



Appendix



THE FULL SERVICE WATER UTILITY

Rand Water was appointed as the sole bulk water supplier to Gauteng in 1903, and has never totally failed to supply its customers with water. As times have changed, Rand Water has evolved to meet the progressive requirements of a growing population and expanding economy. It has been a key partner in the development of Gauteng, South Africa's industrial powerhouse and is well positioned to play an even more strategic role in the future.

The enactment of the Water Services Act in 1997 has allowed Rand Water to expand its activities into the field of sanitation and so manage a more complete portion of the water cycle. Another major change is license to engage in other water related services such as providing engineering expertise, undertaking water and sanitation contract in the municipal sphere, and offering consulting services for the institutional development of new water boards.

In the spirit of the new regulatory framework, Rand Water is proud to offer a full range of water services. It is directly involved in uplifting and empowering previously neglected areas and communities. The organisation embraces the vision of the Minister of Water Affairs and Forestry. This is to ensure that all people in South Africa have access to clean drinking water as well as adequate sanitation and refuse removal. Rand Water also assists communities, in its area of authority, to create and develop water management structures by transferring skills, expertise and resources.

Through living the values embodied in the spirit of partnership, integrity, equity, excellence and caring, Rand Water will continue to actively participate in programmes and initiatives aimed at providing and improving basic services to all south Africans. This includes helping to develop capacity at all level of the water supply industry and channelling concerted efforts into educating the public on the wise use of water as a scarce and essential resource.

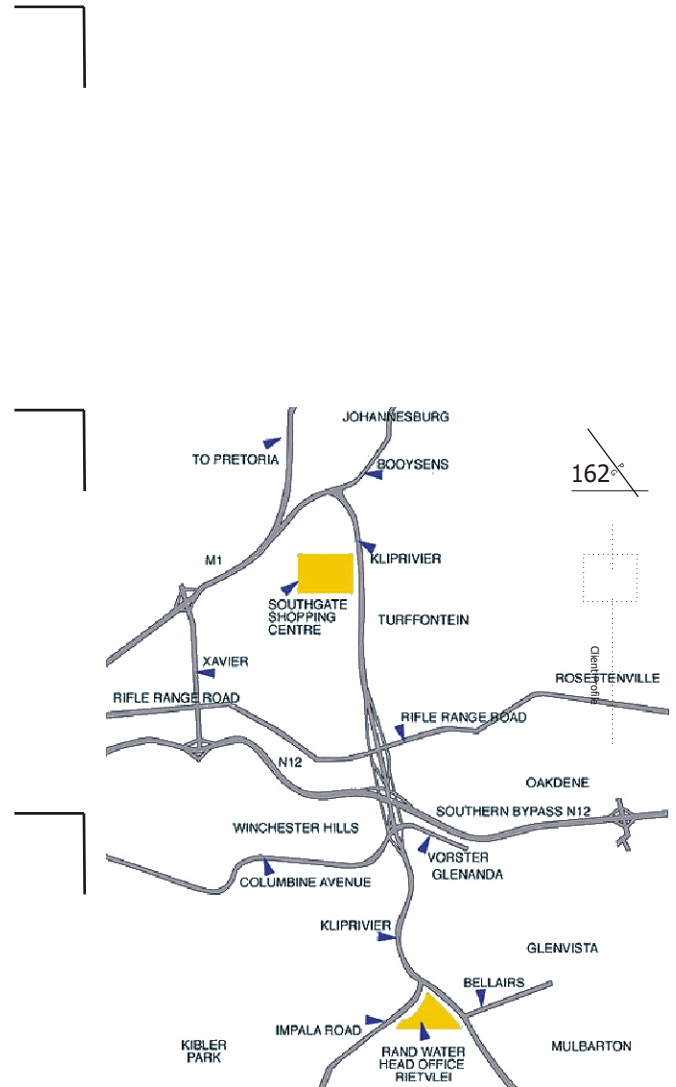


Fig a1. Road Map (RAND WATER Corporate Profile, 2002) (not to scale)



THE PEOPLE AT RAND WATER

Rand Water is a multi-disciplinary organisation possessing all the financial, managerial, technical and operational skills required to supply water services and drinking water in bulk services to the 10 million people living within its service area of supply by the beginning of the new millennium. It is also rapidly developing skills in the field of bulk sanitation.

Rand Water is now governed in terms of the Water Services Act, 108 of 1997. The board of Rand Water is appointed by, and responsible, to the Minister of Water Affairs and Forestry for the financial and operational performance of the organisation. Ultimate management authority for Rand Water lies with the members of its Board. The Board comprises representatives from commerce and industry, the mining sector, local and middle tier government, the Department of Water Affairs and Forestry, and members of Rand Water's executive management committee. Day-to-day management is in the hands of the Chief Executive and the General Managers of the main functional activities of the organisation.

Rand Water remains a public utility that is run on strict business lines. It finances its capital infrastructure by issuing long term loan stock and taking up institutional loans, while daily operational expenditure is financed by the sale of water.

ONE OF THE WORLD'S LARGES WATER UTILITIES **WIDE AREA OF SUPPLY**

Rand Water supplies all the drinking water consumed by people, communities, businesses and industries across a vast area in South Africa, which stretches over 18 000 square km. On average, almost 3 000 millions litres are pumped every day to consumers throughout the Gauteng Province and as far a field as Rustenburg and Carletonville in the North West Province, Bethal in Mpumalanga and Heilbron in the Free State. The magnitude of this quantity of water is significant as it makes Rand Water one of the larges water utilities in the world.

The area supplied by Rand Water with drinking water, houses the provides employment for about a quarter of South Africa's population, some 10 million people, it includes the metropolitan areas of Greater Johannesburg and Pretoria. Overall the area is the central nerve of South Africa's economic activities accounting for about 50 % of the countries industrial turnover.



Fig a2.



Fig a3.

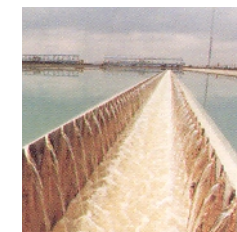


Fig a4.

RAND WATER AND THE ENVIRONMENT

Rand Water's business is in every way tied to the environment. Water is a scarce natural resource and Rand Water gives equal weighting to the legal requirements and ethical obligations posed by Environmental Management. Rand Water has formalised the value it places on caring for the environment in a Corporate Environmental Policy, which has, as its key priorities, performance with regard to the core elements of environmental management and facilitation of employee environmental awareness, which includes stakeholders and research activities.

Environmental Management has become integral to Rand Water's overall management strategy. It has been entrenched into the overall management function and in this way; Rand Water strives to influence environmental performance in an organised, systematic and meaningful manner.

THE WATER SUPPLY CHAIN

The water supply chain in Rand Water's supply area is made up of three parties who are, in essence, the suppliers, wholesalers and retailers of water in these areas.

Beginning with the suppliers of the raw water, the Department of Water Affairs and Forestry are responsible for building and maintaining the dams, and then storing the raw or unpurified water. The water is then sold to Rand Water who, as a bulk supplier or wholesaler, purifies and treats the raw water. It is then distributed and sold as drinking water to the municipalities that store in reservoirs and sell the water to residents and businesses. Other major customers of Rand Water are mines and large industrial concerns.

Rand Water is responsible for the infrastructure and reticulation system from the start of the purification process to delivering drinking water to the retailers' supply points. From this point, the municipalities, as the water retailers, take over responsibility for the provision, operation and maintenance of the intricate pipe reticulation networks winding through the cities, towns, and villages which end at the supply points of thousands of businesses and individual yards.



SOURCE OF SUPPLY

The Department of Water Affairs and forestry (DWAF) are responsible for the management of all water resources in South Africa. With the exception of Vaal River Barrage Reservoir, DWAF acts as the custodian of the nation's water resources including all storage dams in the Vaal Rivers system.

The Vaal Dam has a capacity of 2.6 million mega litres of which 234 362 million litres are reserved for the sole use of Rand Water. The organisation draws about 99% of its water for purification from the dam and is the single largest consumer of water from the Vaal River system.

Rand Water's overriding concern is to supply clean water that is safe to drink, colourless, odour free and pleasant tasting. The key to maintaining cost effective high quality raw water is good catchment management. Rand water has for many years run a resource protection programme in the catchments areas of the Vaal Dam and the Vaal River Barrage, and area totalling some 500 000 square km. With the development of the Lesotho Highlands Water Scheme and the reliance on the Tugela-Vaal Transfer Scheme, this programme now includes the Katse Dam in Lesotho as well as the catchments of the Kilburn, Woodstock and Spioenkop Dams in KwaZulu Natal.

SOURCE WATER PROTECTION

The single largest cost incurred by Rand Water each year is the purchase of raw water from the Department of Water Affairs and forestry with expenditure on the resource amounting to some 43% of the total annual budget.

Rand Water maintains an extensive source water quality-monitoring programme as the consequences of deteriorating raw water have a major impact on both water purification costs and the quality of drinking water. This programme is coupled to an advanced information management and decision support system, which allows Rand Water to keep abreast of changes that may impact on the drinking water quality and, if necessary, proactively intervene to avert potential problems.

The organisation's source water management programme also extends to water conservation. Here, Rand Water is managing several Working for Water projects, which aim to increase the Yield of specific catchments through the removal of alien invasive vegetation. Wetlands are also rehabilitated as part of this programme to gain the most possible benefit from the natural purification and water storage capabilities of these systems. The working for Water initiative has assisted in creating more than 2 000 job opportunities in areas where unemployment is rife.

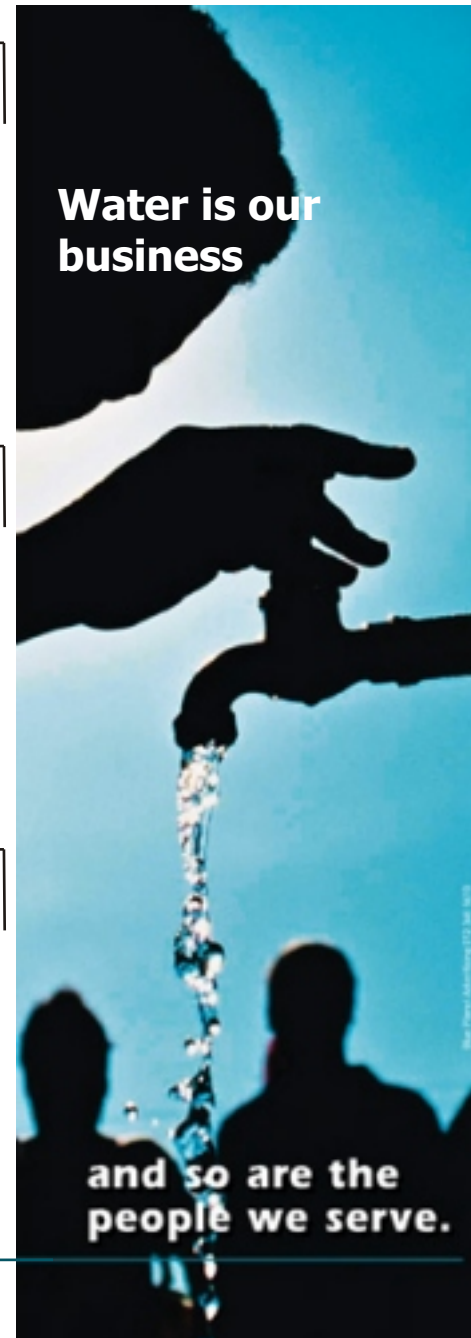


Fig a5.

CATCHMENTS

Over 99% of the water abstracted and treated by Rand Water in recent years is surface water taken from the Vaal Dam, fed by the Vaal and Wilge Rivers. This surface water is generally of good quality and relatively unpolluted as it drains from a catchment area, which is mainly rural, with agriculture being the main activity. It consists of both the mixed farming areas of Mpumalanga and the eastern Free State, and the Drakensberg area where stock farming predominates. In stark contrast, the catchment of the Vaal River Barrage Reservoir, downstream from the Vaal Dam, shows the destructive effects on the water quality of urbanisation and intensive industrial activity. This catchment is characterised by various central business districts surrounded by high-density urban development including formal, semi-formal and informal sectors. Sixty wastewater treatment plants generating approximately 900 million litres per day of effluent serve these sectors. Also in this catchment are countless industries, and numerous operating and disbanded mines which all bring their own pollution problems.

Rand Water no longer draws water from the Vaal River Barrage Reservoir, other than in emergencies, as the Suikerbosrand and Klip Rivers plus tributaries such as Taaibosspuit, Rietspruit and Leeuspruit, which drain the formal and informal areas of Gauteng, have adversely influenced the quality of the water. However, should Rand Water ever be required in the future to draw water from these river systems, the present purification processes would need to be modified to ensure we meet the demand for high quality drinking water.

THE VAAL RIVER BARRAGE RESERVOIR

Located 80 km downstream from the Vaal Dam, the Vaal River Barrage Reservoir, with a capacity of 54 211 million litres, belongs to Rand Water. It is the hub of water sport and recreation in Gauteng, and Rand Water has put into place a comprehensive management programme to protect it from urban development, industrial pollution and recreational use. Measures in place include riparian development control and protection of aquatic life. An intensive monitoring programme routinely gives the public information on any health risks related to the various uses of the water and is available via the Internet as well as through pamphlets and on the notice boards at the various public resorts along the river.



Fig a6.



Fig a7.

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TUGELA-VAAL AND DRAKENSBERG PUMPED STORAGE SCHEMES

Growing demand and the threat of drought has necessitated the development of back-up schemes. Since 1974, the water in the Vaal Rivers has been supplemented by the Tugela-Vaal scheme, through the inter-basin transfer of water from the Tugela River in KwaZulu Natal. The inflow rate was substantially increased in 1982 by the commissioning of the Drakensberg pumped storage scheme.

Water is released as required from Sterkfontein Dam into the Vaal River system via the Nuwejaar Spruit and the Wilge River. The availability of water from the Tugela-Vaal scheme enabled Rand Water to maintain restricted but adequate water supplies to consumers during the drought of 1983 and 1995.

LESOTHO HIGHLANDS WATER PROJECT

In 1986, the governments of the Kingdom of Lesotho and South Africa signed a treaty sealing the Lesotho Highlands Water Project (LHWP) for the transfer of water from Lesotho to supplement the Vaal Dam. The treaty specified that South Africa was responsible for paying all water transfer related costs and Lesotho was to foot the bill for hydroelectric power and ancillary development projects within the country. In South Africa, the project has been partly funded by a levy charged to consumers within Rand Water's service area, which, together with the water tariff, contributes towards enabling South Africa to meet its loan repayment liabilities.

The entire project comprises six dams and three pumping stations that will divert the flow of the Orange River via tunnels through the Maluti Mountains, and channel the water to the eastern Free State and on to the Vaal Dam. Once complete, it should substantially augment the water resources available to the ever-growing population of Gauteng, and those residing and working the vast area supplied with drinking water by Rand Water.

The first phase of the ambitious Lesotho Highlands water Project to meet the expected demand of water in the Gauteng province up to the year 2020 was completed in 1998. This phase of the project included the construction of the Katse Dam and an underground power station.



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Fig a8.



ABSTRACTION AND PURIFICATION

Rand Water abstracts its raw water from the Vaal Dam via a canal and gravity pipeline, and by pumping from the Vaal River Barrage Reservoir at Lethabo, Zuikerbosch and Vereeniging. A small quantity of water is also abstracted from underground sources at Zuurbekom. After abstraction, the water undergoes a complex purification process to ensure it meets the stringent standards set for drinking water. Conventional treatment processes remove the suspended material and disinfect the water prior to pumping to the local authorities, the mining industry and other large industrial concerns. Each stage in the purification process is accompanied by changes in the physical and chemical composition of the water. These changes are constantly monitored and corrective action is taken to prevent the water quality from deviating from the prescribed limits.

The process involves seven stages, which are: coagulation, flocculation, sedimentation, stabilisation, filtration, disinfection and chloramination.

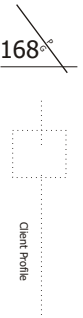
SLUDGE DISPOSAL

Between 500 and 1 300 tons of dry sludge are produced each day during the purification process. This is removed from the sedimentation tanks at Zuikerbosch and Vereeniging in thin slurry containing 3% mass by volume of dry sludge.

The sludge is pumped to Rand Water's sludge disposal site at Panfontein. Here it is dosed with an organic flocculent in gravity thickened plants to aid the separation of the solids from the liquid. The thickened sludge is pumped onto drying beds where it is dried by evaporation and the clear supernatant fluid is drawn off and returned to the purification system.

PUMPING TO GAUTENG AND ELSEWHERE

Rand Water is the only bulk water supplier in the world that provides water to a metropolitan centre that is not situated on a large waterway. With Johannesburg some 70 km away from the Vaal River, and ranging between 375 and 400 metres higher in altitude, Rand Water's pumping and infrastructure costs to deliver drinking water to its customers from the Zuikerbosch and Vereeniging purification stations are a major expense.



DELIVERY AND DISTRIBUTION OF WATER

Rand Water has the capacity to supply 5 184 million litres per day although the average daily demand is far less ranging, for example in 1998/1999, from a low of 2 399 million litres per day to a record breaking high of 3 745 million litres per day.

Rand Water's infrastructure includes two main water treatment plants where raw water is purified. Rand Water operates and maintains 10 primary pumping systems as 11 booster-pumping systems throughout its area of supply. In addition, it owns and operates 53 bulk storage reservoirs that form an integral part of the distribution system and allow for variations in the daily and weekly demands while maintaining relatively uniform pumping rates. They also provide reserve storage in the event of scheduled or unscheduled interruption in supply over the widespread system. The largest reservoir has the capacity of 652 00CM.

Ninety five percent of the treated water pumped from Zuikerbosch and Vereeniging is pumped onwards via Zwartkopjes, Palmiet, Eikenhof and Mapleton booster pumping stations through some 2 800 km of large diameter pipeline to 53 strategically located service reservoirs. The pipe network comprises 2 800 km of which 1 272 km are pumping mains and 1 557 km are gravity mains. The diameters of the pipes vary between 300 mm and 3 523 mm. 789 isolating valves, 3 014 air valves, 1 315 scour valves and measure by 1 468 consumer meters control water distribution.

The water is delivered in bulk from reservoirs to Rand Water's customers. These customers are the final link in the chain and, in turn, supply the drinking water to the general population and businesses.

RESERVOIR TECHNOLOGY

In 1997, Rand Water completed building the Klipriviersberg Reservoir south of Johannesburg. To achieve economies of scale and to meet its current and projected requirements in the Gauteng area, Rand Water built one large reservoir rather than several smaller ones. This presented unique design and construction challenges, as the requirement capacity was 650 mega-litre. (A reservoir with a capacity of 200 mega-litres is generally considered to be large.) Making this the largest covered concrete potable water reservoir in the Southern hemisphere and possible in the world. Its area is equivalent to about eight rugby fields, with a depth of 13m.



Fig a9.



Fig a10.



Fig a11.

Rand Water has long been recognised as a leader in reinforced concrete water retaining structures. Years of experience enabled the utility to design and build a reservoir of this capacity such that the various structural elements not only contain the 650 000 tonnes of water but also accommodate soil movements. In order to comply with Rand Water's environmental protection philosophy, the reservoir was built into the side of the Klipriviersberg hills, making it as inconspicuous as possible. Most of the rock excavated from the hill was crushed and used to make concrete, from which the reservoir was constructed.

On completion of the reservoir, the construction site was completely rehabilitated. The reservoir has since won a Fulton Award for excellence in the use of concrete.

EXCELLENCE IN TECHNOLOGY THROUGH INNOVATION

Rand Water has to provide water in such complex conditions as the altitude and distances from the major waterways. This means that pumping and infrastructure costs for the 2 800 km of piping required are usually a major cost consideration. Rand Water has thus become an innovator, by necessity, in large diameter high-pressure pipe technology. Rand Water has developed technology that allows it to use thin walled pipes that are expected to last at least 75 years. Two of these technologies include pipe stiffening and corrosion protection.

PIPE STIFFENER TECHNOLOGY

Rand Water uses trapezoidal stiffeners to stop the pipes buckling under the external soil loads and internal vacuum pressure. Large diameter thin wall steel pipes would normally require flat ring stiffeners at close spacing to avoid buckling. The use of trapezoidal stiffeners has allowed the spacing to be increased up to 6 meters. The main advantage of this technology is a significant cost saving as thinner pipe wall steel and fewer stiffeners are used.

CORROSION PROTECTION

The organisation has perfected an effective method for the lining of large diameter pipes, using in-situ cement mortar. This has a life span of up to 100 years and, for environmental reasons, is preferable to bitumen. The cement mortar is put in place using a spray method and smooth steel troweling after the pipes are laid and buried in the ground. This is efficient and quick, allowing more effective pipe laying and alignment.

ZONE METERING

The objectives of this project include conducting a more accurate water balance, monitoring draw-off patterns, determining water leaks and monitoring the conditions of pipes.

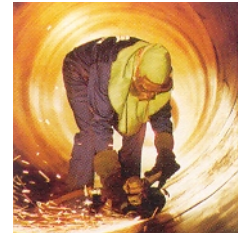


Fig a12.

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ENGINEERING SERVICES

Rand Water's Engineering Division is able to provide a wide range of Engineering services:

- **Planning:** Planning and provision of bulk water supply infrastructure to meet future demands. Integration of information and planning methods with suppliers and clients. The primary function of the Planning Department is to recommend and support the most cost effective and efficient use of existing and new infrastructures to meet customer demands. They do demand forecasting, hydraulic water quality analysis, infrastructure analysis, including financial viability calculations and financial optimisation; manage customers' water point connections and upgrades.
- **Survey:** Rand Water has an entire department dedicated to deliver the finest quality surveying, draughting and topographical plans, enabling engineering project design to be accurate and hence more cost effective.
- **Geographical Information System:** Approximately 80% of all data has a spatial connotation. Rand Water uses the GIS to link data or information to an object to which it is associated. Clients can then view images (photographs), documents, spreadsheets, database files and reports through an intranet viewer that make decision making easier.
- **Design:** This service forms part of all engineering projects in all the various disciplines. It is generally the theoretical process, which will be used to achieve the objective of the project. This includes an analysis of technical details, calculations, validation and verification, modelling and testing preceding implementation.
- **Project Management:** This involves a time and cost analysis, overseeing the project from the conception of the project until the end of the project. Rand Water has a project management department, which is able to provide fully inclusive project management services.
- **Quality Management:** This is the continual monitoring of the quality of materials used in the project and the workmanship of work done. Ensuring that the customer gets the best quality of work at a cost effective rate.
- **Construction Supervision:** Supervising all construction involved in the project. The structure must meet international standards and it is constantly monitored and controlled.



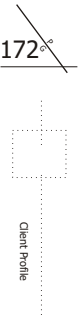
Fig a13. Engineering skills

- Installation Supervision: Supervising all installations of equipment needed.
- Commissioning: Rand Water will commission the project and monitor the working solution.
- Training: Training is provided on all equipment processes involved in the project, ensuring that the solution is operated efficiently.
- Pipeline renovations: Rand Water is fully capacitated to restore existing pipelines and fixing pipe leaks. Considering how much money can be saved by making sure that pipelines are in good condition and that future leaks can be avoided, it is an activity both beneficial for Rand Water and external customers (a service currently provided to external customers). Existing leaks can be identified and repaired with the most cost effective pipeline engineering solutions.
- Infrastructure refurbishment: This service includes restoring existing structures and processes already in use by the customer. Utilizing the existing infrastructure and saving the customer money.

These services span all the Water Engineering related disciplines namely:

1. Survey
2. Pipelines
3. Mechanical
4. Electrical
5. Instrumentation
6. Automation
7. Process/Chemical

It is this kind of knowledge and expertise that ensures healthy and clean drinking water every day to millions of people. Having said this, Rand Water believes that their greatest achievements are the services and dedication they give to their customers.



MEETING THE WATER DEMANDS

Rand Water is responsible for the infrastructure necessary to supply water to meet the projected demand. And ongoing programme of proper refurbishment, renovation and replacement of pipelines is on of Rand Water's priorities.

With more than 2 800 km of pipelines in service with diameters ranging from 300 to 3 500 mm, both proactive and reactive maintenance are a necessity.

Leaks are proactively kept to an absolute minimum through the use of protective coatings and cathodic protection of the pipeline network. Reactive maintenance takes the form of repairing leaks found by pipeline patrols or pinpointed from reports by the public.

In 1999 the projected demand for drinking water was, on average, 69% of Rand Water's capacity. This is equivalent, each day, to 36 000 average sized home pools and is, by world standards, a very large quantity of water. By 2005, Rand Water estimates that consumers will use an annual average of 3 677 million litres of drinking water per day and an average daily quantity of 4 500 million litres over any peak seven day period.

THE QUEST FOR PURITY

Rand Water has supplied high quality tap water, meeting the requirements of the world's leading developed nation, to its consumer since 1903. Critical to this delivery are Rand Water's scientific services staff that are engaged in a ceaseless quest to improve water quality and protect the raw water at its source. The division is responsible for operational audits, applied research and resource protection. It also provides a water quality information service to Rand Water's customers, which includes handling consumer complaints linked to water quality.



Fig a14.



QUALITY AUDITING

Stringent guidelines are set for the quality of drinking water through all stages of the purification process and throughout the distribution system to ensure that the water reaching Rand Water's customers meets the required standards. Guidelines for the quality of the water supplied by Rand Water were compiled using international and national drinking water quality criteria including those prescribed by the World Health Organisation (WHO), the South African Bureau of Standards (SABS) and relevant government departments.

Rand Water's chemical and microbiological laboratories carry out over 250 000 analyses every year on water samples from 200 pints in rivers, factories and sewage effluents in the catchment area and over 1.2 million analyses each year on the purification process. Chemical, physical and hydro biological tests are also continuously conducted on samples of potable water in the distribution system.

WATER QUALITY RESEARCH

Rand Water is engaged in ongoing research to develop new techniques of water purification and make existing methods more cost effective.

It has one of the best-equipped water laboratories in South Africa, which have been awarded accreditation by the National Calibration Service, and boasts world-class technical expertise and analytical capability.

WATER QUALITY CUSTOMER SERVICE

Concern over the quality of tap water has become a topical issue worldwide. Now more than ever, people's acceptance of the quality of their tap water has become a measure of Rand Water's success.

Rand Water has launched a concerted educational campaign over the past years to make consumers aware that the tap water being supplied to Gauteng rates among the best in the world. The Tap Analysis Programme (TAP) offers a service testing water samples from people's homes on an ongoing basis to monitor quality trend.



Fig a15.



Fig a16.

REACHING OUT TO THE BROADER COMMUNITY

Since 1994 Rand Water has become more and more involved in the total water cycle to improve service to the end customers who actually use the water. The organisation fully supports and is committed to furthering the government's Water Supply and Sanitation Policy. Emphasis is given to community based; people-driven projects, which build capacity within previously, disadvantaged communities and empower them to manage water supplies efficiently and effectively.

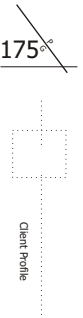
In 1994 Rand Water established its Community Support Services Division, which is actively involved in offering assistance to support and strengthen the capacity of water service authorities and promote water conservation. The main responsibilities of the division cover communications, marketing, community projects and retail water.

Actively involved in creating solution to water and sanitation service problems in communities and local authorities, Rand Water's Community Based Projects has a practical and developmental approach to solving seemingly intractable problems. It is a leader in its dealings with informal settlements. The use of its comprehensive database to manage information about the settlements in partnership with the Department of Water Affairs and Forestry, municipalities and the provinces is vital asset in helping communities most in need of lifeline assistance.

The purpose of the Community Based Projects Department is to provide a centralised community development support services chain, and in so doing, assist Rand Water in fulfilling its commitment to meeting the aspirations of the previously disadvantaged communities and the needs of all relevant stakeholders.

The Department has a proud history of making a difference in the communities that they work in. The department is involved in cost-recoverable, institutional development, corporate social responsibilities, SMME development, non-recoverable and Rand Water investment projects. The cost-recoverable projects have been funded by external sources like the Department of Water Affairs and Forestry.]

The Water Wise Centre in Pretoria would fall under this Department of Rand Water. It will be part of the outreach to the broader community, thus the community of Pretoria. It will be a community project in the sense of the word that educators, scholars and anyone from the surrounding area could be educated at this centre.



In its approach to its work, the Community Based Projects Department seeks:

- To maximise economic and employment opportunities through the development of emerging contractors and the use of labour construction methodologies
- To build the capacity of community and newly created local government structures to ensure the sustainable management of water and sanitation systems
- To promote the integration of water and sanitation projects into broader development initiatives
- To act a Implementation Agent for the Rand Water Foundation
- To strive for sustainable water service delivery
- To focus on underprivileged communities and under-served areas giving priority to Rand Water's area of supply



The department has a core of skilled and experienced staff from a number of disciplines. The services include:

- Project management
- Participatory and community development
- Institutional and social development
- Facilitation of community based water and sanitation services
- Community guidelines
- Generic training plan
- Implementation agent
- Site tours



COMMUNITY BASED PROJECTS

Mnweni Trust:

The Mnweni Trust was launched in 1999 and is the culmination of years of work resulting from a close association between Rand Water, the wildlife Environment Society of South Africa, Bergwatch, and the communities of the amaNgwane in the Upper Mnweni Valley of the Drakensberg. The objective of the trust is to manage and promote the protection, conservation and restoration of the Upper Mnweni Catchment area through education, appropriate local economic development and the development of a conservation-based ethic amongst the people of the amaNgwane.

Winterveldt Water Supply Projects:

This project was identified as a Presidential leak Project in 1994. The Department of Water Affairs and Forestry appointed Rand Water as the Implementing Agent for the project. The objectives of this project is to provide water to all the people of Winterveldt with a least minimum standard of water supply, 25 litres per capita per day and to create employment opportunities for the local community.

Winterveldt Eco-Circle Vegetable Garden project:

The aim of the project is to provide unemployed community members with skills and knowledge to improve their health, quality of life and the environment. It will also empower individuals and communities to become self-reliant in food production and within a short period help generate small businesses. The Kromkuil Nutritional Centre consists of about 30 40 households that will be trained to develop these vegetable gardens.

Bushbuckridge Infrastructure project:

The project entails the provision of bulk water infrastructure through the application of RDP principles including labour intensive construction, contractor development and community involvement and capacitation.

Ten Morgan Rural Community Sanitation project:

The project was established to achieve health improvements in the community by changing poor hygiene behaviour practices and improving sanitation facilities such that they are sustainable in the long term. The project is being implemented using DWAF's A/B approach to rural sanitation projects that involves funding of improved sanitation facilities through household subsidies.



Fig a17.



Fig a18.

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DACE Alien Vegetation Eradication project:

The main focus of this project is the eradication of seedlings and coppice of the Blue Gum and Wattle tree, which consumes lots of water around the water catchment areas. The project objectives is to protect and restore biological diversity by reducing the competition by invading alien plants, enhance water security through regaining control over alien plants, improve the ecological integrity of the natural systems, and to develop and maximise social and economic benefits through the training and employment of local community on the project.

Informal Settlement Encroachment project:

This project aims to ensure that all informal settlement communities who have potential to use Rand Water's properties (land, pipeline and servitude to the future) are stopped from achieving such potentiality, and the reactive is to ensure that all informal settlement communities who are currently using Rand Water's properties are removed from the properties with immediate effect.

Leak Repair project:

Rand Water, in partnership with the Department of Public Works, is providing funding to complete a free one-off community project in Daveyton to repair consumer water installations that have leaks and retrofit houses with dual flush cisterns as a further means to reduce water consumption. People from the area are employed on a contract basis to fill various positions on the project which reduce costs and empowers the communities by providing additional job opportunities and facilitating the development of skills, as well as maximising the retention of funds within the community.

EDUCATION AND TRAINING

Besides visibility in national conservation efforts such as the National Water Week, Rand Water is also deeply involved in a wide range of educational programmes, which focus on promoting water conservation and demand management. These programmes take the form of organised site visits, television programs, school workshops, road shows, TV and printed media advertisements.



SALES AND CUSTOMER SERVICES

The whole way Rand Water approaches its business has been restructured to serve the needs of its customers. The changing political, economic and social environment has meant that the responsibilities of municipalities to communities have increased enormously. Never before in the history of South Africa has there been so much pressure on the public sector to deliver services to improve the health, safety and quality of life on the people it serves.

Rand Water regards its re-invention as growth for both the organisation and its customers. For customers, the re-invention means that Rand Water will direct far more energy at understanding the needs of its customers and matching services to those needed by its customers. Rand Water is able to offer the following services to ensure that the operations of its customers remain sustainable:

- Engineering
- Water treatment
- Institutional
- Retail water
- Bulk water
- Water Cycle management
- Training and capacity development
- Sanitation
- Communication and education programmes

CUSTOMER INTERACTION

Customers have easy access to the one-stop public service utility through a 24 hour Customer Services Centre and through other customer interaction mechanisms. These mechanisms include the role of the regional account executives and industry account executives that are the direct interface between Rand Water and customers; and numerous Forums that are held on a regular basis with customers and other key stakeholders.



Fig a19. Water drop

