

## UN CEO WATER MANDATE


### De Beers Family of Companies Communication on Progress

#### Statement of continued support for the UN Global Compact's CEO Water Mandate

De Beers signed up to the Water Mandate in November 2009 and actively participated in its first CEO Water Mandate Working Conference during November 2010. This Communication on Progress is our first and this stand-alone report is to fulfill the requirements of the UN CEO Water Mandate Transparency Policy to feed back on our policy, standards and actions regarding water stewardship. The De Beers Family of Companies produces an annual Report to Society which serves as the group's communication on progress for the UN Global Compact. In future years the CEO Water Mandate communication on progress will be incorporated into the Report to Society which is disseminated internally and externally and available on the company website, [www.debeersgroup.com](http://www.debeersgroup.com).

Most of our mines are located in semi-arid, water stressed environments in Botswana, Namibia and South Africa. Water, a limited natural resource, is essential for the operation of our mines. It is therefore a priority for us to investigate alternative sources of water and to operate using water resources as efficiently and sustainably as possible to minimise the impact of our water use. We recognise the value of water as a shared resource and the need for sound stewardship of water for the sustainability of our mines and neighbouring communities, downstream users and ecosystems and ecosystem services. We acknowledge the interrelatedness between stewardship of energy, water, biodiversity, waste and the influence that climate change has on these, and in particular on water availability. The challenge lies in ensuring sustained equitable access to water of an appropriate quality for both our business and local communities. Through dialogue with governments, water users and other Water Mandate endorsers, we intend to grow our understanding of good water management policies and programmes on the journey toward better water stewardship within and beyond our operations.

We reaffirm De Beers continued support for the CEO Water Mandate and renew the company's commitment to the initiative and its six elements and hence to advancing practices in sustainable water management. Further information on our water management practices can be found in our previous Reports to Society ([www.debeersgroup.com](http://www.debeersgroup.com)) and in our upcoming report on our sustainability performance in 2010, which will be published in the third quarter of 2011.



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## **THE DE BEERS FAMILY OF COMPANIES**

De Beers, established in 1888, is the world's leading rough diamond company with unrivalled expertise in the exploration, mining and marketing of diamonds. Together with its joint venture partners, De Beers operates in a number of countries and employs more than 16,000 people, the majority of whom work within the exploration and mining operations. It is the world's largest natural diamond producer with mining operations across Botswana, Namibia, South Africa and Canada. De Beers has been a member of the United Nations Global Compact since 2005.

As part of the company's operating philosophy, the people of De Beers are committed to Living up to Diamonds by making a lasting contribution to the communities in which they live and work. In the countries in which we have mining operations, this means carrying out profitable business, whilst at the same time helping Governments achieve their aspirations of turning natural resources into shared national wealth. De Beers encourages sustainable working to ensure long-term positive development for Africa, and returns more than US\$2.0 billion to the continent every year.

## **DESCRIPTION OF POLICIES AND PRACTICAL ACTION**

### **Environmental Policy and Standards**

The latest version of the De Beers Family of Companies Environmental Policy (2009) covers all aspects of environmental management, with water being an important aspect thereof. This policy describes commitment to:

- Managing all aspects of environmental policy as an integral part of business while adopting a precautionary approach to environmental challenges
- Developing and implementing appropriate environmental policies, systems, programmes and training and ensuring these are adequately resourced
- Requiring all mining operations to be certified compliant with the ISO 14001 international standard for environmental management systems as the foundation for continual improvement
- Conducting all activities in compliance with applicable legislation and other environmental requirements to which De Beers has subscribed and being aligned with international good practice.
- Adopting the mitigation hierarchy approach by first assessing, seeking to avoid, minimizing and then mitigating potential environmental impacts, risks and emergencies when planning, designing and implementing exploration, mining, marketing and related activities.
- Aiming to have no net loss of biodiversity over the operating lifetime collectively for the Family of Companies by minimising the negative impacts through responsible planning and stewardship of biodiversity, from exploration through to the closure of operations and making a contribution to biodiversity conservation in the regions within which we operate.
- Respecting legally designated Protected Areas and key biodiversity areas and not operating within World Heritage Sites.
- Promoting the efficient and sustainable use of natural resources, especially energy and water, by employing the principles of reduction, recovery, re-use and recycling.
- Reducing greenhouse gas emissions and participating in climate change initiatives.

- Managing effluents, wastes, emissions, dust and the use of hazardous substances to prevent pollution.
- Ensuring comprehensive environmental planning and costing for operational and closure phases is undertaken and that the financial provision for present and expected future environmental liabilities and obligations is included in business plans and annual accounts.
- Fostering awareness across the organisation, communicating and building a culture of shared responsibility and accountability for the environment.
- Engaging and co-operating openly with governments, local communities, employees and other interested parties to improve understanding, promote constructive interaction and seek solutions to environmental and social issues.
- Influencing joint venture partnerships to follow practices consistent with this policy and ensuring that contractors do so.
- Regularly monitoring, auditing and reviewing environmental performance and compliance to ensure continual improvement, and
- Reporting environmental performance publicly and providing assurance to the Boards of Directors.

The De Beers Family of Companies operates according to six Environmental Outcome and Performance Standards that give effect to the Environmental Policy, namely standards for Lifecycle Planning, Water, Biodiversity, Climate Change, Waste and Pollution Prevention and Environmental Reporting. Water issues are pertinent to each of these and the stated desired outcomes are:

- No water used unless demonstrably required.
- 100% of Mining operations manage their water supply and demand to ensure demonstrable water efficiency and achieve water sustainability.
- 100% of operations follow the hierarchy to avoid, minimise and mitigate pollution on water resources.

The actions related to the six key areas under the Water Mandate are given hereafter. A number of the initiatives and actions relate to addressing more than one of the six elements but are reported in the section considered most relevant. Specific annual water consumption figures and trends are to be found in the annual Reports to Society of the De Beers Family of Companies.

## **Direct operations**

### *Water in the mining lifecycle*

Water management and sustainability is included in business decision-making across the lifecycle of the operations, from exploration activities through to project planning, mining operations, and closure planning and execution. The aim is to first avoid an impact on water resources and / or quality, and if not possible then to minimise, mitigate and finally appropriately manage the aspect. Within exploration activities, water availability and quality is included in the social and environmental baseline assessments that are conducted during exploration. Water sampling around established field camps is conducted to determine whether the water is suitable for use in the camp and to monitor whether the camp activities may impact on the groundwater.

Water issues are considered and integrated into project planning. Baseline information of the surface water and groundwater regimes, the location of existing water sources and meteorological data is collected and used during planning. Alternative water supplies and sources (e.g. sea water, brackish, saline groundwater) are considered. Mine designs and plans promote water efficiency and sustainability by taking into account potential affects on water resources and are developed to promote minimal consumption, recycling and least possible discharges. Water recovered from all open pit dewatering systems is re-used in ore treatment. Trade-offs between energy and water consumption form part of decision-making process. Climate change scenarios and other water issues are considered as these may impact on water security, quality, cost and regional water sustainability. Careful consideration is given to not creating dependencies in terms of water provision to other users because this may make withdrawal from the area during closure of the operation problematic. An example of adaptive mine design is at Voorspoed mine where the mine infrastructure layout was designed to avoid a degraded wetland. Natural flow to this wetland was re-established and alien invasive plants removed and the natural water system and native biodiversity has returned.

All active mining operations and other key facilities run Environmental Management Systems that are certified to the international standard, ISO14001:2004. This means that environmental management is integrated into the operations and hence assessments and management plans with regard to all environmental aspects, including water, are done for the operations. Water awareness is also raised through the ISO14001 management systems, in corporate communications and through local projects that demonstrate this to employees. The mining operations develop, regularly review and update integrated water management plans. Water efficiency targets are set and reviewed to track progress in order to ensure continual improvement. Sampling, monitoring, tracking and evaluating both quality and quantity of surface water, groundwater and process discharge water is ongoing, throughout the life of the mine. Alien plant removal programmes on the properties and restoration of the natural vegetation positively influences water conservation. Mine Water Steering Committees ensure the alignment of the water strategies with best practices and legislation in addition to providing leadership on water conservation and demand management. During closure of operations, all aspects that could pollute water resources are removed or rehabilitated. Water monitoring continues until closure is obtained, or as required by the regulatory authority having jurisdiction.

#### *Water-related reporting*

The De Beers Family of Companies has a group-wide environmental reporting system whereby monthly water consumption is recorded into a central database by all exploration and mining operations and other facilities across countries of operation. This data is reported in the following categories, consolidated and externally reported on an annual basis:

- Natural potable water
- Treated potable water
- Non-potable water excluding re-used / recycled water
- Re-used / recycled water
- Water from dewatering processes not used on the operation
- Seawater purified for use
- Seawater to land

This reporting has been ongoing since 2004 with increasing levels of completeness and accuracy to assist with determining the water footprint by operation, country and globally. Water consumption is contextualized by the locations with the broad difference being between the northern hemisphere mines where water is abundant versus the southern hemisphere mines in Africa where water is scarce.

During 2010, a new Incident Reporting System was introduced within the De Beers Family of Companies to record environmental incidents into categories for both Severity and Type. Two of these incident types are Pollution and Resource wastage. With regard to water, this reporting will assist in better analysis and corrective action of incidents related to water resource use / wastage and to pollution incident affecting water sources.

#### *Water targets*

The De Beers Family of Companies Water Standard requires all mining operations to set targets and this may take different forms depending on the type of operation. Many water efficiency measures have been incorporated and there are ongoing efforts to reduce water usage against targets. Three examples are given below:

- Debswana – the 50:50 venture between De Beers and the government of the Republic of Botswana - has both the largest production (typically two thirds of group diamond production) and a water footprint of approximately forty percent of the total new water usage within the De Beers Family of Companies. Through ambitious target setting in 2003, Debswana reduced water by 35% by 2008. This was largely as a result of improved slimes recycling and thickening, increased use of rainfall and storm water runoff, and reduced wastage.
- De Beers Consolidated Mines – comprising the South African mining operations – with approximately a quarter of the group diamond production and a quarter of new water usage has set a water reduction target of 15% (through efficiency improvement) by 2015 using a 2007 base year. At Voorspoed Mine, the operation continues to operate a largely closed water circuit, reusing most of its treatment process water from on-site dams. At Kimberley Mines, a paste and thickened tailings system has reduced water consumption considerably and have been reported on and presented at various international conferences.
- De Beers Marine vessels use seawater in the treatment process and onboard domestic freshwater requirements are obtained from desalination plants. This does not always meet the demand so additional water is transported from shore. Although this requirement is relatively low, the freshwater is drawn from the closest coastal town, Port Nolloth, which is in a water scarce region of South Africa. To limit water use from the town, in August 2010 targets were established to drive efficiencies in onboard water-making to minimise delivery of freshwater from Port Nolloth. Since implementation of the target there has already been a 25% improvement in the average generation of fresh water per day, thereby reducing the amount of water needed from Port Nolloth.

#### *Use of alternative water sources and re-use of water*

The mines on the west coast of southern Africa use seawater for treatment of ore because freshwater is a scarce commodity in these areas. At all operations, significant steps have been taken to increase the use of reused/recycled water which typically account for over 40% of the total freshwater consumption. A variety of projects have been introduced that incorporate alternative

water uses, re-use water or reduce water consumption and raise awareness of water sustainability. Some examples are:

- The introduction of a rainfall harvesting system that captures runoff from Orapa town paved surfaces into a one million cubic metre storm water dam at Orapa Mine in Botswana demonstrated significant water and costs savings. The project showed a two year payback on the implementation cost of BWP 58 million. This was cited as excellent example of rainfall harvesting in the National Scoping Report of the Integrated Water Resources Management Program, produced by the Government of the Republic of Botswana in 2010.
- At Namdeb - our 50:50 venture between De Beers and the government of the Republic of Namibia - effluent from the one section of the treatment process was diverted for re-use to another section before being sent to the fine residue dam. Ponds and a penstocks system were introduced to enable recycling of clean water back to the treatment plant. This reduced direct abstraction from the river by 70%.
- At Orapa in Botswana, all sewage effluent is re-used as treatment process water.
- Dry landscaping has been introduced around offices at the Orapa mine.
- At the Diamond Trading Company and Debswana Technical Support Center in Botswana, rainwater harvesting is used for gardens and ablutions.
- The London offices have introduced dry urinals with sensors to trigger water flow.

In Botswana, alternative water sources are being investigated in the Boteti Area 45km northwest of Orapa. This has so far involved initial investigations into use of poorer quality water, the hypersaline groundwater. This water resource easily meets the water demand for the life of the Orapa cluster of mines. In addition, there is no competition for this resource with other users. A technical desalination solution is still needed and thermal desalination is being investigated. A 2011 study is proposed to examine the viability of desalinating this resource sufficiently for process use, potentially blended with fresh water. The by-products of the desalination process e.g. salt may be possible to use, will also be investigated for potential use. This will go through a full Environmental and Social Impact Assessment process and stakeholder consultation to ensure the full implications are assessed.

#### *Technology advances on water use*

New technologies to investigate alternative water uses and improve water efficiency have been investigated for the mines and include:

- The amendment of ore treatment processes to enable the use of saline water.
- Reduced groundwater use due to the installation of facilities for the capturing of storm water from urban areas.
- Electro-kinetic dewatering, which uses electric fields to extract the last remnants of water from thickened slime or slurry was fully investigated but not progressed due to efficiency and cost considerations.
- Conventional thickeners are to be replaced with high-rate thickeners to achieve water recoveries of over 90%.

#### *Water planning*

Climate change risks are most likely to manifest themselves in water scarcity, extreme weather events and rising temperatures in the vicinity of the operations. With 95% of the De Beers Family of Companies rough diamond production originating from arid regions across southern Africa, a

reduction in rainfall and consequent drop in regional water availability has to be factored into planning for sustainable production from the mines.

### **Supply chain and watershed management**

In order to continue to build ties with civil society organizations and at the same time build capacity to analyze and respond to watershed risk, De Beers is collaborating on a catchment management project with the Worldwide Fund for Nature-South Africa (WWF), a key international player on water from civil society. The Limpopo river basin is one of Southern Africa's cross boundary river basins and straddles four countries. The basin is a source of water for a population of more than 14 million people. The water management challenges in the basin pose a major risk to all stakeholders, including businesses dependent on water from the basin for their operations. In the late 1980's when De Beers Consolidated Mines primary mine in South Africa, Venetia, was planned and developed, great emphasis was placed on minimising the impact on the source of water. Continuing this approach to water stewardship, over and above the mine water management programme, in 2010 De Beers entered into an agreement with WWF to understand:

- the Venetia operation within a broader and dynamic socio-ecological landscape as it pertains to water risks,
- how the operation and other user needs in the priority catchments are potentially at risk in a changing world, and
- the responses required in terms of strategic and collaborative investments to reduce the shared risk and improve the resilience on water security.

WWF has partnered with the South African Council for Scientific and Industrial Research and Peace Parks Foundation to deliver on some of the key outputs of the project. The anticipated conservation outcomes from this initiative include capacitating water management institutions, protecting critical freshwater ecosystems in the catchment and empowering communities to engage in the effective management of water resources in the basin.

### **Collective action**

De Beers is actively involved in the United Kingdom UN Global Compact Network with membership and regular participation in the network's Steering Group. In 2009 De Beers hosted a UK UNGC Network meeting at the London offices, and in November 2010 De Beers actively participated in the three-day World Economic Forum / UN CEO Water Mandate meeting held in Cape Town.

De Beers is a member of the Responsible Jewelry Council and contributed to the formulation of its principles and codes of practice. Within these is a commitment to the efficient use of natural resources including water and requirements around tailings disposal. In Canada, as a member of the Mining Association of Canada, De Beers Canada is involved in the Towards Sustainable Mining Initiative that sets out commitments to address all areas of the mining industry's performance developed by the industry, in consultation with its communities of interest. One of the areas of focus is on effective tailing management which is an essential part of the broader water management programme.

Debswana continues to work with the Government of the Republic of Botswana and the United Nations Development Programme to promote long-term, integrated water resource planning throughout Botswana. This ongoing collaboration is intended to produce a new Integrated Water Resources Management Plan for the country. Debswana is also involved in the Standards Team of the Botswana Bureau of Standards in the development of National Water Quality Technical Standards including for Drinking Water, Bottled Drinking Water, Livestock Drinking Water and Irrigation Water.

Namdeb is involved in various bodies for the management of the Orange River, an international river that forms the southern border of the mining licence areas. This includes being part of the Orange River Mouth Interim Management Committee and participating in the Orange River Basin Stakeholder Forum. The Orange River is the only perennial river in the region and thus supports a great variety of plants. Waterbird counts (conducted twice a year) indicate that during the summer this wetland is the sixth richest wetland in southern Africa in terms of the overall number of birds supported. Strict access to the Orange River Mouth has served to protect the area quite well, resulting in a *bona fide* conservation area. The site is in a transboundary location and has been included in the proclamation of the Sperrgebiet National Park on the Namibian side, as well as being listed as a Ramsar site. With a Ramsar site within the mining licence area, great care is taken to avoid impacts on this unique ecosystem, and research in this area is supported and facilitated by Namdeb. Namdeb has been identified as a stakeholder on the Orange-Senqu River Commission and provides input to and logistical support for research initiatives in the mining licences.

## **Public Policy**

In September 2009 the De Beers Managing Director participated in the United Nations Leadership Forum on Climate Change in New York along with representatives of Governments, Business, Civil Society and the United Nations. He addressed the Water Security Session because of the crucial nature of water to both the business and need for all to play a role in water sustainability.

De Beers Consolidated Mines is actively involved in the South African Chamber of Mines through their Environmental Policy Committee in which water issues are discussed and contributions made to national water policy, legislative changes, stakeholder management and the sharing of best practices. The mines also participate in regional government structures through the water catchment agencies in their regions.

In Botswana, environmental personnel from Debswana have played a leading role in developing the capacity of the Botswana Chamber of Mines to engage both regulatory authorities and other civil society entities on environmental issues, including water management planning at the national level. In this way water related information is also readily disseminated to all mines in the country.

In Namibia, Namdeb actively participates and contributes to the setting of overall water frameworks, monitoring requirements and development through fora such as the Orange River Basin Stakeholder Forum.



## **Community Engagement**

The water impacts and opportunities for communities in the vicinity of the operations are understood through the Environmental and Social Impact Assessments and ongoing management systems and stakeholder engagement. Where appropriate, the operations work with local governments on the development of adequate water infrastructure. For example, a number of community-related initiatives have taken place in Namaqualand region in the Northern Cape of South Africa where there are many socio-economic challenges, such as:

- Jointly with government, Namaqualand mines built a water pipeline to supply Komaggas with water from the Buffels River, a project completed in 2008.
- The Koingnaas Mine infrastructure is also used to provide water to the Hondeklip Bay community.
- A central reverse osmosis water filtration plant is being installed at Koingnaas to give residents Class 1 water quality as opposed to the Class 2 water. The extraction of water from the aquifer is monitored to ensure that utilization of this resource is sustainable.
- In order to support local government in Namaqualand, two employees are members of the Namakwa Water Board, the water services provider to the Nama Khoi municipal area, giving of their time as community service.
- As part of proclamation of two mine towns in the Namaqualand mines area, Kleinzee and Koingnaas, the company is installing pre-paid water meters into each dwelling, working closely with the Nama Khoi and Kamiesberg Municipalities in this regard. This will most certainly lead to water conservation and prevent the non-payment for water.

Debswana water management and monitoring includes all surrounding areas to assess potential impact on other users. All water rights are linked to compensation agreements with other private users in the general areas and the impact has been carefully monitored managed and only small compensation has been required to be actioned to date to other users over the last 30 years of water abstraction.

In partnership with local stakeholders, the mines are involved in water education and awareness initiatives beyond just employees. Some examples are:

- Debswana has added the topic of water conservation to the syllabus at the mine primary schools and these schools regularly take part in World Water Day celebrations.
- At Voorspoed Mine, employees and their families joined in an initiative to clean up the area of the Vals River, in Kroonstad, the labour-sending area for the mine.

## **Transparency**

On-mine water issues are discussed at national and regional government level as required. The annual De Beers Group Report to Society ([www.debeersgroup.com](http://www.debeersgroup.com)) follows the Global Reporting Initiative's G3 Guidelines and includes detailed communication on water management and its relevant water performance indicators.

## **MEASUREMENT OF OUTCOMES**

The De Beers Family of Companies reports publicly on an annual basis according to the Global Reporting Initiative Guidelines and specifically:

- EN8 (core): Total water withdrawal by source
- EN9 (additional): Water sources significantly affected by withdrawal of water
- EN10 (additional): Percentage and total volume of water recycled and reused
- EN21 (core): Total water discharge by quality and destination
- EN25 (additional): Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organisation's discharges of water and runoff.

The detail can be found in the Reports to Society, found on [www.debeersgroup.com](http://www.debeersgroup.com).

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