

Withoogte Final			2014 Blue Drop Limits	Compliance Calculations 2013/2014				
Parameter	Unit	Risk	Standard Limits (SANS 241-2011 and SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population > 100 000)	Average
pH (at 25°C)	pH	Operational	≥5.0 - ≤ 9.7	24	20	83.3%	Unacceptable	9.40
Conductivity	mS/m	Aesthetic	≤ 170	24	24	100.0%	Excellent	41.42
Turbidity	NTU	Operational	≤ 1	24	22	91.7%	Good	0.65
		Aesthetic	≤ 5	24	24	100.0%	Excellent	0.65
Free chlorine	mg/L	Chronic Health	≤ 5	22	22	100.0%	Excellent	0.54
Colour (as Pt)	mg/L Pt-Co	Aesthetic	< 20	13	13	100.0%	Excellent	10.31
Total Alkalinity (as CaCO ₃)			-					
Total Hardness (as CaCO ₃)			-					
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	2	2	100.0%	Excellent	29.73
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	2	1	50.0%	Unacceptable	202.90
Sodium (as Na)	mg/L	Aesthetic	≤ 200	2	2	100.0%	Excellent	46.25
Potassium (as K)	mg/L	Operational / Health	≤ 50	1	1	100.0%	Excellent	3.10
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	1	1	100.0%	Excellent	0.01
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	13	13	100.0%	Excellent	68.67
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	2	2	100.0%	Excellent	0.10
Sulphate (as SO ₄)	mg/L	Acute Health - 1	≤ 500	2	2	100.0%	Excellent	24.00
		Aesthetic	≤ 250	2	2	100.0%	Excellent	24.00
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	13	13	100.0%	Excellent	234.95
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	1	1	100.0%	Excellent	0.15
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health - 1	< 10	2	2	100.0%	Excellent	0.53
Iron (as Fe)	ug/L	Chronic Health	≤ 2 000	8	8	100.0%	Excellent	52.25
		Aesthetic	≤ 300	8	8	100.0%	Excellent	52.25
Manganese (as Mn)	ug/L	Chronic Health	≤ 500	8	8	100.0%	Excellent	7.13
		Aesthetic	< 100	8	8	100.0%	Excellent	7.13
Aluminium (as Al)	ug/L	Operational	≤ 300	8	8	100.0%	Excellent	8.00
Total Coliform Count	cfu/100ml	Operational	≤ 10	23	23	100.0%	Excellent	0.50
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	23	23	100.0%	Excellent	0.00
Chloroform	mg/L	Chronic Health	≤ 0.3	1	1	100.0%	Excellent	0.07
Bromodichloromethane	mg/L	Chronic Health	≤ 0.06	1	1	100.0%	Excellent	0.06
Dibromochloromethane	mg/L	Chronic Health	≤ 0.1	1	1	100.0%	Excellent	0.05
Bromoform	mg/L	Chronic Health	≤ 0.1	1	1	100.0%	Excellent	0.01
Phenols	ug/L	Aesthetic	≤ 10	1	1	100.0%	Excellent	0.00
Enteric Viruses	cfu/10 l	Acute Health - 2	≤ 0	1	1	100%	Excellent	0.00
Cryptosporidium Species	cfu/10 l	Acute Health - 2	≤ 0	1	1	100%	Excellent	0.00
Giardia Species	cfu/10 l	Acute Health - 2	≤ 0	1	1	100%	Excellent	0.00
Somatic Coliphages	cfu/10ml	Operational	≤ 0	1	0	0.0%	Unacceptable	636.00
Acute Health - 1 Chemical				4	4	100.0%	Excellent	
Acute Health - 1 Microbiological				23	23	100.0%	Excellent	
Acute Health - 2 Microbiological				3	3	100.0%	Excellent	
Chronic Health				44	44	100.0%	Excellent	
Aesthetic				114	113	99.1%	Excellent	
Risk Assessment Defined Health (Acute or Chronic)				74	73	98.6%	Excellent	
Operational Efficiency				83	76	91.6%	Good	

Moorreesburg			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
pH (at 25°C)	pH	Operational	≥5.0 - ≤ 9.7	0	0			
Conductivity	mS/m	Aesthetic	≤ 170	0	0			
Turbidity	NTU	Operational	≤ 1	0	0			
		Aesthetic	≤ 5	0	0			
Free chlorine	mg/L	Chronic Health	≤ 5	0	0			
Colour (as Pt)	mg/L Pt-Co	Aesthetic	< 20	0	0			
Total Alkalinity (as CaCO ₃)			-					
Total Hardness (as CaCO ₃)			-					
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	0	0			
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	0	0			
Sodium (as Na)	mg/L	Aesthetic	≤ 200	0	0			
Potassium (as K)	mg/L	Operational / Health	≤ 50	0	0			
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	0	0			
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	0	0			
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	0	0			
Sulphate (as SO ₄)	mg/L	Acute Health - 1	≤ 500	0	0			
		Aesthetic	≤ 250	0	0			
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	0	0			
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	0	0			
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health - 1	< 10	0	0			
Iron (as Fe)	ug/L	Chronic Health	≤ 2 000	0	0			
		Aesthetic	≤ 300	0	0			
Manganese (as Mn)	ug/L	Chronic Health	≤ 500	0	0			
		Aesthetic	< 100	0	0			
Aluminium (as Al)	ug/L	Operational	≤ 300	0	0			
Total Coliform Count	cfu/100ml	Operational	≤ 10	19	16	84.2%	Unacceptable	3.58
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	19	19	100.0%	Excellent	0.00
Chloroform	mg/L	Chronic Health	≤ 0.3	0	0			
Bromodichloromethane	mg/L	Chronic Health	≤ 0.06	0	0			
Dibromochloromethane	mg/L	Chronic Health	≤ 0.1	0	0			
Bromoform	mg/L	Chronic Health	≤ 0.1	0	0			
Phenols	ug/L	Aesthetic	≤ 10	0	0			

Acute Health - 1 Chemical	0	0		
Acute Health - 1 Microbiological	19	19	100.0%	Excellent
Chronic Health	0	0		
Aesthetic	0	0		
Risk Assessment Defined Health (Acute or Chronic)	19	19	100.0%	Excellent
Operational Efficiency	19	16	84.2%	Unacceptable

Koringberg			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
pH (at 25°C)	pH	Operational	≥5.0 - ≤ 9.7	24	23	95.8%	Excellent	9.19
Conductivity	mS/m	Aesthetic	≤ 170	24	24	100.0%	Excellent	41.00
Turbidity	NTU	Operational	≤ 1	24	20	83.3%	Unacceptable	0.60
		Aesthetic	≤ 5	24	24	100.0%	Excellent	0.60
Free chlorine	mg/L	Chronic Health	≤ 5	24	24	100.0%	Excellent	0.11
Colour (as Pt)	mg/L Pt-Co	Aesthetic	< 20	0	0			
Total Alkalinity (as CaCO ₃)			-					
Total Hardness (as CaCO ₃)			-					
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	0	0			
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	0	0			
Sodium (as Na)	mg/L	Aesthetic	≤ 200	0	0			
Potassium (as K)	mg/L	Operational / Health	≤ 50	0	0			
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	0	0			
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	0	0			
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	0	0			
Sulphate (as SO ₄)	mg/L	Acute Health - 1	≤ 500	0	0			
		Aesthetic	≤ 250	0	0			
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	0	0			
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	0	0			
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health - 1	< 10	0	0			
Iron (as Fe)	ug/L	Chronic Health	≤ 2 000	0	0			
		Aesthetic	≤ 300	0	0			
Manganese (as Mn)	ug/L	Chronic Health	≤ 500	0	0			
		Aesthetic	< 100	0	0			
Aluminium (as Al)	ug/L	Operational	≤ 300	0	0			
Total Coliform Count	cfu/100ml	Operational	≤ 10	24	22	91.7%	Good	4.19
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	24	24	100.0%	Excellent	0.00
Chloroform	mg/L	Chronic Health	≤ 0.3	0	0			
Bromodichloromethane	mg/L	Chronic Health	≤ 0.06	0	0			
Dibromochloromethane	mg/L	Chronic Health	≤ 0.1	0	0			
Bromoform	mg/L	Chronic Health	≤ 0.1	0	0			
Phenols	ug/L	Aesthetic	≤ 10	0	0			

Acute Health - 1 Chemical	0	0		
Acute Health - 1 Microbiological	24	24	100.0%	Excellent
Chronic Health	24	24	100.0%	Excellent
Aesthetic	48	48	100.0%	Excellent
Risk Assessment Defined Health (Acute or Chronic)	48	48	100.0%	Excellent
Operational Efficiency	72	65	90.3%	Good

Swartland Final			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population > 100 000)	Average
pH (at 25°C)	pH	Operational	≥5.0 - ≤ 9.7	24	17	70.8%	Unacceptable	9.53
Conductivity	mS/m	Aesthetic	≤ 170	24	24	100.0%	Excellent	14.46
Turbidity	NTU	Operational	≤ 1	24	21	87.5%	Unacceptable	0.57
		Aesthetic	≤ 5	24	24	100.0%	Excellent	0.57
Free chlorine	mg/L	Chronic Health	≥ 5	24	24	100.0%	Excellent	0.61
Colour (as Pt)	mg/L Pt-Co	Aesthetic	< 20	12	12	100.0%	Excellent	7.58
Total Alkalinity (as CaCO ₃)			-					22.75
Total Hardness (as CaCO ₃)			-					45.82
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	2	2	100.0%	Excellent	39.20
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	2	1	50.0%	Excellent	52.70
Sodium (as Na)	mg/L	Aesthetic	≤ 200	2	2	100.0%	Excellent	10.15
Potassium (as K)	mg/L	Operational / Health	≤ 50	1	1	100.0%	Excellent	0.70
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	2	2	100.0%	Excellent	0.01
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	12	12	100.0%	Excellent	25.14
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	2	2	100.0%	Excellent	0.10
Sulphate (as SO ₄)	mg/L	Acute Health - 1	≤ 500	2	2	100.0%	Excellent	18.00
		Aesthetic	≤ 250	2	2	100.0%	Excellent	18.00
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	11	11	100.0%	Excellent	100.75
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	1	1	100.0%	Excellent	0.15
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health - 1	< 10	2	2	100.0%	Excellent	0.15
Iron (as Fe)	ug/L	Chronic Health	≤ 2 000	7	7	100.0%	Excellent	43.14
		Aesthetic	≤ 300	7	7	100.0%	Excellent	43.14
Manganese (as Mn)	ug/L	Chronic Health	≤ 500	7	7	100.0%	Excellent	10.71
		Aesthetic	< 100	7	7	100.0%	Excellent	10.71
Aluminium (as Al)	ug/L	Operational	≤ 300	7	7	100.0%	Excellent	10.57
Total Coliform Count	cfu/100ml	Operational	≤ 10	24	24	100.0%	Excellent	0.04
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	24	24	100.0%	Excellent	0.00
Chloroform	mg/L	Chronic Health	≤ 0.3	1	1	100.0%	Excellent	0.01
Bromodichloromethane	mg/L	Chronic Health	≤ 0.06	1	1	100.0%	Excellent	0.00
Dibromochloromethane	mg/L	Chronic Health	≤ 0.1	1	1	100.0%	Excellent	0.00
Bromoform	mg/L	Chronic Health	≤ 0.1	1	1	100.0%	Excellent	0.00
Phenols	ug/L	Aesthetic	< 10	1	0	0.0%	Unacceptable	25.00
Enteric Viruses	cfu/10 l	Acute Health - 2	≤ 0	1	1	100%	Excellent	0.00
Cryptosporidium Species	cfu/10 l	Acute Health - 2	≤ 0	1	1	100%	Excellent	0.00
Giardia Species	cfu/10 l	Acute Health - 2	≤ 0	1	1	100%	Excellent	0.00
Somatic Coliphages	cfu/10ml	Operational	≤ 0	1	0	0.0%	Unacceptable	122.00

Acute Health - 1 Chemical	4	4	100.0%	Excellent
Acute Health - 1 Microbiological	24	24	100.0%	Excellent
Acute Health - 2 Microbiological	3	3	100.0%	Excellent
Chronic Health	44	44	100.0%	Excellent
Aesthetic	109	107	98.2%	Excellent
Risk Assessment Defined Health (Acute or Chronic)	75	74	98.7%	Excellent
Operational Efficiency	83	72	86.7%	Unacceptable

Malmesbury			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
pH (at 25°C)	pH	Operational	≥5.0 - ≤ 9.7	24	13	54.2%	Unacceptable	9.56
Conductivity	mS/m	Aesthetic	≤ 170	24	24	100.0%	Excellent	14.88
Turbidity	NTU	Operational	≤ 1	24	20	83.3%	Unacceptable	0.65
		Aesthetic	≤ 5	24	24	100.0%	Excellent	
Free chlorine	mg/L	Chronic Health	≤ 5	24	24	100.0%	Excellent	0.50
Colour (as Pt)	mg/L Pt-Co	Aesthetic	< 20	0	0	#DIV/0!		
Total Alkalinity (as CaCO ₃)			-					
Total Hardness (as CaCO ₃)			-					
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	0	0	#DIV/0!		
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	0	0	#DIV/0!		
Sodium (as Na)	mg/L	Aesthetic	≤ 200	0	0	#DIV/0!		
Potassium (as K)	mg/L	Operational / Health	≤ 50	0	0	#DIV/0!		
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	0	0	#DIV/0!		
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	0	0	#DIV/0!		
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	0	0	#DIV/0!		
Sulphate (as SO ₄)	mg/L	Acute Health - 1	≤ 500	0	0	#DIV/0!		
		Aesthetic	≤ 250	0	0	#DIV/0!		
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	0	0	#DIV/0!		
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	0	0	#DIV/0!		
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health - 1	< 10	0	0	#DIV/0!		
Iron (as Fe)	ug/L	Chronic Health	≤ 2 000	0	0	#DIV/0!		
		Aesthetic	≤ 300	0	0	#DIV/0!		
Manganese (as Mn)	ug/L	Chronic Health	≤ 500	0	0	#DIV/0!		
		Aesthetic	< 100	0	0	#DIV/0!		
Aluminium (as Al)	ug/L	Operational	≤ 300	0	0	#DIV/0!		
Total Coliform Count	cfu/100ml	Operational	≤ 10	33	31	93.9%	Excellent	3.98
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	33	33	100.0%	Excellent	0.00
Chloroform	mg/L	Chronic Health	≤ 0.3	0	0	#DIV/0!		
Bromodichloromethane	mg/L	Chronic Health	≤ 0.06	0	0	#DIV/0!		
Dibromochloromethane	mg/L	Chronic Health	≤ 0.1	0	0	#DIV/0!		
Bromoform	mg/L	Chronic Health	≤ 0.1	0	0	#DIV/0!		
Phenols	ug/L	Aesthetic	≤ 10	0	0	#DIV/0!		

Acute Health - 1 Chemical	0	0		
Acute Health - 1 Microbiological	33	33	100.0%	Excellent
Chronic Health	24	24	100.0%	Excellent
Aesthetic	48	48	100.0%	Excellent
Risk Assessment Defined Health (Acute or Chronic)	57	57	100.0%	Excellent
Operational Efficiency	81	64	79.0%	Unacceptable

Darling			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
pH (at 25°C)	pH	Operational	≥5.0 - ≤ 9.7	24	4	16.7%	Unacceptable	9.78
Conductivity	mS/m	Aesthetic	≤ 170	24	24	100.0%	Excellent	21.08
Turbidity	NTU	Operational	≤ 1	24	20	83.3%	Unacceptable	0.84
		Aesthetic	≤ 5	24	24	100.0%	Excellent	0.84
Free chlorine	mg/L	Chronic Health	≤ 5	24	24	100.0%	Excellent	0.02
Colour (as Pt)	mg/L Pt-Co	Aesthetic	< 20	0	0			
Total Alkalinity (as CaCO ₃)			-					
Total Hardness (as CaCO ₃)			-					
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	0	0			
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	0	0			
Sodium (as Na)	mg/L	Aesthetic	≤ 200	0	0			
Potassium (as K)	mg/L	Operational / Health	≤ 50	0	0			
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	0	0			
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	0	0			
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	0	0			
Sulphate (as SO ₄)	mg/L	Acute Health - 1	≤ 500	0	0			
		Aesthetic	≤ 250	0	0			
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	0	0			
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	0	0			
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health - 1	< 10	0	0			
Iron (as Fe)	ug/L	Chronic Health	≤ 2 000	0	0			
		Aesthetic	≤ 300	0	0			
Manganese (as Mn)	ug/L	Chronic Health	≤ 500	0	0			
		Aesthetic	< 100	0	0			
Aluminium (as Al)	ug/L	Operational	≤ 300	0	0			
Total Coliform Count	cfu/100ml	Operational	≤ 10	34	34	100.0%	Excellent	0.19
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	34	34	100.0%	Excellent	0.00
Chloroform	mg/L	Chronic Health	≤ 0.3	0	0			
Bromodichloromethane	mg/L	Chronic Health	≤ 0.06	0	0			
Dibromochloromethane	mg/L	Chronic Health	≤ 0.1	0	0			
Bromoform	mg/L	Chronic Health	≤ 0.1	0	0			
Phenols	ug/L	Aesthetic	≤ 10	0	0			

Acute Health - 1 Chemical	0	0		
Acute Health - 1 Microbiological	34	34	100.0%	Excellent
Chronic Health	24	24	100.0%	Excellent
Aesthetic	48	48	100.0%	Excellent
Risk Assessment Defined Health (Acute or Chronic)	58	58	100.0%	Excellent
Operational Efficiency	82	58	70.7%	Unacceptable

Riebeek Kasteel			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
pH (at 25°C)	pH	Operational	≥5.0 - ≤ 9.7	0	0			
Conductivity	mS/m	Aesthetic	≤ 170	0	0			
Turbidity	NTU	Operational	≤ 1	0	0			
		Aesthetic	≤ 5	0	0			
Free chlorine	mg/L	Chronic Health	≤ 5	0	0			
Colour (as Pt)	mg/L Pt-Co	Aesthetic	< 20	0	0			
Total Alkalinity (as CaCO ₃)			-					
Total Hardness (as CaCO ₃)			-					
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	0	0			
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	0	0			
Sodium (as Na)	mg/L	Aesthetic	≤ 200	0	0			
Potassium (as K)	mg/L	Operational / Health	≤ 50	0	0			
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	0	0			
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	0	0			
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	0	0			
Sulphate (as SO ₄)	mg/L	Acute Health - 1	≤ 500	0	0			
		Aesthetic	≤ 250	0	0			
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	0	0			
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	0	0			
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health - 1	< 10	0	0			
		Chronic Health	≤ 2 000	0	0			
Iron (as Fe)	ug/L	Chronic Health	≤ 300	0	0			
		Aesthetic	≤ 300	0	0			
Manganese (as Mn)	ug/L	Chronic Health	≤ 500	0	0			
		Aesthetic	< 100	0	0			
Aluminium (as Al)	ug/L	Operational	≤ 300	0	0			
Total Coliform Count	cfu/100ml	Operational	≤ 10	5	5	100.0%	Excellent	0.00
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	5	5	100.0%	Excellent	0.00
Chloroform	mg/L	Chronic Health	≤ 0.3	0	0			
Bromodichloromethane	mg/L	Chronic Health	≤ 0.06	0	0			
Dibromochloromethane	mg/L	Chronic Health	≤ 0.1	0	0			
Bromoform	mg/L	Chronic Health	≤ 0.1	0	0			
Phenols	ug/L	Aesthetic	≤ 10	0	0			

Acute Health - 1 Chemical	0	0		
Acute Health - 1 Microbiological	5	5	100.0%	Excellent
Chronic Health	0	0		
Aesthetic	0	0		
Risk Assessment Defined Health (Acute or Chronic)	5	5	100.0%	Excellent
Operational Efficiency	5	5	100.0%	Excellent

Riebeek Wes			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
pH (at 25°C)	pH	Operational	≥5.0 - ≤ 9.7	0	0			
Conductivity	mS/m	Aesthetic	≤ 170	0	0			
Turbidity	NTU	Operational	≤ 1	0	0			
		Aesthetic	≤ 5	0	0			
Free chlorine	mg/L	Chronic Health	≤ 5	0	0			
Colour (as Pt)	mg/L Pt-Co	Aesthetic	< 20	0	0			
Total Alkalinity (as CaCO ₃)			-					
Total Hardness (as CaCO ₃)			-					
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	0	0			
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	0	0			
Sodium (as Na)	mg/L	Aesthetic	≤ 200	0	0			
Potassium (as K)	mg/L	Operational / Health	≤ 50	0	0			
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	0	0			
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	0	0			
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	0	0			
Sulphate (as SO ₄)	mg/L	Acute Health - 1	≤ 500	0	0			
		Aesthetic	≤ 250	0	0			
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	0	0			
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	0	0			
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health - 1	< 10	0	0			
Iron (as Fe)	ug/L	Chronic Health	≤ 2 000	0	0			
		Aesthetic	≤ 300	0	0			
Manganese (as Mn)	ug/L	Chronic Health	≤ 500	0	0			
		Aesthetic	< 100	0	0			
Aluminium (as Al)	ug/L	Operational	≤ 300	0	0			
Total Coliform Count	cfu/100ml	Operational	≤ 10	5	5	100.0%	Excellent	0.00
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	5	5	100.0%	Excellent	0.00
Chloroform	mg/L	Chronic Health	≤ 0.3	0	0			
Bromodichloromethane	mg/L	Chronic Health	≤ 0.06	0	0			
Dibromochloromethane	mg/L	Chronic Health	≤ 0.1	0	0			
Bromoform	mg/L	Chronic Health	≤ 0.1	0	0			
Phenols	ug/L	Aesthetic	≤ 10	0	0			

Acute Health - 1 Chemical	0	0		
Acute Health - 1 Microbiological	5	5	100.0%	Excellent
Chronic Health	0	0		
Aesthetic	0	0		
Risk Assessment Defined Health (Acute or Chronic)	5	5	100.0%	Excellent
Operational Efficiency	5	5	100.0%	Excellent

Yzerfontein			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
pH (at 25°C)	pH	Operational	≥5.0 - ≤ 9.7	24	1	4.2%	Unacceptable	9.92
Conductivity	mS/m	Aesthetic	≤ 170	24	24	100.0%	Excellent	16.21
Turbidity	NTU	Operational	≤ 1	24	20	83.3%	Unacceptable	0.77
		Aesthetic	≤ 5	24	24	100.0%	Excellent	0.77
Free chlorine	mg/L	Chronic Health	≤ 5	24	24	100.0%	Excellent	0.01
Colour (as Pt)	mg/L Pt-Co	Aesthetic	< 20	0	0			
Total Alkalinity (as CaCO ₃)			-					
Total Hardness (as CaCO ₃)			-					
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	0	0			
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	0	0			
Sodium (as Na)	mg/L	Aesthetic	≤ 200	0	0			
Potassium (as K)	mg/L	Operational / Health	≤ 50	0	0			
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	0	0			
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	0	0			
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	0	0			
Sulphate (as SO ₄)	mg/L	Acute Health - 1	≤ 500	0	0			
		Aesthetic	≤ 250	0	0			
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	0	0			
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	0	0			
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health - 1	< 10	0	0			
Iron (as Fe)	ug/L	Chronic Health	≤ 2 000	0	0			
		Aesthetic	≤ 300	0	0			
Manganese (as Mn)	ug/L	Chronic Health	≤ 500	0	0			
		Aesthetic	< 100	0	0			
Aluminium (as Al)	ug/L	Operational	≤ 300	0	0			
Total Coliform Count	cfu/100ml	Operational	≤ 10	24	22	91.7%	Good	2.08
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	24	24	100.0%	Excellent	0.00
Chloroform	mg/L	Chronic Health	≤ 0.3	0	0			
Bromodichloromethane	mg/L	Chronic Health	≤ 0.06	0	0			
Dibromochloromethane	mg/L	Chronic Health	≤ 0.1	0	0			
Bromoform	mg/L	Chronic Health	≤ 0.1	0	0			
Phenols	ug/L	Aesthetic	≤ 10	0	0			

Acute Health - 1 Chemical	0	0		
Acute Health - 1 Microbiological	24	24	100.0%	Excellent
Chronic Health	24	24	100.0%	Excellent
Aesthetic	48	48	100.0%	Excellent
Risk Assessment Defined Health (Acute or Chronic)	48	48	100.0%	Excellent
Operational Efficiency	72	43	59.7%	Unacceptable

Riverlands			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
pH (at 25°C)	pH	Operational	≥5.0 - ≤ 9.7	0	0			
Conductivity	mS/m	Aesthetic	≤ 170	0	0			
Turbidity	NTU	Operational	≤ 1	0	0			
		Aesthetic	≤ 5	0	0			
Free chlorine	mg/L	Chronic Health	≤ 5	0	0			
Colour (as Pt)	mg/L Pt-Co	Aesthetic	< 20	0	0			
Total Alkalinity (as CaCO ₃)			-					
Total Hardness (as CaCO ₃)			-					
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	0	0			
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	0	0			
Sodium (as Na)	mg/L	Aesthetic	≤ 200	0	0			
Potassium (as K)	mg/L	Operational / Health	≤ 50	0	0			
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	0	0			
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	0	0			
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	0	0			
Sulphate (as SO ₄)	mg/L	Acute Health - 1	≤ 500	0	0			
		Aesthetic	≤ 250	0	0			
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	0	0			
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	0	0			
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health - 1	< 10	0	0			
Iron (as Fe)	ug/L	Chronic Health	≤ 2 000	0	0			
		Aesthetic	≤ 300	0	0			
Manganese (as Mn)	ug/L	Chronic Health	≤ 500	0	0			
		Aesthetic	< 100	0	0			
Aluminium (as Al)	ug/L	Operational	≤ 300	0	0			
Total Coliform Count	cfu/100ml	Operational	≤ 10	4	3	75.0%	Unacceptable	7.75
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	4	4	100.0%	Excellent	0.00
Chloroform	mg/L	Chronic Health	≤ 0.3	0	0			
Bromodichloromethane	mg/L	Chronic Health	≤ 0.06	0	0			
Dibromochloromethane	mg/L	Chronic Health	≤ 0.1	0	0			
Bromoform	mg/L	Chronic Health	≤ 0.1	0	0			
Phenols	ug/L	Aesthetic	≤ 10	0	0			

Acute Health - 1 Chemical	0	0		
Acute Health - 1 Microbiological	4	4	100.0%	Excellent
Chronic Health	0	0		
Aesthetic	0	0		
Risk Assessment Defined Health (Acute or Chronic)	4	4	100.0%	Excellent
Operational Efficiency	4	3	75.0%	Unacceptable

Abbotsdale			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
pH (at 25°C)	pH	Operational	≥5.0 - ≤ 9.7	0	0			
Conductivity	mS/m	Aesthetic	≤ 170	0	0			
Turbidity	NTU	Operational	≤ 1	0	0			
		Aesthetic	≤ 5	0	0			
Free chlorine	mg/L	Chronic Health	≤ 5	0	0			
Colour (as Pt)	mg/L Pt-Co	Aesthetic	< 20	0	0			
Total Alkalinity (as CaCO ₃)			-					
Total Hardness (as CaCO ₃)			-					
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	0	0			
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	0	0			
Sodium (as Na)	mg/L	Aesthetic	≤ 200	0	0			
Potassium (as K)	mg/L	Operational / Health	≤ 50	0	0			
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	0	0			
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	0	0			
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	0	0			
Sulphate (as SO ₄)	mg/L	Acute Health - 1	≤ 500	0	0			
		Aesthetic	≤ 250	0	0			
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	0	0			
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	0	0			
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health - 1	< 10	0	0			
		Chronic Health	≤ 2 000	0	0			
Iron (as Fe)	ug/L	Aesthetic	≤ 300	0	0			
		Chronic Health	≤ 500	0	0			
Manganese (as Mn)	ug/L	Aesthetic	< 100	0	0			
		Operational	≤ 300	0	0			
Aluminium (as Al)	ug/L	Operational	≤ 300	0	0			
Total Coliform Count	cfu/100ml	Operational	≤ 10	3	3	100.0%	Excellent	0.67
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	3	3	100.0%	Excellent	0.00
Chloroform	mg/L	Chronic Health	≤ 0.3	0	0			
Bromodichloromethane	mg/L	Chronic Health	≤ 0.06	0	0			
Dibromochloromethane	mg/L	Chronic Health	≤ 0.1	0	0			
Bromoform	mg/L	Chronic Health	≤ 0.1	0	0			
Phenols	ug/L	Aesthetic	≤ 10	0	0			

Acute Health - 1 Chemical	0	0		
Acute Health - 1 Microbiological	3	3	100.0%	Excellent
Chronic Health	0	0		
Aesthetic	0	0		
Risk Assessment Defined Health (Acute or Chronic)	3	3	100.0%	Excellent
Operational Efficiency	3	3	100.0%	Excellent

Chatsworth			SANS2411-2011	Compliance Calculations				
Parameter	Unit	Risk	Standard Limits (SANS 241-2006 Class I)	Total Number of Samples	Number of Samples Complying	% Compliance Achieved	Performance (Population up to 100 000)	Average
pH (at 25°C)	pH	Operational	≥5.0 - ≤ 9.7	1	1			
Conductivity	mS/m	Aesthetic	≤ 170	0	0			
Turbidity	NTU	Operational	≤ 1	0	0			
		Aesthetic	≤ 5	0	0			
Free chlorine	mg/L	Chronic Health	≤ 5	0	0			
Colour (as Pt)	mg/L Pt-Co	Aesthetic	< 20	0	0			
Total Alkalinity (as CaCO ₃)			-					
Total Hardness (as CaCO ₃)			-					
Calcium (as Ca)	mg/L	Aesthetic / Operation	≤ 150	0	0			
Magnesium (as Mg)	mg/L	Aesthetic / Health	≤ 70	0	0			
Sodium (as Na)	mg/L	Aesthetic	≤ 200	0	0			
Potassium (as K)	mg/L	Operational / Health	≤ 50	0	0			
Zinc (as Zn)	mg/L	Aesthetic	≤ 5	0	0			
Chloride (as Cl)	mg/L	Aesthetic	≤ 300	0	0			
Fluoride (as F)	mg/L	Chronic Health	≤ 1.5	0	0			
Sulphate (as SO ₄)	mg/L	Acute Health - 1	≤ 500	0	0			
		Aesthetic	≤ 250	0	0			
Total Dissolved Solids	mg/L	Aesthetic	≤ 1 200	0	0			
Ammonia Nitrogen (as N)	mg/L	Aesthetic	≤ 1.5	0	0			
Nitrate & Nitrite Nitrogen (as N)	mg/L	Acute Health - 1	< 10	0	0			
Iron (as Fe)	ug/L	Chronic Health	≤ 2 000	0	0			
		Aesthetic	≤ 300	0	0			
Manganese (as Mn)	ug/L	Chronic Health	≤ 500	0	0			
		Aesthetic	< 100	0	0			
Aluminium (as Al)	ug/L	Operational	≤ 300	0	0			
Total Coliform Count	cfu/100ml	Operational	≤ 10	3	3	100.0%	Excellent	0.00
Escherichia Coli Type 1	cfu/100ml	Acute Health - 1	≤ 0	3	3	100.0%	Excellent	0.00
Chloroform	mg/L	Chronic Health	≤ 0.3	0	0			
Bromodichloromethane	mg/L	Chronic Health	≤ 0.06	0	0			
Dibromochloromethane	mg/L	Chronic Health	≤ 0.1	0	0			
Bromoform	mg/L	Chronic Health	≤ 0.1	0	0			
Phenols	ug/L	Aesthetic	≤ 10	0	0			

Acute Health - 1 Chemical	0	0		
Acute Health - 1 Microbiological	3	3	100.0%	Excellent
Chronic Health	0	0		
Aesthetic	0	0		
Risk Assessment Defined Health (Acute or Chronic)	3	3	100.0%	Excellent
Operational Efficiency	4	4	100.0%	Excellent