



Groundwater:
FROM THEORY
to Action 21-23 September 2015
 Muldersdrift | South Africa
 14th Biennial Ground Water Division Conference and Exhibition

Conference Programme
 Final Draft September 2015

Sunday		September 20, 2015 (pre-Conference)			
07:00	Pre-Conference workshops registration				
08:30	Workshop 1: Operations & Maintenance: Pump Operating Rules				
10:00	Morning Tea				
10:30	Workshop 1 <i>continues</i>				
12:30	Lunch / Registration Workshop 2				
13:30	Workshop 2: Aquifer Sustainability	13:30 - 18:00	Exhibition set-up		
15:30	Afternoon break		16:00 - 18:00	Early Conference Registration	
16:00 - 17:30	Workshop 2 <i>continues</i>				
18:00	Welcoming Function : Zonki Shebeen				
Monday		September 21, 2015			
07:00	Conference Registration				
Plenary Session: Groundwater, From Theory to Action					
Venue: Owl Hall					
08:30	Opening Ceremony				
09:00	Opening Address: Dhesigen Naidoo (WRC) - <i>Water and the New Economy</i>				
09:20	Keynote Speaker: Henry J. Roman (DST) - <i>The Water Crisis: How can the RDI Community Respond?</i>				
10:00	Morning Tea	Exhibitions Formal Opening			
	Session 1	Venue: Stables	Session 2	Venue: Under the Tipuana	Session 3 Venue: Owl Hall
Parallel Sessions	Groundwater and Service Delivery		Groundwater and Water-Energy-Food security		Groundwater and Mining
	Chairs:				
10:30	C Engelbrecht Groundwater dependency and the plight of Loeriesfontein	J Conrad Is potato cultivation negatively impacting the groundwater resources of the Sandveld, Western Cape?	D Stroebel A Baseline Study of Scarce Groundwater Resources in Anticipation of Fracking in the Karoo		
10:50	C Makoae Investigating the potential of using groundwater associated with a ring-dyke to augment the municipal water supply to Bloemfontein	A Fallon Groundwater Management and Options for Using Seasonal Climate Forecasting: Perceptions from Dendron, South Africa	L Bredenkamp Hydraulic fracturing and Water Resources: Separating fact from fiction		
11:10	C Meier Hydrodynamic and Hydrochemical characterization of groundwater resources of a municipality in Switzerland	S Imrie 'Best practice' and value adding approach to undertaking detailed groundwater impact assessment studies for proposed solar energy projects	S Talma Vulnerable areas in shale gas exploration: Identifying indicators of natural deep groundwater circulation		
11:30	C Roets Steytlerville Bulk Water Supply - A Case Study	M Luruli A Decision Support System to Assess Climate Change Impacts on Rural Communities	K Pietersen An analysis of the challenges for groundwater governance during unconventional gas development in South Africa		
11:50	P Lee A high tech approach to wellfield management	K Villholth Mapping irrigation potential from renewable groundwater in Africa – a quantitative hydrological approach	J van Dyk Groundwater monitoring during an underground coal gasification process		
12:10	O Yaya Aquifer vulnerability study of the Federal Capital City, Abuja Nigeria	G Ebrahim Estimating groundwater availability at catchment scale using streamflow recession and instream flow requirements of rivers	Discussion		
12:30	Lunch		POSTER VIEWING SESSION Exhibitions		
	Session 4	Venue: Stables	Session 5	Venue: Under the Tipuana	Session 6 Venue: Owl Hall
Parallel Sessions	Municipal Support		Groundwater in a Green Economy		Groundwater and Mining
	Chairs:				
13:30	K Riemann A framework for groundwater development at local government level	Z Ntshidi Comparative use of groundwater by invasive alien Prosopis spp and co-occurring indigenous V. karroo in a semi-arid catchment	F Botha Integration of water simulation modelling for water conservation and demand management in the mining sector		
13:50	Panel Discussion	T Mophatlane Refinement of a 3D Finite Element Mesh Model, Bela-Bela, South Africa	S Fonkem Simulation of Underground Mine Flooding with EPANET and MODFLOW		

14:10		L Soltau Existing Springs in City of Cape Town and Environs: Spring Use Strategy	C Gouws Groundwater as bulk water supply option to an open pit mine
14:30		GEOSS Video: Springs in Cape Town	E Lukas A management plan towards the flooding of an opencast mine with adjacent underground sections.
14:50	Afternoon Break		Exhibitions & Poster Viewing Session
	Session 7	Venue: Stables	Session 8 Venue: Under the Tipuana Session 9 Venue: Owl Hall
Chairs:			
Parallel Sessions	Municipal Support	Case Studies	Groundwater and Mining
15:40	J Cobbing Policy and pragmatism in South African groundwater management	N Lefore Managing Transboundary Groundwater Resources: The Case of the Ramotswa Aquifer	F van Deventer Modelling recharge in an opencast coal mining environment, applying model parameters on a catchment scale.
16:00	Panel Discussion	R Sekwele / M Lebeloane The UNESCO IHP project "Groundwater Resources Governance in Transboundary Aquifers" (GGRETA) – Legal and Institutional Aspect	B Bredenkamp Numerical modelling: a management tool in mine dewatering management
16:20		K Majola Stampriet Transboundary Aquifer System	L Mokhahlane Groundwater chemical evolution at an underground coal gasification pilot plant in Majuba
16:40		Discussion	Discussion
18:00 to late	Cocktail Function: Eduzani Sundowner Deck		

Tuesday September 22, 2015

Plenary Session - National Groundwater Strategy

08:30	P Hobbs	Where AMD meets Karst, and Humans theorise (speculate?) whilst Nature acts
09:00	E Braune / Y Xu	A review of groundwater resource protection measures in South Africa.
09:30	F Fourie	Introduction to National Groundwater Strategy

09:50 Tea

	Session 10	Venue: Under the Tipuana	Session 11	Venue: Stables	Session 12	Venue: Owl Hall
Parallel Sessions	Groundwater and the Environment		National Monitoring Programme		National Groundwater Strategy	
Chairs:			Ernst Bertram		Fanus Fourie	
10:30	D Blake Cadmium contamination of groundwater in South Africa - the potential hazard of phosphate		F Jonck The Management of Groundwater resources using GIS/Cartography (Graphical Display)		F Fourie Introduction to National Groundwater Strategy	
10:50	J Haumann Investigating the impact of fertilizer effluent disposed in quarries on groundwater quality		M Mukhawana The Groundwater Data Acquisition and Management Strategy for the Department of Water and Sanitation		Panel Discussion	
11:10	S Israel Successful field pilot scale nitrate removal using low technology methods		C Pickering Monitoring in the Mining Industry: An Overview			
11:30	L Moussa Antoine Hydrogeochemical processes in the shallow aquifer of the Lubumbashi river basin: multivariate statistical approach		N Vermaak Mountain Catchment Studies and Catchment Management			
11:50	PHJ Lourens Investigating the influence of fine ash leaching in a tailings dam on the underlying aquifers		M Mashapa The National Integrated Water Information System (NIWIS) for South Africa			
12:10	Discussion		Discussion			

12:30

Lunch

POSTER VIEWING SESSION

Exhibitions

	Session 13	Venue: Under the Tipuana	Session 14	Venue: Stables	Session 15	Venue: Owl Hall
Parallel Sessions	Groundwater and the Environment		Monitoring, Data and Information Management		Groundwater and the Environment	
Chairs:						
13:30	A Kruger Hydrocarbon plume delineation using a Hydrogeological and Geophysical approach		M Gomo Effects of artefacts other than horizontal groundwater flux on a single-borehole tracer dilution test: Field evidence		M Holland Development of regional groundwater flow models for the Vaal Gamagara well fields	
13:50	S McKeown Vapour Intrusion Risk Assessment: Case Studies using Modelling and Direct Measurement from Contaminated Sites in South Africa		D McGibbon Flow test analysis and monitoring of the deep confined peninsula aquifer in Blossoms (Oudtshoorn), Western Cape, South Africa		B Mauck Integrated modelling: a tool for urban groundwater management on the Cape Flats, Cape Town	

14:10	K Naude High resolution site characterisation assessment of a chlorinated solvent plume in a shallow unconfined aquifer	M Mills The value (or not) of measuring redox potential in groundwater: A case study	K Witthueser Numerical modelling of groundwater contributions to wetlands
14:30	W van Biljon Effects of Tidal Variation on LNAPL distribution in	Discussion	Discussion
14:50	Afternoon Break Exhibitions & Posters		
	Session 16 Venue: Under the Tipuana	Session 17 Venue: Stables	Session 18 Venue: Owl Hall
Parallel Sessions	Groundwater and the Environment	Monitoring, Data and Information Management	Groundwater Governance
Chairs:			
15:20	E Rambau Contaminated soil and groundwater: Vacuum Enhanced Recovery as an alternative method	D Makhokha A systematic approach to the interpretation of conductivity anomalies across intrusive dolerite dykes and sills in the Karoo	K Riemann Governance and Management of Water Resource in the SA Context – A Review
15:40	V Naidoo Monitored Natural Attenuation of Inorganic Constituents: A Case Study in a Karoo Aquifer	K Masindi Using gravity anomalies from GRACE to estimate changes in groundwater storage in the Vaal River Basin	J Odiyo Groundwater decision support systems for water scarce rural areas: Siloam Village case study
16:00	S Mohr High resolution site characterisation (HRSC) in South Africa: challenges, successes and lessons learned	O Dingoko TEMPEST for groundwater exploration	H Seyler Taking Capture Principle into Practice
16:20	B Masombuka Monitored Natural Attenuation on-sites with different geological setting	J Zulu Complementary use of electromagnetic frequency domain and electroseismic survey methods in groundwater exploration in Zimbabwe.	A Matshini Investigating groundwater governance arrangements for shale gas exploration and production in the main Karoo Basin, South Africa
16:40	Discussion	Discussion	I Haines Water Use Registration: A reflection of Groundwater Governance of the Verlorenvlei Catchment in the Sandveld
17:00 to 18:00	GWD AGM: Hilti Room		
19:00 to late	Conference Dinner: Greensleeves Restaurant		
Wednesday September 23, 2015			
	Session 19 Venue: Owl Hall	Session 20 Venue: Stables	Session 21 Venue: Under the Tipuana
Parallel Sessions	Groundwater and Mining	Groundwater and the Environment	Monitoring, Data and Information Management
Chairs:			
08:30	R Gebrekristos Packer Testing and Analytical Modelling For Groundwater Inflow Estimation for Proposed Shafts	M Damons An assessment of the contribution of surface and subsurface flows to river flows of the Sandspruit in the Berg River Catchment,	J Davies Re-inventing the Wheel – The Iterative Development of Groundwater Sustainability in Southern Africa.
08:50	L Deysel An Acid Base Accounting study of the coal-bearing formations in the Waterberg coalfield	R Diamond Interannual variability in rainfall isotope composition as a tracer of spring water flow.	L Mokhahlane Use of Environmental Isotopes to Determine Hydraulic Connectivity Across the Surrounding Aquifers at Majuba UCG
09:10	D Love Groundwater and mining on the West African shield: application of mineralogical and weathering profiling	G Kramers Modelling groundwater recharge in the Upper Vaal River Catchment.	P Nemaxwi Estimation of Groundwater Recharge Response from Rainfall Events in a Semi-Arid Fractured Aquifer: Case study of Quaternary Cathment
09:30	A Huisamen Hydrogeochemical Evolution of an Opencast Colliery After Decommissioning – Static vs. Dynamic Prediction	M Ndlovu A hydrogeological study of the Kosi Bay lakes system, North-Eastern South Africa	J Wise Decision making with web-based geo-spatial databases coupled to groundwater models
09:50	J van Niekerk Water balance calculations in a rehabilitated environment	B Nyawo A study of interaction between groundwater and surface water using environmental isotopes, hydrochemistry and faecal coliform bacteria	M van Wyk Groundwater fingerprinting for identifying potential project risks
10:10	Discussion	Discussion	Discussion
10:30	Morning Tea Exhibitions & Posters		
	Session 22 Venue: Stables	Session 23 Venue: Owl Hall	Session 24 Venue: Under the Tipuana
Parallel Sessions	Case Studies	Groundwater and the Environment	Young Scientists
Chairs:			
11:00	K Smith (N Vermaak) Unravelling the complex geohydrological structure of the Elandsfontein aquifer unit	R Parsons A scientific method of assessing the groundwater contribution to lakes and wetlands	T Madlala Application of multivariate statistical analysis to investigate the hydrochemistry of groundwater Upper Berg River Catchment

11:20	M Demlie Hydrogeology of the Cedarville Flats primary aquifer, Upper Umzimvubu River Basin, South Africa	E Petermann Characterisation of submarine groundwater discharge into False Bay (Western Cape)	R Makungo An approach for groundwater storage-reliability analysis and operating rules for rural areas: Siloam Village case study
11:40	S Muravha The effect of geology on the mobility and rebound of light non-aqueous phase liquids	T Strydom Connecting the dots: Groundwater / surface water interaction along the Letaba River, Limpopo	M van Wyk Groundwater fingerprinting for identifying potential project risks
12:00	A van Niekerk Qualitative interpretation of groundwater flow distribution within the southern granite supersite of the Kruger National Park	T Shakhane Integrated system approach to evaluate natural processes and hydrodynamics linked to groundwater-surface water interaction	J Weitz Comparative analyses between LAK3 package and the high K techniques used for numerical simulation of lake-aquifer interactions
12:20	Discussion	C Terrell Groundwater and Surface Water Interaction Study for the Ingula Wetland	N Breedt Contaminant Plume Mapping using Electrical resistivity method in Northern Namibia
12:40		Discussion	Discussion
13:00	Lunch	POSTER VIEWING SESSION Exhibitions	
Plenary Session - Closing Ceremony			
14:00	A Wilke	A fresh look at the National Water Balance	
14:20	Conference Awards		
14:40	S Adams	Closing remarks and Farewell	
15:00	Tea / End of Conference		
Exhibition and Poster Breakdown			
15:30 POST-CONFERENCE HERITAGE TOUR- DELEGATES BRIEFING			