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THE SOUTHERN AFRICAN SOCIETY OF AQUATIC SCIENTISTS

February 2005

NEW EXCO:
This is the last SASAqS News from the Gauteng Exco as most of the administrative transferral of duties is nearing completion. All future financial and administrative correspondence must please be addressed to Hendrik Jerling – financial (hjerling@pan.uzulu.ac.za) and Rodney Owen - administrative (rowen@pan.uzulu.ac.za).

SASAQS CONFERENCE 2005:
The 2005 Annual SASAqS conference will be held in Grahamstown from 13 to 15 July 2005. The conference will be held in conjunction with the Zoological Society of Southern Africa (ZSSA) conference**. Please note that SASAqS is not a co-host of the conference and thus people wishing to attend the conference will have to *register for the ZSSA conference***. The majority of the SASAqS presentations will form part of the ZSSA themes and programme. However, special sessions that are particular to SASAqS themes will also be arranged.
Deadlines:

- Submission of registration forms and payment - 31st March 2005 (after which a late registration fee will be applied).
- Submission of abstracts - 30th April.

For more information contact Lil Haigh IWR (Wetland Group): lilh@iwr.ru.ac.za and visit the conference website http://www.ru.ac.za/conferences/zooento2005/

LIFE MEMBER:
At the final Exco meeting the Gauteng Exco considered a nomination for life membership of the Society. A unanimous decision was taken to award Dr. Mark Chutter Life Membership in recognition of his tremendous service to the Society.

LEADERSHIP NEWS LETTERS: Attached also find Letters 28 to 32 on CMAs by Mark Dent. Any queries regarding back issues or other comments can be sent to Mark Dent (mark@netshare.co.za).

COURSES: SASS5 Training course: 19-21 September 2005, Sabie
Contact: Shaune Rogatschnig (shaune@nepid.co.za)
Nepid Consultants, PO BOX 108, Karino, 1204
Tel/ Fax: 013 747 2372, Cell: 083 313 2387
http://www.nepid.co.za

POSTS: Resource Quality Services, DWAF (2 posts) – see attached details

- Freshwater Specialist Scientist, Quality Assurance
- Assistant Director

Please visit the Society website on www.dwaf.gov.za/iwqs/sasaqs/ for updates on SASAqS matters.

COURSES

Training Course

SASS5: A Rapid Method for Water Quality Assessment

Venue: **Sabie, Mpumalanga, South Africa** Dates: **19 - 21st September 2005**

Aim: The aim of the course will be to provide practical experience in applying the SASS5 biomonitoring method.

Who should attend? Anyone interested in water quality management and the practical application of SASS. This includes people from government, industry, non-government organisations, consulting firms and research institutes.

Presenters:
Dr Rob Palmer (Nepid Consultants)
Mr Gerhard Diedericks (Environmental Biomonitoring Services)
Ms Christa Thirion (Department of Water Affairs and Forestry)

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CMA Leadership Letter 28 Complexity !

Integrated water resources management (IWRM) involving many stakeholder groups in the water allocation process is complex. No question about it !!! Until we accept this we will search in vain for the simple formula for IWRM and for the information and modelling systems that must accompany such management.

Faced with such complexity I find it encouraging to reflect on the response of the computer industry to complexity. Who better than the founder of IBM to set the scene.

"I think there is a world market for maybe five computers," (Thomas Watson, Chairman IBM, 1943).

The reasons given were complexity and cost. The computer industry response has been to accept that computers are incredibly complex. The industry players learned to manage complexity, not avoid it. They did not shy away from the complexity and continue to try to operate as "one man bands". They learned to manage collective intelligence and the results are present for all to see. Computers today are infinitely more complex than their predecessors of the 50's & 60's. Computers are cheap enough to be household commodities.

We in the water industry, who use computers a great deal in our work to run our "one man shows" or at best "small group shows" need to sit at the feet of the computer industry and learn about managing intellect, on the scale that they have.

What are they doing that we are not doing?

To answer this fully is the subject of several books. In brief, the computer industry acknowledged the complexity, up front, and thereafter followed that acknowledgement with behaviour that endorses their strong and consistent commitment to :-

- big teams
- co-operation (even with competitors on certain issues)
- finding de facto inter operability standards to assist integration
- rigorous controls in key areas and complete freedom in others.
- long term relationships rather than treating relationship building as a bazaar activity
- transcending organisational & other barriers to communication
- learning about the phenomenon of communication
- learning about the phenomenon of integration

- make available significant resources (in some documented cases, 30 % of project cost) to human behavioural issues, required by integration.

The computer industry's commitment to manage complexity, has certainly paid off. The results are evident and have literally changed our world. Based on the principles inherent in these commitments, the Intel processor chips (for example) are made by teams of 100's of scientists and engineers who have learned key lessons about creativity and control. They make large teams function as innovatively and nimbly as small teams.
A key area in which these lessons will assist CMA leaders is in their search to bring together the talent that we have in abundance in South Africa, to serve the CMAs information requirements.

The search for an integrating framework to bring together the plethora of skills, modelling and information systems in SA is rapidly becoming the key issue in proposed information support for CMAs. Increasingly the future CMA leadership is realising and acknowledging that the operational information complexities will be impossible to surmount unless the plethora of models and data sets which are unconnected, dis-integrated bits and pieces of the puzzle are properly connected into a world class framework.

CMA Leadership Letter 29 Interpretation is a key leadership function

Scrap developments aimed at creating the institutions that will give effect to the key principles of the 1998 National Water Act. Ignore the Constitutional roots of these principles, especially co-operative governance, inclusivity, equity, transparency and accessibility. Disregard the plethora of international conventions that South Africa has signed and that require these principles to be acted upon, by all. Ignore the implication that scrapping such principles will have on South Africa's role in SADC, NEPAD and the AU. Pass off as not important the growing links and funding from many international groups, which require that the principles of IWRM be translated into working institutional arrangements, on the ground. Above all ignore common sense.

Why?
Because we cannot afford what some conceive to be the structure and functions of the CMAs!

Does this sound sensible?
There are some "powerful" voices that are, to all intents and purposes, talking in this fashion.

Why should this be so when many others believe that the CMAs are absolutely essential and are affordable, if wisely lead ?
A difference in INTERPRETATION of what is required of CMAs, is at the root of these contrasts.

Two simple analogies may help to clarify this difference. Consider first the activities of an orchestra and then a rugby team. Both involve many role

players and require an integrated approach in which co-operation, co-ordination, clear rules and extensive practice are vital.

Imagine if the conductor were to bring on another musician to stand with her in front of the orchestra and "duplicate" the part of every musician who was not playing correctly. After a while two full orchestras would be on stage.

Imagine two rugby teams (one in red jerseys & one in green). Suppose that the coaches from each team had a complete replacement squad (waiting off the field) in red & white and green & white striped jerseys respectively. Picture the scene. The game gets under way and red number 9 makes a poor play, so whilst still leaving number 9 on the field, the coach simply adds a red & white striped number 9 to the game. Imagine this pattern being repeated each time a poor play was made, until there are 60 players on the field, in 4 different sets of jerseys!

Is it necessary to say more?

Leadership Letter 30 CMAs, the crucible for listening in dialogue

"*Behind the practice of speaking your voice is another principle for dialogue. This principle encourages us to remain aware of the* ***constant potential waiting to unfold through and around us.*** *By doing so I am able to take seriously the possibility that there is something to listen to."*

William Isaacs in *Dialogue and the art of thinking together*.

These words provided me with the means to articulate an insight I have been seeking for myself and for those with whom I am communicating. It answers for me, the question, "Why am I doing this?" Why am I writing these letters? In essence it is because I believe in the **potential** waiting to unfold. A potential for collective thoughts, insights, conversations and actions, which can transform our catchments and realise the dream of equity, efficiency and environmental sustainability.

These letters have stimulated thoughts and voices that I have then listened to and which have taught me so much. I understand that the letters have been a catalyst for many conversations, each adding to our collective understanding. Each helping to put together our fragmented thoughts into a more meaningful whole. Each contributing to our understanding of the complexity of the challenge and thus each helping us to be humbled into listening.

The words of Isaacs reinforce those below, which have had a profound effect on me since I first read them in 1995.

> *"Throughout human history the critical threats to survival came as dramatic external events: floods, earthquakes, attacks by wild animals or rival tribes, fire. Today, the most critical threats are* ***slow, gradual processes to which we have contributed ourselves****; environmental destruction, the global arms race, the decay of educational, family and community structures. These types of problems cannot be understood, given our*

*conventional ways of thinking. There is no beast to slay, no villain to vanquish, no one to blame - just a **need to think differently** and to understand the underlying patterns of dependency. Individual change is vital, but not sufficient. If we are going to address these conditions in any significant way, it will have to be at the level of collective thinking and understanding - at the level of organizations, communities and society."*

Senge, Roberts, Ross, Smith and Kleiner (1995) Pg 12

Society consists of a myriad of organisations and groupings, which are essential forms of organisation for certain tasks, BUT which have contributed to the fragmentation of our thoughts. Dialogue is a way of de-fragmenting our thoughts.

CMAs will form crucibles for dialogue. This is why I am so excited about their imminent formation. It will not be possible to "run away" from the dialogue. Any group that turns away will be constantly shepherded back to the crucible to speak, to listen and to think. There will be no alternate. CMAs will gridlock, say some. Yes, some CMAs will. They will suffer. Some CMAs will develop a dialogue and relationships that are deep and meaningful. They will flourish and prosper. You have the potential to influence yours.

Leadership Letter for CMAs. No: 31 - Functional Responsibilities & Relational Responsibilities

All organisations have **functional** responsibilities. Organisational plans and organograms record these. Our catchments are inhabited by a plethora of organisations all of whom have functional responsibilities. Taken collectively, these cover every conceivable function required.

Why then are our rivers in the state that they are?
What is missing?
I believe **relational** responsibilities are missing.

Our 1998 National Water Act and a plethora of similar acts in related areas plus plain common sense are telling us that to simply commit all the required functions into organisational plans is not enough. Performing functional responsibilities alone will NOT ensure equity, environmental sustainability and economic efficiency in water resources management.

It was Peter Senge who remarked, "One cannot know what it is to be human by looking at a list of the body parts and their functions". Human beings need to function in **relation** to others. As individuals we have **relational** responsibilities. So to do organisations seeking the goal of integrated water resources management in a democratic framework of co-operative governance. Our Constitution and our 1998 NWA demand sound relational responsibility from organisations.

The irony of water resources systems is that every problem is caused by somebody "solving" their problem, in isolation, without full regard for the consequences. Consider the following :-

- pesticide application and washoff;
- herbicides application and washoff;
- irrigation;
- fertilisers application and leaching;
- waste removal;
- storm water systems in cities;
- tarred roads;
- overgrazing to solve pressing financial needs;
- wetland drainage;

are all primarily designed to solve problems and yet in many cases they create secondary problems downstream.

Ironically even the laudable recycling of water by a city creates revenue reduction problems for the supplier of bulk water services. The sad part is that many of these problems are caused by organisations doing the **functional** part of their job well. The same cannot be said for their **relational** responsibilities in many instances. An inward focus, often created by well meaning "*terms of reference*", is ironically often the prime causes of this state of affairs.

Developing the health of these relational responsibilities should be a primary goal of CMA leaders. Ideally the CMA should not carry out ANY of the functional responsibilities of the organisations which already exist in the catchment. The CMA should focus on **relational** interventions which ensure

that the functional responsibilities of the stakeholder organisations :-

- complement each other;
- close gaps;
- develop economies of scale;
- avoid duplication;
- link up;
- consider systemic effects of actions;
- co-operate and
- co-ordinate activities.

In pursuing relational responsibilities the CMA leaders would do well to learn from the team coach who seeks to achieve :-

- a sense of timing,
- a will to win,
- a sense of teamness,
- passion,
- flexibility,
- dedication,
- preparedness to go the extra mile,
- systemic insight into the bigger picture,
- anticipation,
- empathy,
- co-ordination,
- humility,
- pride in **overall** outcomes,
- caring,
- listening ability,
- timely responses,
- generosity,
- communication,
- understanding,
- motivation,
- sharing ,
- openness,
- friendship,
- tenacity.

All these are elements that help to integrate the functional responsibilities and lead to success.

CMA Leadership Letter 32 - Municipal Finances Act and Integrated Development Plans will impact on CMA leadership

One of the things that leaders do well is to think systemically. They link issues that are normally outside the "vision" of most people and see the implications of these issues. In my conversations with potential leaders amongst CMA stakeholders I have noted that one such issue is the Municipal Finances Act (MFA), which became law in July 2004. The MFA makes provision, inter alia, to give teeth to the practice of benchmarking between Municipalities, when assessing expenditure on services eg. sewage, refuse removal, street lighting etc.

Municipalities will be key stakeholders in CMAs and will transfer this concept into CMAs. How much municipalities spend on their contributions to CMA will be watched carefully, inter alia, through benchmarking. In respect of CMA staff costs and information system cost, this will provide pressure to adopt best practices. Higher than the norm contributions to CMAs by municipalities will be noted and questioned.

In addition to this scrutiny by municipalities, the private sector will have their own "benchmarking" equivalent. One of the clear patterns already in evidence in the private sector is that a small group of experts represents the whole sector on the scientific and economic aspects of water. The forestry industry for example does not have 12 or so different groups of experts each dealing with water issues in their own future CMA. They have 1 group of water experts who cover all future CMAs where forestry has a significant interest

One of the biggest areas of cost saving will be to eliminate functional duplication. It is money that will "give teeth" to the concept of the CMAs concentrating on relational functions & not attempting to duplicate operational functions. I predict that this scrutiny of operational duplication will extend beyond the borders of each CMA and lead to far wider co-operation.

To quote a concrete example of such co-operation: The Municipalities are legally bound to develop Integrated Development Plans (IDPs) and the CMAs are legally bound to develop Catchment Management Strategies (CMSs). These 2 key efforts must tie up very closely indeed, insofar as water is concerned. Another key area of co-operation is bound to be in GIS.

POSTS: DEPARTMENT OF WATER AFFAIRS AND FORESTRY

81/103708
(Z 239)

ADVERTISEMENT OF POST

Dep./Admin.: **Department of Water Affairs and Forestry**		Date: 14 January 2005
Ref. No. S4/2/3/1/1	Enquiries: Mr BR.Madikizela	Tel. No. 012 - 808 9546

The post is new and budgeted for at D:RQS. It is crucial to fill the post of Freshwater Specialist Scientist, Quality Assurance in order for the Resource Quality Services to perform its function i.e. to develop and maintain water quality monitoring and assessment programmes, guidelines and methods required in water resource management functions. This function is captured by our mission, which is "to provide the national water resource management function with the water resource quality and technical information, guidelines and procedures necessary to address the strategic and operational requirements for the protection and assessment of water resource quality".

1. Designation of post: **Freshwater Specialist Scientist, Quality Assurance**

2. Salary scale: R193 920 – 209 988 - 225 138	3. Centre: Roodeplaat Dam

Candidates must be in possession of a minimum four year B Sc Hons degree in natural sciences or equivalent qualification in Quality Management as well as a minimum of four years practical experience in water resource quality assurance and monitoring. The following aspects are critical requirements for the position:

- The ability to conduct water resource quality control / assurance and draw scientifically sound conclusions based on collected data
- Assist the monitoring programme managers with the development of quality assurance plans / procedures
- Proven ability to communicate scientific information succinctly and clearly in writing in English, such as in training of water resource quality auditors.
- A proven ability to manage a multidisciplinary group of scientists and projects
- Computer literacy and ability to use software packages such as MS Word, Excel, and Internet
- Sound knowledge of the National Water Act (Act No. 36 of 1998) and other related legislation
- A candidate must have a code 08 driver's licence

5. Duties

The duties of the incumbent of this post will include the following:

- Development and establishment of an ISO 9001:2000 based quality management system (QMS)
- To link all national surface water resource quality monitoring programmes, in a phased manner with the QMS
- Operate and maintain the QMS as an integral part of the relevant national monitoring programmes
- Provide technical, scientific and administrative support to monitoring programme managers
- Asses and report on the effectiveness of the QMS on a regular basis
- Assess the feasibility of extending the QMS to cover the groundwater resource quality monitoring in due course
- Liaison with other Government Departments, local Authorities the public and other clients on the quality assurance of water resources
- Providing scientific and technical monitoring support service to the Department of Water Affairs and Forestry as requested
- Administrative management of, and scientific guidance to a multidisciplinary scientific team on quality assurance on national monitoring of water resource in South Africa.

6. Commencing salary

a) Commencing salaries not exceeding **R 225 138 per** annum may be granted in recognition of appropriate post-qualification/-~~apprenticeship~~* experience

OR

b) Commencing salary: **R 193 920** per annum.

7. Note/Remarks (Essential information not appropriate to the other headings). The RQS is an equal opportunity organization. Preference will be given to the previously disadvantaged and disabled applicants

8. Applications/Enquiries to the: **Director: Resource Quality Services, Private Bag X313, PRETORIA, 0001**
for Attention : Mr BR.Madikizela

9. Telephone: **012-808 9546**

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for Head of department

81/103708
(Z 239)

ADVERTISEMENT OF POST

Dep./Admin.: **Department of Water Affairs and Forestry**		Date: 20 December 2004
Ref. No. S4/2/3/2/1	Enquiries: BR Madikizela	Tel. No. 012 808 9546

It is crucial to fill the post of Assistant Director in order for the Resource Quality Services to perform its function, to develop and maintain water quality monitoring programmes on water resources. This function is determined by the Directorate's mission to provide the national water resource management function with the water resource quality and technical information, guidelines and procedures necessary to address the strategic and operational requirements for the protection and assessment of water resource quality.

1. Designation of post: **Assistant Director**

2. Salary scale: R166 221 – R181 795-192 975	3. Centre: Roodeplaat Dam

4. Requirements (educational/experience/other requirements)

Candidates must be in possession of a minimum four year B Sc Hons degree in Organic Chemistry / or Aquatic Toxicology and any of the following, Inorganic Chemistry, Biochemistry or Environmental Science as well as relevant experience in water resource quality monitoring and assessment.

The following aspects are critical requirements for the position:

- The ability to integrate and interpret water resource quality data and draw scientifically sound conclusions based on fundamental data
- Knowledge of ecological risk assessment methodology
- Understanding of water resource quality modeling and geographical information systems (GIS)
- Proven ability to communicate scientific information succinctly and clearly in writing in English
- A proven ability to manage a multidisciplinary group of scientists and projects
- Computer literacy and ability to use software packages such as MS Word, Excel, Internet and MS Project
- Sound knowledge of the National Water Act (Act No. 36 of 1998) and other related legislation
- Sound background of the ecological Reserve determination, particularly Water Quality component
- A candidate must have a code 08 driver's licence

5. Duties

The duties of the incumbent of this post will include the following:

- Lead the team in designing, implementing and coordinating a national toxicity monitoring programme
- Provide leadership to the team in developing the toxicants / toxicity water resource quality guidelines, with emphasis on persistent organic pollutants (POP's)
- Supervision of the development of procedures and protocols for the monitoring of the quality of water resources in terms of suitability for use
- Application of methodologies for the toxicological assessment of water resource quality and domestic water supplies
- Participate in the use of models for aquatic ecological risk assessment
- Evaluation of the use of site-specific toxicity testing results in setting site specific water quality guidelines, where necessary
- Liaison with other Government Departments, local Authorities the public and other clients on the toxicological quality of water resources
- Providing scientific and technical monitoring support service to the Department of Water Affairs and Forestry as requested
- Administrative management of, and scientific guidance to a multidisciplinary scientific team on the national monitoring, and reporting on the toxicological status of water resource quality in South Africa.
- Participation in the water quality component of the Reserve method development and testing

6. Commencing salary

b) Commencing salaries not exceeding **R 192 975** annum may be granted in recognition of appropriate post-qualification/~~-apprenticeship~~* experience ~~and~~ /or* higher educational qualifications.

OR

c) Commencing salary: **R 166 221** per annum.

7. Note/Remarks (Essential information not appropriate to the other headings). A candidate must have a code 8 drivers license

8. Applications/Enquiries to the:
Director: Resource Quality Services, Private Bag X313, PRETORIA, 0001
for Attention : BR Madikizela

9. Telephone: **012-808 9546**

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for Head of department