Water and Waste Water Quality Analysis Results for the Month of May 2016

Sampling and analysis was done for the months of May 2016 by Amatola Water Scientific Lab for the entire Makana i.e. Grahamstown, Alicedale and Riebeeck East in Bulk and Reticulation, supply both Water and Waste Water.

Water quality results are subdivided into Physical, Chemical and Microbiological requirements.

Table 1: Summary of water quality compliance

Section	Final - WTW			Reticulation Network			SANS 241 Limits
	No of Tests	Failures(No)	Com-pliance (%)	No of Tests	Failures	Com-pliance (%)	
May 2016							
Physical	56	11	80.36	20	4	80	≥93 Excellent ≥90 Good <90 Unacceptable
Chemical	80	0	100	28	0	100	≥ 95 Excellent ≥ 93 Good <93 Unacceptable
Microbiological / Bacteriological	70	0	100	25	2	92.00	≥ 97 Excellent ≥ 95 Good <95 Unacceptable
Total Monthly Compliance	**206**	**11**	**94.66**	**73**	**6**	**91.78**	

Monthly Quality Statistics – May 2016

The results in May 2016 indicate non-compliance on physical analysis. Concentration of *Turbidity* in final water at James Kleynhans, Alicedaledale, Waainek and Riebeeck East which also affect the 7 sampling points on the Eastern side, is due to high solids from the raw water from Glenmeville dam, Howiesondpoort and use of lay dams in Waainek, borehole low yield in Riebeeck East.

Concentration of Heterotrophic Plate Count and Total coliform is indicated in Waainek WTW. The Heterotrophic Plate Count (HPC) is a procedure used to estimate the number of live heterotrophic bacteria that are present in a water sample. HPC can be caused by many things including general water safety practices such as maintenance, regular cleaning, temperature management and maintenance of a disinfectants.
Compliance monitoring including chlorination is constantly being monitored to improve the conditions.Total coliforms include bacteria found in the soil, in water that has been influenced by surface water, use of lay dams and pumped water from the town filters.

Further investigations are undergoing.

Regulations of Drinking Water.

As per the drinking water regulations, when hazardous concentrations are detected, community have to be notified with remedy action e.g. Boiling the water to be advised until disinfection and retesting can confirm that contamination has been eliminated.

The municipality has an existing protocol on communicating such incident.

Waste Water Determinants

DETERMINANTS	SANS 241/ DWAE STANDARDS		SITE		
May 2016					
	Class I Water	Class II Water	Belmont Valley	Alicedale WWTW	Mayfield WTW
Chemical Oxygen Demand	75	75	28	-	45
Nitrate as N	5 – 9.5	4.0 – 10	0.31	-	0.62
Ammonia as N	6	6	17.36	-	24.13

No sampling was done in Alicedale WWTW; the plant is currently not discharging to the river due to capacity issues. The effluent is treated through oxidation process and discharged to the ponds for polishing.