest edition of the 1:1 000 000-scale geological map of South Africa, Lesotho and Swaziland (1997), has been compiled for the benefit of those who cannot afford to buy the latter, or who do not have sufficient wall space to display the larger map. This map will be of particular interest to students studying geology. Where feasible, lithostratigraphic units have been assembled into larger groupings commensurate with the smaller scale of the new map, and limited updating was done in places. In order to keep the map as uncluttered as possible, only faults, main towns and provincial boundaries have been retained on what is, essentially, a lithostratigraphic map.

Structural Mapping of the Eastern Bushveld Complex Margin

This project aims at investigating the influence of domal contact aureole structures that truncate and attenuate economically important horizons within the mafic-ultramafic Rustenburg Layered Suite of the Bushveld Complex in the vicinity of Steelpoort and Burgersfort, Mpumalanga Province. The understanding of the thermomechanical evolution of the aureole and the igneous pile is enhanced in this way and potentially exciting exploration targets have been identified. Through this research the CGS has

developed core competencies in Bushveld Complex geology.

To date, one paper has been published in the South African Journal of Geology and three more have been submitted to international journals. A paper was presented at the annual American Geophysical Union Fall Meeting in San Francisco, USA in a session devoted to physical and chemical processes in large layered intrusions.

View across the coastal barrier dune near Lake Bhangazi, south of Sodwana Bay, over the Ozabeni wilderness area.



Regolith Geology of the Maputaland Coastal Plain

This long-term, multidisciplinary collaborative research project has benefited from the expertise of researchers in Israel, the United Kingdom and Norway, and has been partly sponsored by the NUFU programme of the Norwegian Council of Universities' Committee for Development, Research and Education. Initially the project was a regional mapping and lithostratigraphic assessment of the geological evolution of the coastal plain extending north of the iSimangaliso Wetland Park into

Mozambique. In recent years the project has focused on palaeo-environmental change in this region and the implications for ecosystems and habitat management in the iSimangaliso Wetland Park, which is a World Heritage Site. A research paper synthesising the geochronology of dune-system accretion and periodic remobilisation over the past ~400 000 years was accepted for publication by the international journal *Quaternary Science Reviews*.

The Dilston palaeo-landslide with an aerial extent of approximately 3 km², situated 50 km south-southwest of Pietermaritzburg.



Mass Movement Mapping and Landslide Inventory

This innovative research project represents a holistic approach to regional mass-movement and landslide-deposit mapping in KwaZulu-Natal. The project has revealed that large mass-movement deposits and landslides are more widespread than previously acknowledged. A spatial analysis of

the landslides and a range of causal factors have produced a landslide-susceptibility map that highlights areas where landslides may form in the future, threatening development. A summary paper was accepted for publication by the *South African Journal of Geology*.

School of Geological Mapping
— Participants at an outcrop
in the Lekgalameetse Nature
Reserve near Tzaneen.



School of Geological Mapping

A major achievement for the year was the expansion of the field school into a fully fledged two-year programme in which the full-time participants are guided and mentored. The programme for the School of Geological Mapping has been structured into eight modules with each module spanning a duration of three months, covering various primary topics and secondary themes. This year these included igneous/volcanic, sedimentary and basement geology. The introductory module of the programme now incorporates the three-week basic field-mapping course that has been held separately over the past two years. Young geologists that have been identified as field mappers, of whom there is a severe shortage in this country, as well as globally, are assigned to the Limpopo Unit for the full duration of two years. In addition, two trainees from outside the Unit were included on the basic introductory course. The degree of supervision is systematically reduced as the programme progresses, and the responsibilities of the trainees concomitantly increase, with the aim of the trainees becoming progressively more independent

in terms of the requisite skills for undertaking field mapping projects. The activities and reports of each module were evaluated before commencing the subsequent module in order to timeously deal with possible problems/improvements.

The implementation of the field school in this format represents a significant commitment of CGS resources toward focused training in these skills, with the possibility of the future expansion of the school, should the funds be secured.

Statutory mapping at a scale of 1:50 000 was centred in the Tzaneen and Tinmyn (west of Mokopane) areas, where the geology was suitable and could be integrated with the training needs of the field school. Thus the trainees were exposed to Bushveld Complex mafic and felsic rocks, Rooiberg Group rhyolitic volcanics, Waterberg Group sediments and Basement granites and gneisses, and were taught to distinguish between the characteristics of the various lithologies and the relationships between these geological units.

PHYSICAL AND CHEMICAL GEOHAZARDS

Forthcoming Compilation of a Carbon-Dioxide Geological Storage Atlas

Carbon capture and storage (CCS) constitute one of the recognised mitigation measures for the

lowering of greenhouse-gas emissions. Assessment of the potential for CCS in South Africa requires a

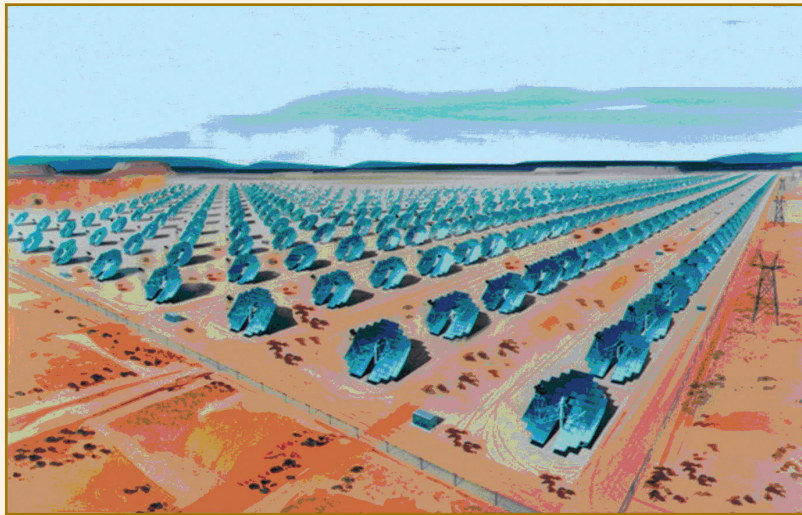
detailed investigation into locating and characterising potential carbon geological storage sites. This eighteen-month investigation will start imminently and is sponsored by Sasol, Eskom, PetroSA, Anglo American plc and the South African National Energy Research Institute (SANERI). The CGS, along with the Petroleum Agency of South Africa, has been appointed for the compilation and publication of the resulting Carbon-Dioxide Geological Storage Atlas.

The atlas, which should be completed by December 2009, will report methodologies and results of the storage-potential evaluations for all the onshore and

offshore basins of South Africa, will provide ranking of the basins according to risk and tectonic settings, and will discuss storage options. It will also feature maps showing the geographic distribution of the basins, and relevant geological and seismic profiles to support salient findings. Additional data such as estimated CO₂-storage capacities of basins, the main emission sources, location of industrial complexes and transport issues will also be included.

This atlas will most likely lead to further research, the development of a pilot project and potentially large-scale pilot CO₂-storage ventures in South Africa.

An artist's impression of a large array of solar-energy collectors that could be developed on an abandoned mining site (Sandia National Laboratories, 2004).



Development of Renewable Energy Projects on Derelict and Abandoned Mine Lands

Large areas of land in South Africa have been degraded to some degree by mining. In many cases, the land may never be fit for unrestricted development, because of the presence of physical and/or chemical hazards. This is a particular problem in the Witwatersrand, where large areas in cities have been rendered unfit for housing development. Historically, little thought was given to the post-mining land use of these areas, and available funding for land rehabilitation, from Government and the private sector, including mining companies, is inadequate for the task at hand. Furthermore, there are real concerns regarding soil contamination with heavy metals and radionuclides, which could be present at levels which would limit the potential of this land for food pro-

duction. South Africa faces challenges in the energy sector, air pollution owing to the large-scale burning of coal and high liquid-fuel prices owing to dwindling resources and geopolitical factors. This project aims to link the problems of land degradation and the energy shortfall by proposing that abandoned and derelict mining sites be used for the generation of renewable energy, as many of the technologies for the renewal of energy require large areas of land to be successfully implemented on a large scale.

A number of technologies have been identified, which are applicable for use on derelict mining sites, with wind and solar energy being the most promising. Large areas of South Africa have potential for the generation of solar energy, in particular the arid

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western part of South Africa. The wind-energy potential of South Africa is more limited; however, potential sites have been identified in the Namaqualand copper district, the West Coast diamond fields and the Witwatersrand. A number of stakeholders have been

identified in the renewable energy sector, the mining sector and communities affected by the closure of mines. Discussions with these stakeholders have indicated broad interest in the project, with the potential for future development in this regard.

SUSTAINABLE DEVELOPMENT

Small-scale mining of sand deposits in the KwaZulu-Natal Province.



Small-Scale Mining Programme

The CGS has been in charge of the Small-Scale Mining Programme (SSMP) since October 2004, although, operationally, the role of the CGS only started in 2005. The programme is an initiative of the Department of Minerals and Energy, and is associated with the function of the CGS to contribute toward poverty eradication and to create employment opportunities, especially for the previously marginalised population of South Africa. To achieve these goals, technical needs are identified for the economic evaluation of mineral-based projects. These technical needs include:

- detailed geological mapping
- resource identification
- resource estimation
- market study
- mine planning
- beneficiation
- lodging applications for mining permits and prospecting rights.

The CGS renders assistance to lower the geoscientific risk inherent in small-mining ventures by extending financial support and scientific and managerial expertise to upcoming entrepreneurs who aim to enter the minerals industry. In some instances the work is outsourced to suitable firms or consultants. The outcome of this effort is a feasibility study report, indicating whether funding of the project is justified. The expense of the feasibility study becomes payable as soon as money is generated from the project. Feasibility studies for the projects take approximately one year to complete.

Commodities included in the small-scale mining projects to date are sand, aggregate, brick and ceramic clay, sandstone, dimension stone, gold, copper, red aventurine, coal, diamonds, pebbles, tiger's eye, slate and salt.

Since the inception of the programme, 171 small-scale mining and beneficiation projects were approved for technical investigations, of which 64 have been finalised and 18 are awaiting capitalisation funding.

Readings are taken of the magnetic susceptibility of dolerite boulders.



High-Density Magnetic and Radiometric Airborne and Ground Geophysics

High-density geophysical surveys, including geophysical ground-truth control, commenced in 2007. This three-year programme is funded by the Medium-Term Expenditure Framework and involves the collection of high-density airborne geophysical data over regions in South Africa that are vital for the promotion of especially small-scale mining.

Kenhardt-Pofadder

Geochemical data of four 1:50 000-scale map sheets indicate possible ultramafic intrusive bodies that are prone to Cu, Co, Ni and Cr, but are hidden by widespread Karoo cover rocks. Recent airborne geophysical data were analysed for the existence of mafic source rocks and tectonic structures. Magnetic and electromagnetic ground-truth control generated a target where the magnetic basement is also reflected by a gravity high. This target appears

promising, as its geophysical signature may imply a layered ultramafic complex with the potential to host Cr, Ni, Cu and PGE mineralisation.

Rustenburg-Zeerust-Madikwe

Eighteen 1:50 000-scale map sheets were fully covered by high-density high-resolution surveys during the period under review. An additional 13 map sheets that had some previous data were also completed. Geophysical ground-truth control was carried out in the Madikwe area across an extended east-west-trending magnetic and radiometric anomaly zone that has the potential for Fe and U mineralisation.

The high-resolution airborne and ground geophysical data will be used, together with geological and geochemical data, to compile mineral-potential maps and to generate exploration targets.

Uranium Occurrences and Potential of South Africa

The importance of uranium as a fuel is ever increasing, as uranium is used in nuclear power stations, where carbon-dioxide emissions that contribute to global warming are negligible. Other applications of uranium include radioactive isotopes for medicine, food irradiation and ship propulsion using small reactors. South Africa contains considerable resources of uranium and has been

recovering uranium as a by-product of gold since 1951, and of copper at Palabora Mine between 1971 and 2001. Production reached a peak of 6 146 tons in 1980, but has declined to 673 tons in 2005 and 534 tons in 2006, the latter contributing some 1,35 per cent of the world's mining production which totals 39 429 tons. However, with the major upswing in the uranium market over the past four years, there has

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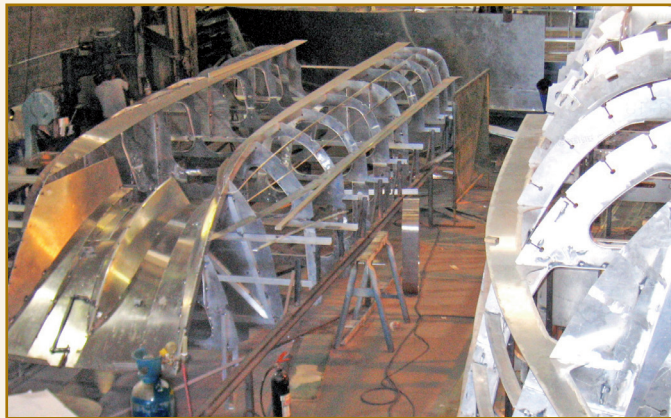
been renewed exploration of and mining interest in uranium in South Africa and production is expected to increase to 1 102 tons in 2007.

Uranium in South Africa occurs in different geological settings:

- In granites, e.g. the uraniferous Concordia Granite field of the Namaqualand Metamorphic Province situated in Namaqualand in the vicinity of Springbok. These granites contain up to 490 ppm U_3O_8 and were prospected by mining companies during the 1970s. Speculative resources of 100 000 tons have been calculated, but no economically viable deposits have been discovered yet. The granites are genetically related to a range of granite suites within the Damaran Mobile Belt of Namibia, a number of which host major deposits of uranium.
- In sediments that have probably been derived from uranium-rich granites:
 - (a) Sandstone-hosted uranium deposits of the Karoo Basin in the Beaufort West area, and the Natal Group in KwaZulu-Natal, north of Port Shepstone.
 - (b) The Springbok Flats field where uranium occurs in coal. This deposit contains more than double (77 072 tons) the identified resources of the Karoo Uranium Province.
 - (c) Quartz-pebble conglomerate type, e.g. (1) the Witwatersrand Basin, where uranium is produced as a by-product of gold mining, contains the largest resources of uranium in South Africa, and (2) the auriferous quartz-pebble conglomerate placers in the Mozaan Group in the northern part of KwaZulu-Natal.
 - (d) The surficial deposits in the northern part of Namaqualand in the Northern Cape Province, occurring as near-surface valley-fill sands and gravels in the semi-arid to arid areas.

RECAPITALISATION

Building of the new survey vessel of the CGS is progressing well.



Marine Survey Vessel for CGS

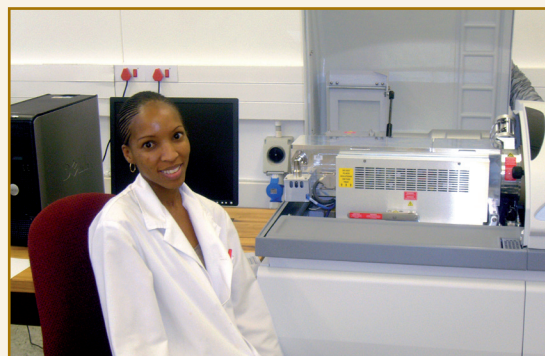
The Marine Geoscience Unit is in the process of having a specialised inshore geophysical-survey vessel built.

The vessel is a 9 m catamaran, made from aluminium, which provides a more robust, longer-lasting and lower maintenance material than fibreglass. This is the ideal platform from which the Unit's state-of-the-art geophysical equipment, a Reson multibeam, Klein 3000 digital side-scan sonar

and the Octopus reflection seismic system can be safely deployed.

The vessel will be used not only to undertake an increased statutory programme, but also for inshore commercial surveying. The first commercial proposal has been identified, which is a debris survey outside of the harbour entrance to Cape Town. The vessel will be ready for delivery early in the new financial year once it has completed sea trials.

The Perkin Elmer ELAN 9000
ICP-MS.



Perkin Elmer ELAN 9000 ICP-MS

The ELAN 9000 inductively coupled plasma mass spectrometer is a sophisticated analytical instrument that is used to determine isotope ratios, as well as multiple-element concentrations in liquid samples. Solid samples can also be analysed but have to be decomposed in acid prior to analysis. The instrument can detect the concentration of most elements in the parts per trillion range within three minutes.

The main advantage of this instrument is the exceptionally low concentrations at which analyses can be done accurately and its ability to simultaneously determine the concentration of up to

60 elements within a relatively short time. The high rate of analysis possible with this type of instrument also reduces analytical costs significantly.

The instrument will mainly be used for the determination of major- and trace-element concentrations in soil samples. It is, however, also possible to determine these elements in nearly any inorganic matrix, such as alloys, rocks and water. It is even possible to analyse matrices such as muscle and bone if a dedicated sample-preparation method is used. This instrument should significantly increase the number of samples analysed by the CGS.

The Milestone DMA-80 Direct
Mercury Analyser.



Milestone DMA-80 Direct Mercury Analyser

The DMA-80 is a compact analytical instrument that is used to determine the mercury concentration of both liquid and solid samples, with virtually no sample preparation. The instrument can detect mercury concentrations in the parts per billion range within six minutes.

The main advantage of the instrument is the ability to determine the concentration of a volatile element, such as mercury, in problematic matrices such as coal, soil or tissue. Conventional mercury-analysis methods are cumbersome, and not accurate when high carbon concentrations are encountered.

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The relatively uncomplicated design of the instrument implies a large saving in maintenance costs.

The instrument will further be used to investigate mercury concentrations in water samples, soil

samples, lake sediment samples, and biological samples such as hair, nails, muscle and bone. The instrument will contribute toward extending the analytical capabilities of the CGS.

The new SXRF spectrometer for the fast analysis of samples.



Simultaneous X-Ray Fluorescence Spectrometer

A new simultaneous X-ray fluorescence spectrometer was purchased for the Laboratory Unit to replace the old instrument after 20 years of service. The technical specification of the new XRF spectrometer was set up to cover a wide range of the elements on the periodic table. A PANalytical MagiX Fast instrument, equipped with a powerful 4 kW X-ray Rh tube, several fixed channels and three

goniometers, was acquired and installed during December 2007. It was put into operation in January 2008, and samples from the Giyani and Tzaneen areas, covering 5 500 km², were analysed for several major and trace elements. Over the next two years the instrument will mainly be used for the geochemical mapping projects of both statutory and commercial work, which will involve about 18 000 samples.

High-pressure, high-temperature reactor.



High-Pressure, High-Temperature Reactor

Substantial effort was invested into the acquisition of a computer-controlled, corrosion-resistant high-pressure, high-temperature stirred reactor system equipped with a liquid CO₂ boosting pump. The maximum working pressure of the reactor is 200 bar at the maximum working temperature of 350 °C.

This equipment will be used for the development and testing of small-scale industrial dissolution and carbonation processes within the framework of the carbon-dioxide sequestration projects. It is anticipated that the employment of the reactor will expand the range of Research and Development

(R&D) applications and the services currently offered by the CGS. These include:

- (i) R&D and consultancy services on solid-waste minimisation, recycling and re-use:

The high-pressure reactor will allow the development and testing of industrial processes for the modification and improvement of properties of solid waste, generated by the mining and minerals industry, for recycling and re-use purposes. Support to companies

with respect to the environmental extraction of heavy metals and/or oxidative destruction of other contaminants from soils, sediments and industrial waste/sludge, and conversion of harmful waste into benign and environmentally acceptable products will also be developed.

- (ii) Laboratory experiments on mineral formation and mineral-fluid interactions, mimicking conditions found up to 2 000 m below ground level, will be possible.

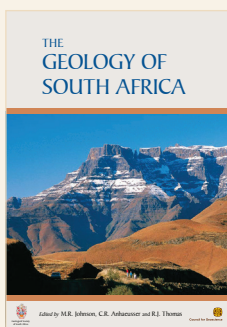
Physical Properties Laboratory Instruments

During the year, the Physical Properties Laboratory of the Geophysics Unit purchased two new instruments:

- The **PUNDIT Plus** ultrasonic pulse velocity meter. This new instrument is not only used to measure the compression (P) wave velocity of solid-rock samples, but also offers, as an optional extra, shear (S) wave transducer accessories. The S wave is of particular importance for seismic-hazard analysis.
- The **Agilent Dielectric Probe Kit**. The dielectric constant (ϵ) is a measure of the electrical

polarisation resulting from an applied electrical or electromagnetic field. The dielectric constant is used to predict the performance and response of ground-penetrating radar (GPR). Borehole radar is the main exploration method used in platinum mines for 'ahead of the mining face' exploration, while GPR is used mainly for environmental and shallow applications. In order to predict accurate GPR or borehole radar responses using forward modelling and inversion techniques, the dielectric constant values are critical. Measured laboratory values from samples can, to a large extent, solve the uncertainty problem.

MILESTONE PUBLICATIONS

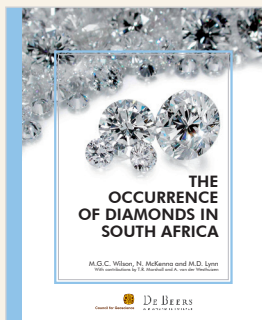


The Geology of South Africa

The Geology of South Africa, published jointly by the Geological Society of South Africa and the CGS in July 2007, provides a comprehensive overview of South African geology for students, academics, research scientists, those connected to the minerals and mining industries, policy makers, or simply interested laypersons, and is intended to be a basic reference work that will provide the foundations for current and future scientific

endeavour in the region. The book comprises 33 chapters, prepared by specialists knowledgeable in respect of the different terranes embracing both the continental and offshore geology of the country. The chapters are arranged in ascending order, from the oldest formations in the Limpopo Province (over 3 600 million years old), to the various coastal and interior deposits that developed following the breakup of the Gondwana supercontinent, which commenced approximately 180 million years ago. A comprehensive subject index provides ready access to the vast array of geological formations encompassed in the various chapters.

Revision of the Mineral Resources Publication - Diamonds



At its core, the newly released Mineral Resources Series No. 1: The Occurrence of Diamonds in South Africa, deals with the formation and distribution of both primary kimberlitic diamond deposits (pipe and dyke or fissure types)

and secondary eluvial, alluvial and marine deposits, as well as the methods used in exploring for these deposits. This text coverage, along with several accompanying maps, will give the interested reader or potential investor a clear indication of the distribution of diamonds in South Africa. In this way the CGS can further contribute toward addressing the national imperatives of eradicating poverty in the rural areas and assisting in stimulating the national economic growth through job creation.

To add wider appeal to the book, the authors have attempted to make it an up-to-date source book,

which summarises a broad range of topics of more general interest, including:

- the physical properties of diamonds
- the classification and uses of gem, industrial and synthetic diamonds
- the history of diamond mining
- how the diamond market operates
- the classification, age and genetic modelling of primary diamond deposits
- controls on the distribution of kimberlites in South Africa
- modern methods of exploration for both primary and alluvial diamond deposits.

South Africa remains a significant diamond producer, by value, ranking third after Botswana and Russia, in 2006. South Africa and Namibia host the only known alluvial diamond mega-placer deposits (more than 50 Mct, 95% of which are gem quality) in the world. In addition, South Africa exploits diamonds from more deposit types than any other country.



CGS EXHIBITIONS

The CGS was represented at numerous exhibitions and mining, geoscience and educational events during the year, the most important included:

- 11–14 June 2007: 69th European Association of Geoscientists and Engineers (EAGE) Conference and Exhibition, London, United Kingdom.
- 10–13 July 2007: Geoforum, Eskom Conference Centre, Halfway House.
- 17–18 July 2007: *AfricaArray* Workshop, University of the Witwatersrand, Johannesburg.
- 15–17 August 2007: SUSTAIN Exhibition, Sandton Convention Centre, Johannesburg.
- 6–7 September 2007: Africa Downunder Conference and Exhibition, Brisbane, Australia.
- 11–15 September 2007: Electra Mining Africa 2007, Expo Centre, NASREC, Johannesburg.
- 24–27 September 2007: Insite 2007, Sandton Convention Centre, Johannesburg.
- 22–26 October 2007: South African Geophysical Association (SAGA) Conference, Wild Coast Sun.
- 13–15 November 2007: China Mining, Beijing International Convention Centre, China.
- 4–7 February 2008: Mining Indaba Conference, International Convention Centre, Cape Town.
- 2–5 March 2008: PDAC International Convention, Trade Show and Investors Exchange, Metro Toronto Convention Centre, Toronto, Canada.

69th EAGE Conference and Exhibition

The CGS attended the European Association of Geoscientists and Engineers (EAGE) Conference and Exhibition that took place from 11 to 14 June 2007 in London, where representative staff members manned a recruitment booth. The objective of the exhibition was to promote and market science careers.

Geoforum of the Geological Society of South Africa

This annual event was held at Midrand from 10 to 13 July 2007. It is normally preceded by a Student Geocongress, which provides an ideal opportunity for employers to meet students in order to find promising new geologists or to identify possible bursars.

The CGS traditionally takes up an exhibition stand at the Geocongress to display its latest products, services and projects. This busy event is attended by most of the geoscientists in South Africa, and the CGS stand was kept very busy during the four days. The new 'Geology of South Africa' textbook, which was published in cooperation with the Geological Society of South Africa, was released and many copies of this long-awaited publication were sold.

Africa Downunder Conference, Australia

The event, held on 6 and 7 September 2007, was attended by Ministers and representatives of several African countries, including business leaders and executives from the mining services industry. Some 700 delegates and 64 exhibitors represented various countries that aim to promote investment opportunities in Africa. The Director-General of Minerals and Energy, Advocate Sandile Nogxina, was one of the speakers at this key event.

China Mining Conference and Exhibition

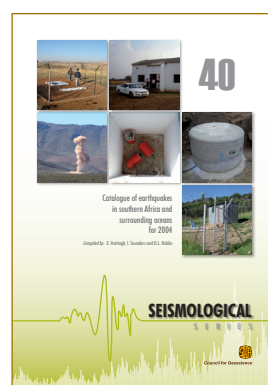
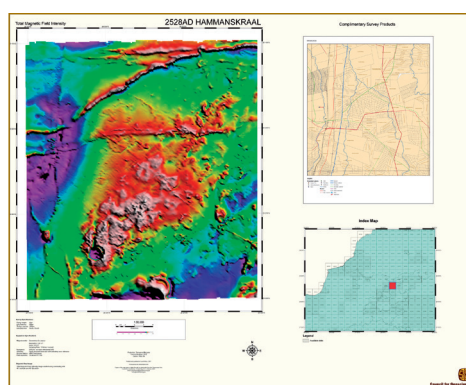
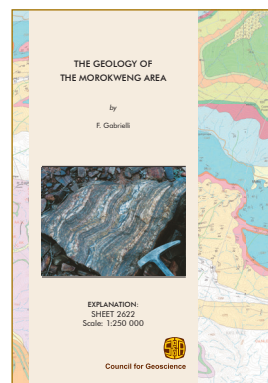
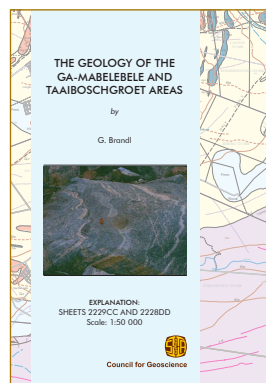
Asia's premier mining conference and exhibition event, hosted by China's Ministry of Land and Resources took place from 13 to 15 November 2007. It attracted nearly 3 000 participants, in 300 exhibition booths, from 45 countries and regions. The CGS had a stand at this event that provided an important channel for communication and exchanging information among global mining enterprises, while building relationships and creating valuable networking opportunities.

Mining Indaba Conference

The Mining Indaba Conference, dedicated to the capitalisation and development of mining interest in Africa, was held in Cape Town from 4 to 7 February 2008. The Chairperson of the Management Board of the CGS, Prof. P E Ngoepe, attended this prestigious event, as did the CEO, Mr Thibedi Ramontja, and Executive Managers, Mr Fhatuwani Ramagwede and Dr Peter Zawada. The CGS exhibition stand attracted a number of conference attendees who were especially interested in the geological publications of the CGS.

PDAC Exhibition

The CGS showcased its services and products at the Prospectors and Developers Association of Canada (PDAC) Annual Convention, held from 2 to 5 March 2008 in Toronto, Canada, in the South African pavilion. The CEO, Mr Ramontja, the Marketing and Communications Specialist of the CGS and a staff member involved with small-scale mining represented the CGS at this event, which was attended by more than 20 000 delegates from countries worldwide.



CGS PUBLICATIONS

The following publications were released during the year:

Explanation of Metallogenic Sheet 2726 (1:250 000). The metallogeny of the Kroonstad region by J.H.W. Ward, G. Henry and W.R. Oosterhuis

Explanation of Sheet 2622 (1:250 000). The geology of the Morokweng area by F. Gabbrielli

Explanation of Sheet 2818 (1:250 000). The geology of the Onseepkans area by H.F.G. Moen and D.J. Toogood

Explanation of Sheets 2229CC and 2228DD (Scale: 1:50 000). The geology of the Ga-Mabelebele and Taaiboschgroet areas by G. Brandl

Mineral Resources Series No. 1: The occurrence of diamonds in South Africa by M.G.C. Wilson, N. McKenna and M.D. Lynn

SACS: Catalogue of South African Lithostratigraphy Units, Volume 9 by M.R. Johnson

SACS: Lithostratigraphy of the Langkrans Formation (Wolkberg Group). Lithostratigraphic Series No. 49 by P.J.A. Bosch

Seismological Series 40: Catalogue of earthquakes in southern Africa and surrounding oceans for 2004 by E. Hattingh, I. Saunders and D.L. Roblin

The Geology of South Africa compiled by M.R. Johnson, C.R. Anhaeusser and R.J. Thomas

The following maps were released during the year:

1:250 000 Geological Maps

2622 Morokweng

3018 Loeriesfontein

1:50 000 Geological Maps

2627DB Vereeniging

2628BA Delmas

3326CA Springmount

3326BD Trappe's Valley

3326BC Grahamstown

3326DA & DC Boesmansriviermond

3326DB Port Alfred

3326CB & CD Alexandria

3322CD & 3422AB George

2429AA Mokopane

1:50 000 Geotechnical Maps

2730CC Osizweni

The following Total Field Magnetic Data Maps (High-Resolution Series) were released during the year:

2328AC Abbotspoort
 2528AD Hammanskraal
 2624BD Papiesvlakte
 2816DD Holgat
 2920AD Doringknie
 2920AC Vaalkop
 2920CB Boomrivier
 2920CA Lekdam
 2920BC De Tuin
 2920DA Drieboomlaagte

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SOCIAL RESPONSIBILITY

OF THE COUNCIL FOR GEOSCIENCE DURING 2007/08

STAFF RECEIVE AWARDS

Mr Dale Roblin of the CGS (left) was one of the prize winners at the 17th ISS International Seminar.



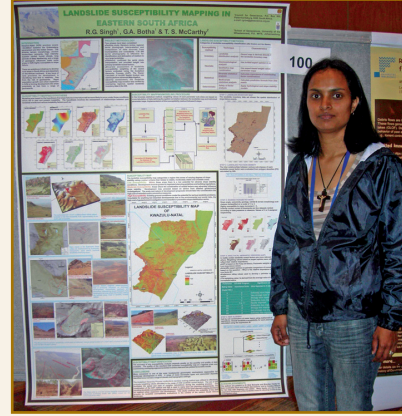
Seismology staff among top speakers

In April 2007, several staff members of the Seismology Unit attended the 17th Integrated Seismic Systems (ISS) International Seminar held in Stellenbosch, which focused on monitoring and modelling seismic rock mass response to mining.

Talks were presented by 15 speakers, and Mr Dale Roblin, who discussed the usage of SeisComP by the

CGS, was among the top three prize winners. The SeisComP (Seismological Communication Processor) is a new concept for networked seismographic systems and involves data acquisition; data recording; monitoring and controlling; real-time communication; user access, and automatic (near-)real-time data processing (quality control, event detection and location).

Mrs Rebekah Singh received the prize for the best student poster at the XVII INQUA Congress from the President of INQUA, Prof. John Clague.



CGS excels at XVII INQUA Congress

A number of CGS scientists contributed oral and poster presentations at the XVII Congress of the International Union for Quaternary Research (INQUA), held in Cairns, Australia from 28 July to 3 August 2007. Mrs Rebekah Singh presented a poster, entitled 'Landslide susceptibility modelling in KwaZulu-Natal'

during the session on 'Quaternary records in planning and assessing risk for natural hazards (Australia)'. Mrs Singh was awarded a 'Best student poster' book prize to the value of €150, sponsored by Elsevier. This achievement highlights the high International standard of Quaternary research by the CGS.

COURSES AND EVENTS ORGANISED BY THE CGS

Participants in the practical session related to National Data Centre operations.



CTBTO Regional Technical Training Programme

As part of South Africa's commitment to the Comprehensive Nuclear-Test-Ban Treaty Organisation (CTBTO), the CGS is designated to act as the technical point of contact with respect to seismological and infrasound matters and to operate a National Data Centre which functions within the framework required by the CTBTO. The CGS manages the various

components of the project and ensures continuous data flow and availability from the seismograph and infrasound facilities.

The Provisional Technical Secretariat (PTS) for the CTBTO organises training courses on an annual basis for participants from State Signatories to familiarise themselves with the products and services of

the International Data Centre (IDC). The CGS was requested by the PTS to host the Joint International Monitoring System/International Data Centre Regional Technical Training Programme for station operators and National Data Centre technical staff, which took place from 10 to 14 March 2008.

The main purpose of this programme was to introduce and expose the course participants to the organisational structure of the CTBTO and its operations, and, especially, to the products offered

by the IDC that will eventually enable them to operate their respective National Data Centres and International Monitoring System stations optimally in order to contribute quality data toward the IDC, which is an essential part of the verification regime. Regional cooperation among African countries and the CTBTO was also enhanced.

Twenty-five participants and presenters attended the course.

Delegates to the SASQUA XVII Conference getting to grips with field conditions in KwaZulu-Natal.



SASQUA XVII Conference in KwaZulu-Natal

A total of 116 authors from 13 countries and 34 institutions presented 41 papers on their latest research results at the Southern African Society for Quaternary Research (SASQUA) XVII Conference, organised by the KwaZulu-Natal Unit and held at the Umgeni Valley Nature Reserve, outside Howick, KwaZulu-Natal, from 11 to 13 April 2007. About 60 per cent of all contributing authors were based in

South Africa, 11 per cent in the United Kingdom, and about 9 per cent in Australia. The significant international presence from the United Kingdom, Australia, Germany, Sweden, Spain, France, Nigeria, the United States of America, Canada, Taiwan and Russia sent a strong message of collaboration between scientists involved in Quaternary research in South Africa and elsewhere.

Seismology Workshop 2007

The Seismology Workshop 'Neotectonics and Mining Seismology — is a Relationship Possible?' took place on 8 May 2007.

The objective of the workshop was to determine the extent to which neotectonic forces might influence the occurrence of large seismic events in mining districts. The main achievement of the workshop was the interdisciplinary interaction

between experts in geology, geodesy, rock engineering and seismology, which was established by means of the 14 talks presented by different organisations and spanning different disciplines.

Approximately 120 participants who represented researchers and practitioners from semi-government organisations, universities, mining companies and consulting firms attended this successful event.

CGS Open Day

The biennial CGS Open Day was held at the CGS Head Office in Silverton, Pretoria, from 15 to 17 May 2007.

This event is aimed at introducing the services and activities of the different business units of the CGS to the public. One of the three days was set aside for school children, and learners from a large number of schools visited the CGS on the day.

Each business unit had its own stand with a number of posters depicting the activities of the unit. The

posters were supplemented with explanatory sheets, which were handed out to the learners. A total of 52 posters were produced for the Open Day.

A series of talks was offered for one of the afternoons. Visitors were invited to three lectures on interesting geoscience topics. A booklet with geoscience-related experiments was compiled for the event and was handed out to each visitor.

A total of 825 learners and members of the public visited the 2007 CGS Open Day.

Geoparks Conference

A conference on geoparks, geological and mining conservation and tourism development took place on 22 June 2007 in the auditorium of the CGS in Silverton, Pretoria and was attended by geoscientists, CGS staff members and representatives from universities, as well as an international visitor who presented a talk on Geoparks in England.

Currently an awareness of the importance of conserving and promoting sites and regions of geological and mining interest for the tourism business is spreading worldwide. The relatively new concept of 'geoparks' aims at promoting, in a holistic manner, regions of geological and mining importance as a means for developing a region.

The aim of the conference was to explore geoconservation and geopromotional activities, and to debate their relevance to South Africa. A field trip afforded participants the opportunity to examine geosites in a proposed urban geopark on the northern exposed limb of the Witwatersrand basin.

The CGS has a database into which information on these sites is captured. Some of the sites can probably be developed as tourist attractions and thereby will provide job opportunities to South African citizens. The sites can also be used to teach the public and learners about geology and, especially, the uniqueness of South African geology.

AfricaArray Training Session

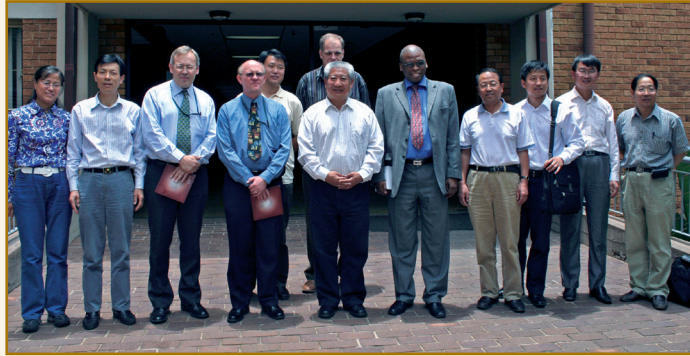
The *AfricaArray* project focuses on building geophysics capacity in Africa, thereby helping to create a workforce of highly trained scientists that will hopefully go some way to meet the long-term manpower requirements of Africa's natural-resources sector. It is the task of the CGS to install seismic stations in participating countries to form an earthquake-detection network, and to train technical personnel in the operation and maintenance of the seismic stations.

In July 2007, technicians from Namibia, Mozambique, Zimbabwe, Zambia, the Democratic

Republic of the Congo, Botswana, Uganda, Ethiopia and Kenya attended a hands-on training session at the seismological electronics laboratory of the CGS. The training was provided by technicians of the Seismology Unit and a professor of Geophysics from the Pennsylvania State University in the United States of America. The training was aimed at providing the participants with the knowledge required to maintain and operate their own equipment in their home countries. This training session took place directly before the annual *AfricaArray* Workshop held at the University of the Witwatersrand.

VISITS TO THE CGS

Several delegations visited the CGS, including this Chinese group, as part of the CGS International Collaboration Programme.



The CGS hosted the following delegations:

- Turkish Delegation – 14 May 2007
- Institute for Advanced Industrial Science and Technology (AIST) Delegation (Japan) – 23 May 2007
- Chinese Delegation – 4 July 2007
- Algerian Delegation – 30 July to 3 August 2007
- Chinese Delegation – 6 August 2007
- Polish Delegation – 24 October 2007
- Korean Delegation – 25 October 2007
- Democratic Republic of the Congo Delegation – 29 October 2007
- China Gansu Province Delegation – 22 November 2007
- China Gold Yard Delegation – 26 November 2007
- China Gold Yard Delegation – 17 January 2008
- China Gold Yard Delegation – 26 February 2008

EDUCATION AND INFORMATION

Scientists of the Western Cape and Marine Geoscience Units with learners from Western Cape schools.



Take a Girl-Child to Work

The CGS identified several schools in the Western Cape and Gauteng Provinces for the 'Take a girl-child to work' initiative that took place on 27 May 2007. Grade 12 girls were introduced to the earth sciences by means of group and one-on-one

sessions with geoscientists. They were given the opportunity to learn about minerals, earthquakes, tsunamis, the laboratory and geoscience equipment. Each girl received a promotional gift at the end of the day.

Ms Matamba Makhado of the Mineral Resources Development Unit presenting information on small-scale mining opportunities in Humansdorp.



Small-Scale Mining in the Eastern Cape

The CGS presented an exhibition at this information session that took place in November 2007 in Humansdorp and was attended, among others, by the CEO, Mr Thibedi Ramontja. He presented a minerals map of the area to the Honourable Minister

of Minerals and Energy, Ms Buyelwa Sonjica. The CGS received several enquiries on mineral occurrences in the Eastern Cape area, a key focus area of the CGS for providing information and products that will assist, especially, small- and medium-size companies.

Learners' Focus Week: Western Cape Province and Fort Hare University

Two hundred and ten learners from four coastal provinces, i.e. the Western Cape, Northern Cape, Eastern Cape and KwaZulu-Natal, gathered in the Western Cape for the Learners' Focus Week, organised by the Department of Minerals and Energy. Learners from Grades 10 to 12 attended presentations on

career opportunities during this event that took place from 30 March to 2 April 2008.

A similar event took place at the Fort Hare University from 1 to 4 July 2007, with some 300 learners receiving attendance certificates.

CGS Colloquium Programme

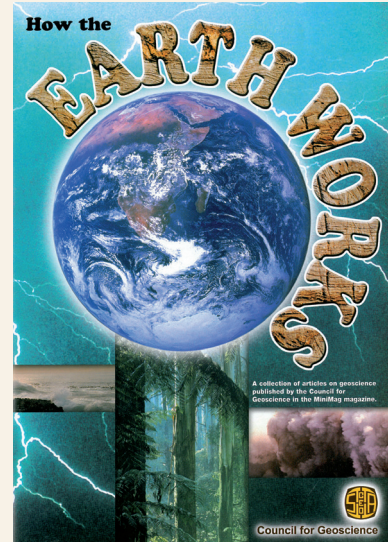
One of the important strategic endeavours of the CGS is to increase and develop a scientific culture in the organisation. To this end it was decided to initiate a regular scientific colloquium. These talks, termed 'GeoIndaba', are normally presented on the second Thursday of every month in the CGS Auditorium. Two to three talks are on the programme each month and the abstracts are collated into a publication at the end of the year. This programme is extremely informative, giving an overview of the diverse nature of the projects undertaken by staff of the CGS.

During the year under review, 27 talks were presented, covering a wide variety of topics, from 'OneGeology — A worldwide initiative to make global geological data accessible using the Internet: Feedback on a workshop attended in Brighton, UK during March 2007', presented by a staff member of the Spatial Data Management Unit, to 'Factors affecting metal toxicity in environmental systems', presented by a geoscientist of the Environmental Geoscience Unit. Staff of the regional business units also participated actively in this initiative.

Educational Information

Staff members of the Information and Collections Management and Laboratory Units contributed a number of articles on topics including wetlands, air quality, coal and geosites to the monthly magazine MiniMag, aimed at teenage readers, and also assisted with the compilation and linguistic editing of articles. A brochure on waterfalls and the geology in the KwaZulu-Natal midlands was produced and printed for distribution among tourists visiting this area.

Earth Works is a collection of articles on geoscience, published by the CGS in the MiniMag magazine.



Dr Thinus Cloete explaining some of the processes in the laboratories of the CGS to learners of the Mentorship Programme.



Geoscience Learner Mentorship Programme

The CGS, in conjunction with the Department of Minerals and Energy, facilitated a 'Careers in Mining' exhibition at the Bapong rural area near Brits on 7 August 2007. The exhibition was attended by more than 1 000 learners from the surrounding schools. The theme for this exhibition was 'Thuto Mpho ee Sa Boleng' (education is the gift that does not decay).

The CGS identified five learners for the Learner Mentorship Programme from this group of visitors. These learners visited the CGS head office on 19 October 2007 and were introduced to the products and services of the CGS.

The CGS initiated a wellness programme to assist staff members with health issues.



CGS Employment Assistance Programme (EAP)

The CGS launched a programme called 'Vhamutuku — The future of your wellbeing' to provide an avenue for staff members to discuss health-related issues with professional medical practitioners. This is a free and confidential service to all staff members and their families.

The EAP was launched on Friday, 1 February 2008, at the CGS Head Office in Silverton, Pretoria. Various medical tests were carried out by professional health companies. This intervention is aimed at ensuring a culture of wellbeing at the CGS.

Diversity Workshops

The CGS has a diverse workforce, with people from different backgrounds, language groups and vastly different views on life. The purpose of diversity training at the CGS is to encourage mutual understanding among staff members and to motivate personnel to work together for the benefit of the organisation.

During the period under review the CGS held three diversity workshops, with the first workshop being held for managers. Seventy-five people have so far participated in this programme. The CGS aims to continue with diversity training in 2008, and it is hoped that every employee will have the opportunity to attend training and benefit from this initiative.

CGS Bursars

The CGS currently has a group of 40 bursars, from first-year-degree level up to MSc level, studying at various institutions to receive their qualifications in the field of the geosciences.

Bursary Students as at 31 March 2008			
Initials	Surname	Gender	Year of Study
S	Kasiram	Male	1st year
F	Mulabisana	Female	1st year
M	Selepe	Male	1st year
S T	Sithole	Male	1st year
A	Baker	Female	2nd year
D	Botsi	Male	2nd year
M	Buthelezi	Female	2nd year
A	Lala	Male	2nd year
H	Mashale	Female	2nd year
L P	Muteli	Male	2nd year
S	Xanga	Male	2nd year
D J	Birch	Male	3rd year
T N	Buthelezi	Female	3rd year
C	Faber	Female	3rd year
B	Gogotya	Female	3rd year
K	Halenyane	Female	3rd year
K E	Mashishi	Female	3rd year
N T	Mokoena	Female	3rd year
S V	Nyathi	Male	3rd year
I	Robinson	Female	3rd year
F A M	Sekiba	Male	3rd year
S	Sogayiso	Female	3rd year
M	Zikalala	Male	3rd year
N	Backenberg	Male	Honours
T	Dhansay	Male	Honours
C	Groenewald	Male	Honours
W B	Gubela	Male	Honours
M	Hadebe	Male	Honours
N	Khanyile	Female	Honours
C W	Lambert	Male	Honours
K S	Lekoadi	Male	Honours
L P	Munyangane	Female	Honours
M	Musetsho	Male	Honours
S	Naiker	Female	Honours
C	Reay	Female	Honours
K	Robbey	Female	Honours
A	Shabalala	Female	Honours
S	Zulu	Male	Honours
P	Langa	Female	MSc
A	Mathebula	Male	MSc

University Roadshow 2007

The CGS continued its roadshow to universities throughout the country with the aim of introducing the geosciences as a career option to university students and to encourage students to consider the CGS as a future employer.

UNIVERSITY	DATE
University of Fort Hare	3 August 2007
University of Cape Town	16 October 2007
University of Stellenbosch	17 October 2007
University of the Western Cape	18 October 2007

FUTURE OUTLOOK

OF THE COUNCIL FOR GEOSCIENCE

Historically, during the time when the CGS was known as the Geological Survey of South Africa, its business model was driven solely by the needs of the State. Upon the enactment of the Geoscience Act (Act No. 100 of 1993), the organisation became responsible for earning part of its funding. Although the mandate of the CGS is clear, especially with respect to the State, the current business model has, out of necessity, become more and more commercially driven. Under the current model, the CGS is responsible for earning as much as 50 per cent of its income commercially, with a targeted growth of at least 10 per cent per annum.

With this in mind, the two main challenges facing the CGS are:

- Challenges in respect of capacity building and retention of staff
- Challenges in revenue/funding.

These two fundamental challenges have a spiraling effect on the overall operation of the CGS. Achieving success in these two areas will ensure that the CGS meets its deliverables in the areas of innovation, research and development, mapping and recapitalisation. The needs of the country in respect of rapid urbanisation, sustainable development and economic growth are real, and the CGS needs to make progress in sustainable funding, as well as human resources, in order to meet these needs.

Maintaining a balance between commercial and statutory programmes is a growing concern for the organisation. The need to meet budgetary demands through commercial work constantly puts pressure on the local statutory focus of the CGS. It is not foreseen that the need for additional funding will change in the short term. The way forward in meeting these challenges is by becoming more relevant to the needs of the people of South Africa. Extensive geoscience programmes which meet these criteria are being proposed to Government. Programmes of this type effectively replace commercial work, and bring the organisation back on track in terms of its statutory obligations. The afore-mentioned programmes produce geoscience knowledge which directly affects areas such as mineral exploration (and thus small-scale mining), land use and environmental planning. Agency and Medium-Term Expenditure Framework (MTEF) funding are key to the success of these programmes.

The CGS has been awarded funding in 2006/07 through the Medium-Term Expenditure Framework for the Mineral Target Generation Project. This project commenced in the 2007/08 financial year. However, in 2007/08 no further projects were awarded to the CGS. The CGS is submitting project proposals relating to further mineral-target generation, the establishment of a National Exploration Data and Information Centre, the re-assessment of energy minerals (coal, uranium and thorium) for the country,

and the imaging of the Bushveld Complex using a seismic array and seismic-reflection surveys for identifying mineral resources. These projects have been identified as having the largest impact on the geoscience needs of South Africa.

The issue of capacity building and human resources is currently being dealt with in a two-pronged approach. From the top, senior scientists are identified and employed in the CGS with the objective of assisting in achieving its mandate, and retaining critical earth-science skills, while from the bottom, an aggressive bursary programme ensures a steady stream of talented young scientists entering the CGS. A mentorship programme ensures that the necessary link between the senior and junior scientists is established, and that skills are appropriately transferred to the junior scientists.

Increased revenue and funding will allow the CGS to achieve its targets in terms of recapitalisation. The upgrading and purchasing of new equipment is critical to achieve the mandate of the organisation, as well as to ensure that the organisation remains scientifically relevant in the global community. There are two aspects to the recapitalisation process:

- Firstly, aging equipment needs to be assessed and replaced. The assessment determines whether the fundamental technique employed is still relevant; if not, newer techniques are identified and pursued.
- Secondly, new techniques which are gaining global popularity are investigated. An example of this is the instrument called 'SHRIMP' (Sensitive High-Resolution Ion Microprobe), of which six are operating in Australia, two in Japan, two in China, one in Canada, one in the United States of America, one in Russia, and one in São Paulo. Currently, there is no such instrument in Africa.

Strategic partnerships will have to be forged to address the problem of recapitalisation more comprehensively. Training and development of an adequate staff component will form an integral part of the process. This will also lead the way to high-level research activities.

The CGS has large spatial and non-spatial geoscience databases which are continuously being updated. This information is invaluable in mining, environmental and engineering activities. A wealth of data also exist within the Department of Minerals and Energy which need to be centralised and organised. This will require additional resources, but is vital to the future resource planning for South Africa. The CGS has investigated the possibility of making such information available on the internet, and a web Geoportal has already been created for this purpose.

The CGS sees itself as a vital role player in the future energy needs of South Africa. Currently, it is involved in assisting Eskom in the process of performing geophysical, geological and seismological studies of possible sites for nuclear power stations. Accurate and reliable geological information is vital to the safety of these areas, and the CGS, as the leading geoscience agency in South Africa, is well able to provide such information.

The commissioning of the dedicated near-shore survey vessel in the 2008/09 financial year will mark a very important step in South Africa's ability to perform state-of-the-art near-shore geophysical surveys. It is expected that a considerable amount of work will flow to the CGS because of the availability of the vessel.

Carbon capture and storage is a global concern, and the CGS has already started to perform preliminary investigations into meeting this need for southern Africa. Funding for these initiatives comes mainly from agency work and in future will have to be sourced from the Medium-Term Expenditure Framework.

Progress in the upgrading of the office and laboratory environment of the organisation is a focal point for the near future. Plans are underway in this regard, and will include upgrading the regional offices and CGS Head Office in order to meet the needs of an expanding organisation. Work on the CGS Head Office, in particular, will have to be funded through an additional appropriation, however, as this cannot be financed through the reprioritisation of the current Medium-Term Expenditure Framework.

SUSTAINABILITY REPORT

OF THE COUNCIL FOR GEOSCIENCE

EXECUTIVE REMUNERATION

Chief Executive

In terms of Section 18(5) of the Geoscience Act (Act No. 100 of 1993), the 'Executive Officer shall be appointed on such conditions, including conditions relating to payment of remuneration, allowances, subsidies and other benefits as the Management Board may determine in accordance with a system approved from time to time by the Minister with the concurrence of the Minister of State Expenditure'.

Executive Management Team

The remuneration of the Executive Management team is determined by the Management Board of the CGS and is reviewed from time to time.

TRANSFORMATION

The CGS adheres to equal opportunity and affirmative action principles as promulgated in the Employment Equity Act (Act No. 55 of 1998).

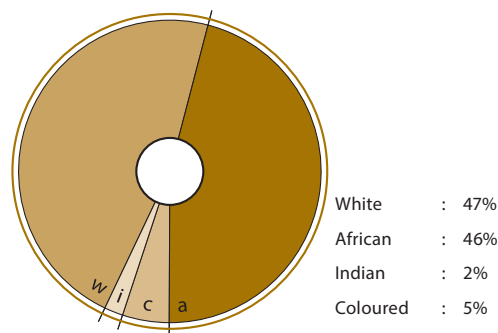
The Personnel, Remuneration and Transformation Committee of the Management Board is responsible for monitoring and evaluating progress on transformation and skills development.

The CGS operates in a labour market characterised by a scarcity of geoscientific skills and a market that is highly competitive. Positive measures are in place to address attraction of potential scientific skills from designated groupings. A bursary scheme was put in place, and the programme is used as a feeder pipeline to attract potential and developing scientists from designated groups into the field of geoscience.

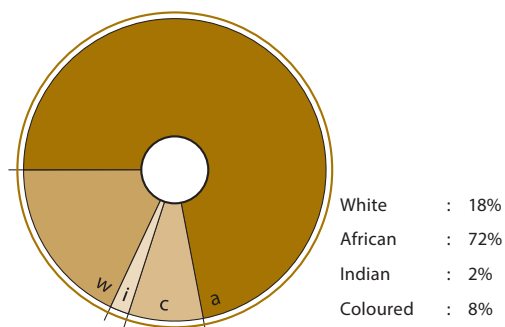
The CGS absorbed 100 per cent of the bursars who completed their studies in 2007 as permanent staff members, of which 20 per cent are Whites and 80 per cent are Blacks.

The following graphs illustrate the demographic composition of the staff and bursars of the CGS.

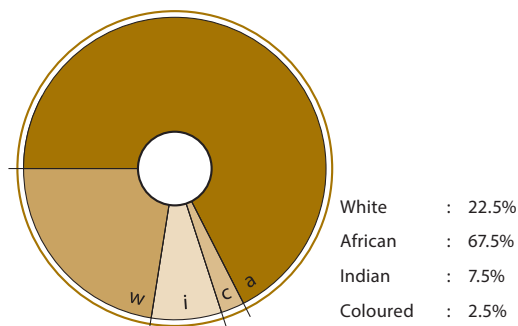
Overall Staff Profile as at 31 March 2008



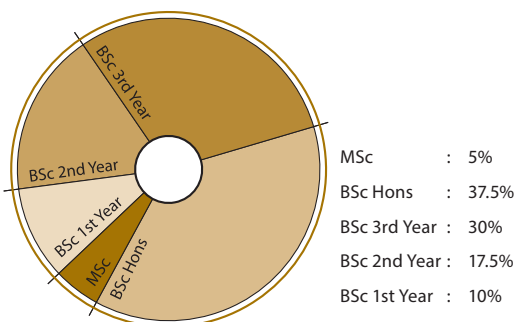
Overall Staff Appointments as at 31 March 2008



Overall Bursar Demographics as at 31 March 2008



Overall Bursar Qualifications as at 31 March 2008



ETHICAL MANAGEMENT

Adherence to code of ethics

The CGS has developed and adopted a Code of Conduct for the CEO, Executive Managers and staff. The code of conduct links to the CGS values and requires all employees to maintain the highest ethical standards, ensuring that business practices are conducted in a manner that, in all reasonable circumstances, is beyond reproach.

HEALTH, SAFETY AND ENVIRONMENTAL MANAGEMENT

The CGS has a Health and Safety Committee that is established in accordance with the Occupational Health and Safety Act (Act No. 85 of 1993). This Committee meets on a quarterly basis to discuss work-related health and safety issues identified at the CGS. Expert advice is given to Unit Managers regarding health at work and safe working practices. The following policies have been developed by the Committee:

- Fieldwork Policy for Geologists and Technicians
- Smoking Policy
- General Health and Safety Policy.

MANAGEMENT

OF THE COUNCIL FOR GEOSCIENCE



Chief Executive Officer
Thibedi Ramontja



Board Administrator
Nangamso Mbeki

Strategic Services
(in the office of the CEO)
Nico Keyser, Johan Barkhuizen

- Strategy Planning Cycle
- Technology and Innovation Management
- Commercial Project Tender Management
- Annual Technical Programme Management



Executive Manager
Applied Geoscience - Fhatuwani Ramagwede
Minerals Development - Stewart Foya
Water Geoscience - Leslie Strachan
Engineering Geoscience
- Fhatuwani Ramagwede (acting)
Environmental Geoscience
- Nompumelelo Msezane



Executive Manager
Regional Geoscience and Mapping
- Peter Zawada
Central Regions - Bernard Ingram (acting)
Western Cape - Luc Chevallier
Northern Cape - Luc Chevallier
Eastern Cape - Greg Botha
KwaZulu-Natal - Greg Botha
Limpopo - Nick Baglow
Marine Geoscience - David Sinclair



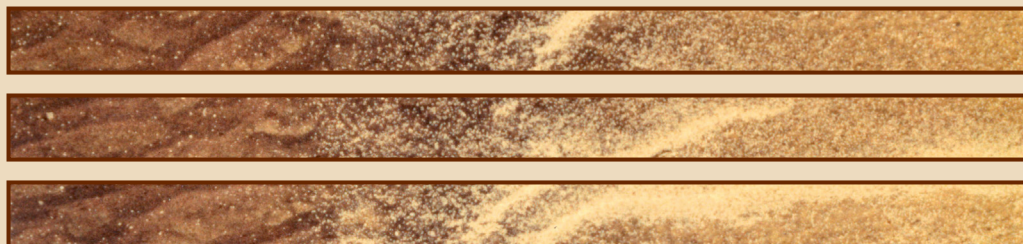
Executive Manager
Scientific Services - Gerhard Graham
Laboratory - Thinus Cloete
Information and Collections Management
- Danie Barnardo
Regional Geochemical Mapping - Thinus Cloete
Geophysics - Patrick Cole
Seismology - Andrzej Kijko
Spatial Data Management - Ken Wilkinson



CFO Services
Finances - Leonard Matsepe (CFO)
Information and Communication Technology
- Peter Motaung
Procurement and Logistics - De Clerq Botha
Technical Services - De Clerq Botha



Corporate Services
Human Resources - Senior Manager
- Malefshane Kola
Marketing and Communications
- Nthombi Mdluli Jacha



RP: 106/2008
ISBN: 978-1-920226-09-1