

# CAPABILITY CONTOUR

		System Life Cycle								
		Conceptualise	Define	Develop	Design	Construct	Commission	Operate	Maintain	Utilise
System Hierarchy	Ecological system				Environmental Impact Assessment (EIA)			Aquifer and catchment management		
	Socio-economic system		Market research	Value-chain analysis	Risk assessment		Economic modelling			
				Facilitate license application, Blue and Green drop certification			Technical and management training			
	User system			Information and asset management systems for water and waste water infrastructure operation and maintenance						
				Geographical Information Systems (GIS)				Breakdown call-centre service		
	Processes			Artificial ground-water recharge	Drinking-water purification, Reverse osmosis (RO), Trickling filters, Biological nutrient-removal activated sludge, Constructed wetlands and Pond systems				Water and nutrient recovery and re-use	
			Urban effluent and storm water treatment		Pump stations		High strength organic waste treatment eg. anaerobic digestion		Energy from biogas	
	Products		Groundwater wells and boreholes		Solid-liquid separation units	Elevated water tanks	Package plants, for drinking-water purification and wastewater treatment			
		Mathematical modelling of activated sludge and biofilm processes for wastewater treatment					Water sampling, quality monitoring and interpretation of results			
Sub-systems	Source control approaches: separate treatment of greywater, black water and urine			Pump stations: boreholes, drinking water, sewerage, process applications			Routine chemical analysis ISO 17025:2005			
	Bio-prospecting	Specialist environmental investigations		Foundations and water-retaining structures		Electrical switch gear				
Components	Computational Fluid Dynamics (CFD) applied to unit processes			Mechanical equipment selection and specification						
Materials				Soil, concrete, steel, pipe						

### GAUTENG - PRETORIA

#### PHYSICAL ADDRESS

Suite 1, Groenkloof Forum Office Park  
57 George Storrar Drive, Groenkloof

#### POSTAL ADDRESS

PO Box 323, Groenkloof, 0027  
Tel: +27 12 452 0444  
Fax: +27 12 452 0583

### WESTERN CAPE - CAPE TOWN

#### PHYSICAL ADDRESS

Suite 101, Stonefountain Terrace,  
95 Klipfontein Road, Rondebosch

#### POSTAL ADDRESS

PO Box 82, Crawford, 7779  
Tel: +27 21 685 0789  
Fax: +27 86 655 2690

For more information please contact

Dr. Jac Wilsenach jac@umfula.co.za +27 73 746 2620