

**ACADEMIC STAFF PROFESSIONAL PROFILE FORM**



**1. Personal Data**

<b>Name: Marclus Mwai</b>
<b>Title/Qualifications: Reg. Eng (ERB), MIEK, MASCE, MSc, BSc (Civil)</b>
<b>Department/Unit/Section: Civil &amp; Environmental Eng.</b>
<b>Contact Address: mmarclus@yahoo.com</b>
<b>Position: Lecturer</b>
<b>Area of Specialization: Geotechnical &amp; Geo-Environmental Engineering</b>
<b>Research Interests:</b>
<ul style="list-style-type: none"> <li>▪ numerical methods for geotechnical engineering (subsurface water flow, contaminant transport and attenuation, and soil deformation and stress distributions),</li> <li>▪ characterisation and development of constitutive models for soft soils (e.g. as occurs in flood impacted areas), residual and recycled waste materials (tire shreds, mine wastes, etc.),</li> <li>▪ life cycle assessments for urban infrastructure (solid waste management, wastewater and storm water management).</li> </ul>

**2. Conference Presentations**

<b>S/No</b>	<b>Presenter</b>	<b>Title of Paper presented</b>	<b>City/Country</b>	<b>Date of Conference</b>	<b>Funding (US\$)</b>
1	Mwai	The performance of tire-derived aggregates as media for leachate collection and drainage (focus on numerical modelling). In Proceedings of the 12th International Environmental Specialty Conference, Edmonton, Alberta, 6-9 June 2012.	Edmonton, Canada	June 2012	-
2	Mwai	Evaluating the performance of tire-derived aggregates when used as media for leachate collection and drainage systems. In Proceedings of the 27 <sup>th</sup> International Conference on Solid Waste Technology and Management, Philadelphia, PA U.S.A, 11-14 March 2012.	Philadelphia, PA U.S.A	March 2012	-
3	Mwai	A finite element technique for	Edmonton,	2012	-

		predicting performance of tire-derived aggregates when used as media for leachate collection and drainage.	Canada		
4	Mwai	Development of a prediction model for leachate mounding in leachate collection and drainage systems.	Edmonton, Canada	2011	-
5	Mwai	Implications of using Tire-derived Aggregate for landfill leachate collection and drainage systems.	Edmonton, Canada	2010	-
6	Mwai	Strategies for Solid Waste Management- A life cycle approach	Singapore	2008	-

### 3. Research / Funded Projects

S/No	Researcher	Year	Title	Funding Agency	Funding (US\$)
	Mwai	2009-todate	'Evaluating the performance of tire-derived aggregates as media for leachate collection and drainage'.	ARMA	100,000
	Mwai	2008	Developing Strategies for Solid Waste Management-Life Cycle Approach	NFP	17,000

### 4. Publications

S/No.	Author	Year	Title	Journal	ISBN/ISSN Reference No.
1	Mwai	2012	A characterization study to determine geotechnical properties of tire derived aggregates as media for leachate collection and drainage systems	submitted to: Canadian Geotechnical Journal	
2	Mwai	2012	Biogeochemical characterization of leachates in Alberta's sanitary landfills and implications for the	submitted to: Canadian Journal of Civil Engineering	

			performance of leachate collection and drainage systems (LCDS)		
3	Mwai	2012	A numerical modelling technique for evaluating performance of tire-derived aggregate when used as media for leachate collection and drainage systems	submitted to: Waste Management & Research Journal	
	Mwai	2012	A numerical modelling Technical for evaluating Performance of Leachate Collection and Drainage systems (Accepted for publication by Kenya Engineer).	Accepted by Kenya Engineer	
	Mwai	2008	Integrating MDGs in the Formulation of Strategies for Solid Waste Management – A Life Cycle Approach (Working Report)	Available at: <a href="http://www.unesco-ihc.org/content/download/2667/.../WaterMill%2015.pdf">www.unesco-ihc.org/content/download/2667/.../WaterMill%2015.pdf</a>	Report No. 15

#### 5. Consultancy and community service

S/No.	Consultancy(s)/ Service type	Consulting Person/ Body/ Organization	Year	Title Consultancy Service	Payment (US\$)
1	Mentoring senior high school students (girls) in Edmonton, Canada	University of Alberta	2012	WISEST (program)	-
2	Engineering services	Civotech Associates	2008-2009	Structural design of a community hall	10,000

#### 6. Affiliation to Professional Bodies

S/No	Name of professional body
1	Member- Golden Key International Honour Society
2	Registered Engineer (ERB)
3	Member (IEK)
4	Student Member (ASCE),
5	Lead Expert- EIA/ Audits (NEMA)

7. National and International awards and Recognitions-

<b>S/No</b>	<b>Name of award or Recognition</b>	<b>Awarding Organization/Body</b>	<b>Year</b>
1	Recognition for outstanding scholastic achievement and excellence	Golden Key International Honour Society- University of Alberta	2012
2	The Netherlands Fellowship Programme for graduate studies	Netherlands Government	2007
3	Certificate of proficiency in solid waste management	Dresden Technical University (Germany)	2005