water & sanitation
Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Quarterly Water Quality Status of the Wilge River Catchment

1 July 2013 - 30 June 2014

Sample Points	Sample Point Description	Ammonia (NH4)	Chloride (Cl)	Fluoride (F)	M-Alkalinity (M-Alk)	Nitrate (NO3)	Phosphate (PO4)	Sulphate (SO4)	Chemical Oxygen Demand (COD)	Conductivity (EC)	pH	*E. coli*
WLA	Lesotho Highlands Ash River Outfall 28°26'22.13"S 28°23'49.64"E	0.10	<10	0.08	34	0.12	0.07	<5.0	<10	8	7.10	3
		0.20	<10	0.08	37	1.20	0.08	44	<10	10	7.00	1,930
		0.18	<10	0.08	38	0.16	0.11	<5.0	<10	9	7.20	125
		0.20	<10	0.12	35	0.38	0.08	6	<10	8	7.10	6
WLS	Ash River - Soulspoort Dam 28°16'20.27"S 28°22'22.10"E	0.10	<10	0.08	35	0.17	0.07	<5.0	<10	8	7.10	
		0.25	14	0.27	93	1.02	0.28	22	17	28	7.27	
		0.18	<10	0.08	38	0.37	0.08	<5.0	<10	9	7.40	
		0.20	<10	0.13	36	0.47	0.08	5	<10	8	7.30	
WLB	Wilge Liebenbergsvlei @ Bethlehem 28°11'27.05"S 28°20'37.05"E	0.10	<10	0.08	36	0.14	0.08	<5.0	<10	6	7.10	
		0.20	<10	0.13	39	0.61	0.12	10	<10	11	7.00	
		0.18	<10	0.08	46	0.18	0.08	6	<10	11	7.30	
		0.20	<10	0.13	38	1.20	0.10	6	<10	8	7.30	
WJA	Jordaanspruit above Bethlehem 28°15'1.05"S 28°18'31.85"E	0.10	12	0.23	110	0.30	0.05	9	24	26	7.90	
		0.20	<10	0.20	130	1.40	0.08	13	23	34	7.80	
WJ	Jordaanspruit below Bethlehem 28°10'0.45"S 28°18'38.66"E	0.30	19	0.19	110	1.60	0.07	21	31	38	7.50	
		1.60	26	0.17	125	2.20	0.23	23	34	42	7.40	
		0.76	22	0.25	105	1.60	0.26	20	30	35	7.60	
		0.31	25	0.23	110	2.10	0.18	31	28	37	7.30	
WLBB	Wilge River below Bethlehem 28° 6'11.72"S 28°17'49.43"E	0.10	<10	0.10	36	0.16	0.05	5	<10	8	7.10	
		0.20	<10	0.18	39	0.50	0.12	10	<10	12	6.90	
		0.18	<10	0.13	50	0.13	0.08	6	13	12	7.30	
		0.20	<10	0.13	39	2.30	0.41	7	<10	9	7.30	
WLR	Wilge River @ Reitz 27°45'28.18"S 28°19'39.05"E	0.28	<10	0.10	37	0.18	0.15	5	<10	8	7.10	
		0.20	<10	0.14	40	0.82	0.08	13	<10	11	7.00	
		0.18	<10	0.17	52	0.31	0.08	8	18	13	7.30	
		0.20	<10	0.12	39	0.37	0.13	7	<10	9	7.20	
WL	Liebenbergsvlei River between Tweeling & Frankfort 27°25'51.31"S 28°31'35.66"E	0.10	<10	0.13	38	0.10	0.05	6	<10	9	7.10	
		0.20	<10	0.16	43	1.40	0.08	7	<10	14	6.90	
		0.18	<10	0.16	55	0.11	0.10	6	22	14	7.30	
		0.20	<10	0.13	41	0.33	0.10	6	<10	9	7.20	
EQQ	Elands River below Qwa-Qwa 28°22'33.68"S 28°51'38.22"E	0.31	14	0.10	110	2.90	0.36	16	17	31	7.60	
		0.25	11	0.11	92	1.80	0.44	14	16	29	7.20	
		0.18	<10	0.08	64	0.42	0.10	6	<10	16	7.30	
		0.20	11	0.10	105	2.20	0.19	13	16	27	7.50	
WE	Elands River @ Aberfeldy 28°13'48.53"S 28°51'3.03"E	0.10	13	0.11	130	1.70	0.15	14	14	33	8.20	
		0.34	<10	0.23	99	1.10	0.21	16	20	28	7.20	
		0.18	<10	0.13	71	0.38	0.11	7	11	18	7.50	
		0.20	11	0.21	115	1.90	0.18	14	<10	29	7.70	
STERK	Sterkfontein Dam 28°24'30.30"S 29° 2'15.00"E	0.10	<10	0.16	44	<0.10	0.05	12	<10	10	7.20	
		0.20	<10	0.19	45	0.35	0.27	44	<10	14	7.20	
		0.18	<10	0.16	44	<0.10	0.13	<5.0	<10	10	7.40	
		0.20	<10	0.55	42	0.34	0.10	5.3	<10	9	7.40	
WN	Nuewjaarspruit d/s of Sterkfontein Dam 28°17'19.39"S 29° 5'28.26"E	0.10	<10	0.14	51	0.24	0.05	8	<10	11	7.40	
		0.20	<10	0.14	56	0.71	0.12	<5.0	15	15	7.10	
		0.18	<10	0.16	46	<0.10	0.08	<5.0	20	12	7.20	
		0.20	<10	0.14	78	0.29	0.10	5	10	20	7.40	
WAH	Wilge above Harrismith 28°18'27.90"S 29° 7'52.48"E	0.10	<10	0.10	37	<0.10	0.10	12	<10	10	6.90	
		0.20	14	0.23	35	1.80	0.08	55	11	12	6.70	
		0.18	<10	0.08	24	0.11	0.08	<5.0	15	6	6.90	
		0.20	<10	0.27	32	0.49	0.10	<5.0	<10	8	6.90	
WH	Wilge River below Harrismith 28°13'20.10"S 28°57'56.96"E	1.50	<10	0.12	78	0.75	0.29	7	22	22	7.90	
		1.20	<10	0.13	64	1.50	0.13	11	20	21	6.90	
		0.26	<10	0.11	28	0.36	0.14	<5.0	18	9	6.90	
		0.77	<10	0.28	60	1.40	0.17	10	17	18	7.10	
MR	Meul River downstream of Ribbokspruit 28° 1'35.48"S 29°15'0.51"E	0.10	10	0.23	125	0.13	0.07	22	<10	30	8.00	
		0.25	14	0.27	93	1.02	0.28	22	17	28	7.27	
		0.18	<10	0.22	54	<0.10	0.10	<5.0	18	14	7.30	
		0.77	<10	0.20	81	0.12	0.16	10	<10	21	7.60	
WM	Mollen River @ Letuka 28° 1'24.18"S 28°59'41.27"E	0.25	<10	0.27	93	1.00	0.28	22	17	28	7.30	
		0.20	14	0.26	125	0.33	0.08	20	23	34	7.70	
		0.18	<10	0.24	56	<0.10	0.08	6	16	15	7.30	
		0.20	<10	0.23	85	0.12	0.12	10	<10	20	7.70	
WMW	Wilge Meul @ Waaiwater 27°54'11.90"S 28°48'27.91"E	0.10	10	0.18	120	0.39	0.07	12	16	29	8.40	
		0.20	<10	0.16	90	0.76	0.08	17	19	26	7.40	
		0.18	<10	0.18	55	0.26	0.08	<5.0	18	14	7.40	
		0.20	<10	0.26	95	0.69	0.08	11	<10	24	7.80	
WC	Cornelis River below Warden 27°50'36.89"S 28°57'42.03"E	0.25	<10	0.15	55	0.69	0.20	32	37	16	7.10	
		0.25	<10	0.34	100	0.12	0.10	12	30	25	7.40	
		0.25	12	0.33	135	0.39	0.10	17	17	33	7.90	
WAF	Wilge above Frankfort 27°18'36.42"S 28°31'58.65"E	0.10	11	0.16	140	0.45	0.05	26	12	33	7.90	
		0.20	12	0.19	140	0.39	0.08	52	24	37	7.50	
		0.18	<10	0.18	59	0.26	0.08	6	18	16	7.30	
		0.20	<10	0.20	110	0.47	0.15	15	<10	27	7.80	
WF	Wilge River @ Frankfort 27°16'18.00"S 28°29'28.41"E	0.10	<10	0.08	44	0.10	0.05	6	<10	11	7.20	71
		0.20	<10	0.08	65	0.62	0.08	11	16	18	7.10	870
		0.18	<10	0.18	56	0.24	0.08	6	15	14	7.30	690
		0.20	<10	0.08	50	0.42	0.10	8	<10	11	7.40	84

Sample Points	Sample Point Description	Ammonia (NH4)	Chloride (Cl)	Fluoride (F)	M-Alkalinity (M-Alk)	Nitrate (NO3)	Phosphate (PO4)	Sulphate (SO4)	Chemical Oxygen Demand (COD)	Conductivity (EC)	pH	*E. coli*
S- BETH	Bethlehem Sewage Works 28°12'49.19"S 28°18'35.16"E	13.00	30	0.13	135	0.59	0.95	30	66	47	7.20	373,810
		11.47	28	0.16	138	0.29	1.07	79	91	52	7.10	1040233
		18.00	30	0.19	175	0.51	0.41	18	60	54	7.50	1,203,300
		16.00	33	0.10	160	0.49	0.46	30	79	51	7.40	406,700
S-HSW	Harrismith Sewage Works 28°16'47.50"S 29° 5'49.69"E	12.00	27	0.10	175	3.90	2.10	11	290	66	7.20	510,040
		17.00	31	0.26	260	<0.10	2.20	30	85	70	7.10	2,548,500
		13.00	26	0.18	210	<0.10	2.30	48	465	58	6.90	1,732,900
		14.00	24	0.14	205	0.49	2.00	12	230	55	7.00	453,180
S-QWAQWA	Qwa-Qwa Sewage Works 28°30'29.90"S 28°49'34.21"E	11.00	37	0.17	16	12.00	3.50	34	34	39	6.50	21
		0.65	30	0.10	45	10.00	2.10	53	28	46	6.70	325
		0.25	22	0.08	67	12.00	1.60	23	22	38	7.10	1,380
		5.40	22	0.11	59	13.00	2.30	24	32	43	7.20	230
S-TSIAME	Tsiame Sewage Works 28°16'47.10"S 28°59'20.70"E	28.00	34	0.10	250	0.21	4.10	24	93	65	7.30	244,710
		21.00	32	0.15	170	0.31	3.70	75	77	59	7.30	67,790
		14.00	26	0.22	165	1.30	1.60	22	39	52	7.30	38,960
		3.80	27	0.21	88	0.90	1.10	30	21	33	7.30	590

Compliance of Sewage Work to General Standard (GN 1191 Oct 1999), where applicable

S- BETH	Bethlehem Sewage Works 28°12'49.19"S 28°18'35.16"E	13.00	30	0.13	135	0.59	0.95	30	66.00	47.00	7.20	373,810
		11.47	27	0.16	138	0.29	1.07	78	91.33	52.00	7.10	1040233
		18.00	30	0.19	175	0.51	0.41	18	60.00	54.00	7.50	1,203,300
		16.00	33	0.10	160	0.49	0.46	30	79.00	51.00	7.40	406,700
S-HSW	Harrismith Sewage Works 28°16'47.50"S 29° 5'49.69"E	12.00	27	0.10	175	3.90	2.10	11	290.00	66.00	7.20	510,040
		17.00	31	0.26	260	<0.10	2.20	30	85.00	70.00	7.10	2,548,500
		13.00	26	0.18	210	<0.10	2.30	48	465.00	58.00	6.90	1,732,900
		14.00	24	0.14	205	0.49	2.00	12	230.00	55.00	7.00	453,180
S-QWAQWA	Qwa-Qwa Sewage Works 28°30'29.90"S 28°49'34.21"E	11.00	37	0.17	16	12.00	3.50	34	34.00	39.00	6.50	21
		0.65	30	0.10	45	10.00	2.10	53	28.00	46.00	6.70	325
		0.25	22	0.08	67	12.00	1.60	23	22.00	38.00	7.10	1,380
		5.40	22	0.11	59	13.00	2.30	24	32.00	43.00	7.20	230
S-TSIAME	Tsiame Sewage Works 28°16'47.10"S 28°59'20.70"E	28.00	34	0.10	250	0.21	4.10	24	93.00	65.00	7.30	244,710
		21.00	32	0.15	170	0.31	3.70	75	77.00	59.00	7.30	67,790
		14.00	26	0.22	165	1.30	1.60	22	39.00	52.00	7.30	38,960
		3.80	27	0.21	88	0.90	1.10	30	21.00	33.00	7.30	590

Key

WLA	Lesotho Highlands Ash River Outfall 28°26'22.13"S 28°23'49.64"E	0.12	-	1 July 13 - 30 Sept 13
		0.12	-	1 Oct 13 - 31 Dec 13
		0.12	-	1 Jan 14 - 31 Mar 14
		0.12	-	1 Apr 14 - 30 Jun 14

Water Quality Guidelines

	-	Ideal
	-	Acceptable
	-	Tolerable
	-	Unacceptable
	-	No sample or result available

Sewage Works Compliance to General Standard (GN 1191 Oct 1999)

Variables	Measured as	Acceptable Management Level	Unacceptable
Physical			
Conductivity	mS/m	<150	>=150
pH	pH units	5.5 - 9.5	< 5.5; >9.5
Organic			
Chemical Oxygen Demand (COD)**	mg/l	<75	>=75
Macro Elements			
Ammonia (NH_4)	mg/l	<3	>=3
Fluoride (F)	mg/l	<1	>=1
Nitrate (NO_3)	mg/l	<15	>=15
Phosphate (PO_4)	mg/l	<10	>10
Bacteriological			
Faecal coliforms	counts/100m	<1000	>=1000

** After removal of algae

Data supplied by Rand Water. For all water quality queries contact DWA Gauteng Regional Office staff member responsible for the Wilge River Catchment. Contact details can be obtained from The Reservoir website www.reservoir.co.za/contact.htm