

**Pollution Research Group  
University of KwaZulu-Natal, Durban  
South Africa**

**Support to Sanitation Practitioners**  
Cost of laboratory analyses

Second edition: July 2016

First edition: April 2015

Under a Bill & Melinda Gates Foundation Capacity Grant, the PRG is able to offer laboratory analyses at a discounted rate to other sanitation practitioners up until October 2017. In order to have samples analysed in the PRG laboratories, the sample analysis questionnaire should be completed, and the associated costs identified from the table below. Please contact the laboratory manager Merlien Reddy ([Reddym5@ukzn.ac.za](mailto:Reddym5@ukzn.ac.za)) with any queries.

**Full cost recovery** – includes consumables, overheads, capital and labour costs for undertaking the tests. If a visiting researcher is trained in using the equipment, training costs would also be added to this total.

**Discounted cost** – cost of consumables (chemicals, laboratory consumables, maintenance etc.). Where equipment was not funded through a Bill & Melinda Gates Foundation project, capital costs are also included.

Chemical test	Full cost recovery (R/test)	Discounted cost (R/test)	Maximum capacity (tests per day)	Training costs (R per session)
OUR	190.01	57.51	5	540
ASBR	270.65	5.65	1	324
VFA	61.33	8.33	30	324
pH and EC	58.01	3.14	30	192
COD	45.16	23.08	30	648
TKN	49.38	10.21	20	744
Ammonia	80.09	18.26	30	408
Total solids	31.62	0.34	36	336
Volatile solids	20.12	0.33	36	276
<b>Spectroquant tests</b>				
Total Phosphate	116.20	59.67	12	408
Soluble Phosphate	88.34	31.81	12	348
Nitrites	117.70	61.16	10	348
Nitrates	115.83	59.30	10	348
Total nitrogen	126.01	69.48	10	408
Sodium	116.09	59.56	10	348
Potassium	117.61	61.08	10	348
Ammonium	83.63	27.10	10	348
COD	94.29	37.76	10	348
TOC	175.21	118.68	10	336
<b>Mechanical tests</b>				
Calorific value	85.54	1.88	15	372
Density and TCI	61.42	1.02	30	360
Rheometer and viscosity	135.72	82.72	20	372
Penetrometer	45.17	9.83	20	168
Sludge volume index	21.25	3.58	36	144
Particle size distribution	50.30	0.23	30	420
Osmotic pressure	33.17	2.05	20	300
<b>Biological tests</b>				
Helminths	388.00	70.00	18	NA
E.coli + HPC	127.20	72.43	20	384
<b>New Equipment and tests</b>				
MPAES	111.82	95.92	30	708
CN Analyser	25.48	0.43	270	NA

<b>Other assistance</b>	<b>Hourly rate (R/hr)</b>	<b>Estimated time per visit / request</b>	<b>Full cost recovery (R)</b>	<b>Discounted rate (R)</b>
Quality control (lab manager)	144	2 to 3 hours	284 to 431	0
Administrative (Admin)	150	3 to 5 days	3 600 to 6 000	0
Discussion with PI	426	1 to2 days	3 405 to 6 811	0
Data Reporting (lab manager / project engineer)	278	1 to 2 days	2 222 to 4 443	0
Workshop support (Workshop manager)	221		221 / hour	0
Sampling (Technician)	106	4 hours	416 / trip	0
Pit emptying (independent contractor)			1 800 per pit	1 800 per pit

<b>Variable costs</b>	<b>Unit cost</b>	<b>Invoiced at total cost recovery</b>
Sampling travel	R 4.50/km	Travel to area for sampling
Sampling consumables	Varies	Cost of replacing items in sampling box as needed
Workshop travel	R 4.50/km	Travel to source materials and visit sites
Workshop consumables	Varies	Building materials / consumables for equipment modifications/construction