

Rand Water

Quarterly Water Quality Status of the Blesbokspruit Catchment

01 Oct 2018 - 30 Sep 2019



Sample Points	Sample Point Description	Quarter	Aluminium	Ammonia	Chemical Oxygen Demand	Chloride	Conductivity	Daphnia Toxicity	Dissolved Oxygen	E.coli	Fluoride	Iron	Magnesium	Manganese	Nitrate	pH	Phosphate	Sodium	Sulphate	Suspended Solids
B1	Outflow from New Kleinfontein Dam 26° 10.979'S 28° 20.051'E	1	0.04	4.05		55	51		3.4		0.47	0.09	18	0.08	0.60	7.7	0.90	42	65	
		2	0.03	2.23		39	40		1.1		0.51	0.18	13	0.20	4.67	7.7	0.83	47	55	
		3	0.08	0.27		36	33		2.5		0.47	0.06	18	0.09	0.87	7.5	0.25	50	60	
		4	0.03	1.27		44	42		4.9		0.56	0.05	10	0.03	0.50	7.6	0.31	31	50	
B2	Outflow from Van Ryn Dam 26° 09.961'S 28° 22.264'E	1	0.03	5.51		64	57		3.8		0.56	0.37	10	0.06	0.73	7.5	2.22	53	55	
		2	0.03	3.71		49	40		0.8		0.53	0.22	8	0.05	0.50	7.5	1.10	27	49	
		3	0.03	10.20		55	61		3.0		0.60	0.28	16	0.15	1.20	7.7	1.43	59	61	
		4	0.03	12.70		67	73		3.8		0.63	0.42	10	0.14	0.92	7.9	1.58	68	58	
B3	Stream from Brakpan Lake 26° 12.876'S 28° 22.756'E	1	0.03	1.30		101	74		2.0		0.55	0.48	18	0.39	0.50	7.5	2.19	74	34	
		2	0.03	0.23		60	47		0.9		0.47	0.31	10	0.15	0.50	7.0	0.33	49	32	
		3	0.03	0.08		51	49		2.0		0.56	0.08	9	0.08	0.73	7.3	0.25	47	69	
		4	0.03	8.10		72	63		2.8		0.60	0.30	11	0.47	0.50	7.3	0.86	56	42	
B4	Causeway @ Alexander Dam 26° 12.673'S 28° 24.879'E	1	0.05	0.06		75	64		2.9		0.42	0.07	14	0.04	0.50	7.9	0.25	68	81	
		2	0.03	0.05		42	42		1.4		0.51	0.07	9	0.06	0.50	7.8	0.32	34	64	
		3	0.05	0.06		49	44		2.9		0.60	0.05	10	0.03	0.83	7.6	0.29	33	81	
		4	0.03	4.26		63	66		4.9		0.56	0.02	13	0.04	0.97	7.9	0.53	61	76	
B13	Stream from Daveyton below Welgedacht WWTW 26° 11.941'S 28° 28.779'E	1	0.06	0.41		81	97		1.0	539	0.70	0.20	25	0.13	3.40	7.5	0.54	84	164	
		2	0.05	0.12		46	48		1.0	2,680	0.49	0.16	10	0.07	1.95	7.6	0.53	47	47	
		3	0.03	1.24		53	61		1.1	48	0.70	0.07	18	0.15	2.18	7.5	0.55	55	83	
		4	0.03	2.36		90	75		3.7	155	1.17	0.11	11	0.13	1.53	7.4	2.03	91	81	
B5	Blesbokspruit @ Welgedacht 26° 12.871'S 28° 28.803'E	1	0.07	3.80		90	81		1.0		0.85	0.22	26	0.23	1.04	7.6	3.25	89	259	
		2	0.03	1.18		60	69		0.5		0.61	0.16	14	0.42	1.14	7.8	0.52	58	95	
		3	0.04	1.34		58	65		1.7		0.74	0.12	12	0.08	1.43	7.5	0.43	49	98	
		4	0.06	1.99		96	91		3.7		0.58	0.08	18	0.11	1.50	7.6	1.04	121	137	
B16	Blesbokspruit @ Grootvlei Mine Train Bridge 26° 15.332'S 28° 29.896'E	1	0.03	0.35		82	88		4.1		0.66	0.05	20	0.24	0.60	8.0	0.94	88	129	
		2	0.03	0.56		65	92		0.7		0.82	0.05	21	0.18	0.90	7.6	0.61	71	217	
		3	0.03	0.22		76	148		1.1		1.30	0.08	35	0.14	0.84	7.6	0.27	160	530	
		4	0.03	0.17		100	167		2.9		1.97	0.06	49	0.19	1.43	7.5	0.31	153	680	
B6	Klein Blesbokspruit @ Selection Park 26° 16.979'S 28° 26.640'E	1	0.03	0.67		58	45		2.6		0.42	0.19	9	0.33	0.97	7.5	0.25	21	37	
		2	0.05	0.27		35	41		0.9		0.54	0.30	10	0.50	0.84	7.6	0.25	27	78	
		3	0.18	0.06		33	42		3.9		0.51	0.26	13	0.32	0.50	7.7	0.25	40	67	
		4	0.05	0.32		31	39		7.9		0.45	0.25	11	0.39	0.71	7.8	0.25	28	40	
B15	Blesbokspruit on N17 Toll Road @ Springs 26° 16.287'S 28° 30.231'E	1	0.03	0.05		87	98		1.2		0.46	0.11	22	0.35	0.50	7.8	0.91	93	152	
		2	0.03	0.40		56	101		0.6		0.67	0.04	20	0.60	0.56	7.6	0.73	75	170	
		3	0.03	0.24		74	137		3.0		1.47	0.03	25	0.16	0.66	7.5	0.31	68	498	
		4	0.04	3.48		110	168		3.4		1.73	0.06	50	0.22	1.17	7.6	0.68	142	690	
B17	Blesbokspruit @ Marievale Bird Sanctuary 26° 21.536'S 28° 30.467'E	1	0.03	0.06		122	178		0.7		0.85	0.06	51	0.38	0.50	7.6	0.52	90	723	
		2	0.03	0.05		87	112		0.7		0.91	0.03	25	0.25	0.50	7.8	0.76	94	265	
		3	0.03	0.06		73	125		2.6		1.17	0.03	32	0.25	0.50	7.6	0.57	88	407	
		4	0.03	0.16		86	147		4.1		1.67	0.02	44	0.83	0.50	7.7	0.34	142	522	
B11	Blesbokspruit on R42 bridge @ Nigel 26° 23.433'S 28° 29.838'E	1	0.03	0.04		117	173		1.1		0.84	0.01	51	0.44	0.50	7.9	0.52	111	670	
		2	0.03	0.07		85	113		0.8		1.02	0.05	26	0.29	0.50	7.9	0.77	88	298	
		3	0.04	0.08		75	122		2.8		1.17	0.05	29	0.11	0.50	7.9	0.48	83	402	
		4	0.03	0.23		103	158		5.6		1.80	0.02	46	0.24	0.50	7.8	0.34	140	603	
B7	Stormwater drain from Nigel Dam 26° 24.933'S 28° 27.958'E	1	0.03	0.67		54	135		2.1		1.13	0.54	34	0.79	0.55	6.8	0.25	65	600	
		2	0.05	0.11		53	83		1.5		1.05	0.21	18	0.42	0.50	6.7	0.60	71	202	
		3	0.03	0.05		42	68		3.4		0.95	0.17	14	0.32	0.50	7.7	0.25	44	170	
		4	0.03	0.09		44	76		5.5		1.00	0.03	20	0.57	0.50	7.7	0.25	66	197	
B8	Blesbokspruit @ Nigel 26° 26.313'S 28° 27.361'E	1	0.09	0.60		102	165		1.9	7,127	1.72	0.27	38	0.50	0.73	7.8	0.53	107	490	
		2	0.05	0.36		78	111		0.8	9,175	0.93	0.05	26	0.07	0.50	8.0	0.62	86	271	
		3	0.03	0.11		73	118		2.0	2,114	1.20	0.10	21	0.17	0.50	8.0	0.46	65	388	
		4	0.06	0.15		101	158		4.7	2,804	1.97	0.06	44	0.38	0.50	8.0	0.28	124	595	
B14	Blesbokspruit @ Jameson Park 26° 28.717'S 28° 25.531'E	1	0.03	4.72		84	110		1.7		0.57	0.10	29	0.08	1.66	7.7	7.17	68	333	
		2	0.13	1.82		41	61		0.5		0.65	0.34	14	0.26	2.50	7.5	0.57	46	129	
		3	0.05	1.58		60	93		2.9		0.90	0.09	21	0.10	1.00	7.6	0.61	75	257	
		4	0.07	0.52		77	116		3.1		1.39	0.14	33	0.26	1.28	7.8	1.05	105	379	



Sample Points	Sample Point Description	Quarter	Aluminium	Ammonia	Chemical Oxygen Demand	Chloride	Conductivity	Daphnia Toxicity	Dissolved Oxygen	E.coli	Fluoride	Iron	Magnesium	Manganese	Nitrate	pH	Phosphate	Sodium	Sulphate	Suspended Solids
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B12	Stream from Kaydale Station 26° 28.627'S 28° 24.266'E	1	0.08	3.37		59	80		1.7		0.50	0.14	18	0.22	2.73	7.4	1.40	28	144	
		2	0.03	0.23		76	96		0.5		0.88	0.08	22	0.14	1.28	7.7	0.46	82	220	
		3	0.22	1.65		45	67		1.5		0.80	0.26	18	0.15	2.17	7.5	0.56	51	153	
		4	0.08	4.55		61	89		4.4		0.80	0.11	21	0.31	0.87	7.5	0.82	72	217	
B10	Blesbokspruit Weir @ Heidelberg 26° 30.641'S 28° 21.049'E	1	0.03	1.10	26	70	112	91	1.4	1,437	1.05	0.08	28	0.22	2.26	7.7	0.90	91	296	26
		2	0.06	1.11	29	67	96	100	2.1	5,509	0.87	0.16	20	0.12	1.18	7.9	0.63	66	214	85
		3	0.06	0.19	17	66	107	100	3.6	1,041	1.11	0.10	24	0.09	1.28	7.9	0.48	68	334	29
		4	0.07	0.44	20	81	133	99	4.0	1,387	1.45	0.10	33	0.24	1.97	7.7	0.43	101	424	15
S1	Suikerbosrant River below Balfour 26° 37.793'S 28° 17.797'E	1	0.04	0.18		60	57		0.9	334	0.43	0.13	21	0.23	0.57	7.8	0.25	51	72	
		2	0.05	0.10		44	44		0.6	1,958	0.49	0.14	11	0.05	0.54	7.6	0.41	32	12	
		3	0.11	0.07		28	35		2.4	188	0.43	0.17	12	0.10	0.52	7.6	0.26	25	17	
		4	0.03	0.18		50	61		4.9	36	0.42	0.03	17	0.02	2.41	7.7	0.25	47	24	
S2	Suikerbosrant River Weir @ Three Rivers 26° 40.253'S 28° 01.828'E	1	0.04	0.04	20	88	121	98	2.3	144	0.68	0.08	29	0.07	3.61	8.0	0.41	90	391	16
		2	0.04	0.12	22	73	88	100	1.7	407	0.86	0.08	20	0.03	1.28	8.1	0.42	65	217	30
		3	0.10	0.10	16	66	101	100	3.6	389	1.05	0.11	23	0.07	1.35	8.0	0.32	66	305	19
		4	0.04	0.94	19	87	121	100	5.3	165	1.36	0.07	34	0.07	2.13	8.0	0.32	117	442	19

Key

B12	Stream from Kaydale Station 26° 28.627'S 28° 24.266'E	1	0.08	3.37
		2	0.03	0.23
		3	0.22	1.65
		4	0.08	4.55

- 1 Oct to 31 Dec 2018
- 1 Jan to 31 Mar 2019
- 1 Apr to 30 Jun 2019
- 1 Jul to 30 Sep 2019

Water Quality Guidelines

	- Ideal
	- Acceptable
	- Tolerable
	- Unacceptable
	- Not analysed

Variables	Measured as	Ideal Catchment Background	Acceptable Management Target	Tolerable Interim Target	Unacceptable
Physical					
Conductivity	mS/m	< 45	45 - 70	70 - 120	> 120
Dissolved Oxygen (O ₂)	mg/l O ₂		> 6.0	5.0 - 6.0	< 5.0
pH	pH units	6.5 - 8.5			< 6.5; > 8.5
Suspended Solids	mg/l	< 20	20 - 30	30 - 55	> 55
Organic					
Chemical Oxygen Demand (COD)	mg/l	< 20	20 - 35	35 - 55	> 55
Macro Elements					
Aluminium (Al)	mg/l		< 0.3	0.3 - 0.5	> 0.5
Ammonia (NH ₄)	mg/l	< 0.1	0.1 - 1.5	1.5 - 5.0	> 5.0
Chloride (Cl)	mg/l	< 80	80 - 150	150 - 200	> 200
Fluoride (F)	mg/l	< 0.19	0.19 - 0.70	0.70 - 1.00	> 1.00
Iron (Fe)	mg/l	< 0.1	0.1 - 0.5	0.5 - 1.0	> 1.0
Magnesium (Mg)	mg/l	< 8	8 - 30	30 - 70	> 70
Manganese (Mn)	mg/l	< 0.2	0.2 - 0.5	0.5 - 1.0	> 1.0
Nitrate (NO ₃)	mg/l	< 0.5	0.5 - 3.0	3.0 - 6.0	> 6.0
Phosphate (PO ₄)	mg/l	< 0.2	0.2 - 0.4	0.4 - 0.6	> 0.6
Sodium (Na)	mg/l	< 70	70 - 100	100 - 150	> 150
Sulphate (SO ₄)	mg/l	< 150	150 - 300	300 - 500	> 500
Bacteriological					
<i>E.coli</i>	counts/100ml	< 130	130 - 200	200 - 400	> 400
Faecal coliforms	counts/100ml		< 126	126 - 1,000	> 1,000
Biological					
<i>Daphnia</i>	% survival	100	90 - 100	80 - 90	< 80