

Rand Water

Quarterly Water Quality Status of the Blesbokspruit Catchment

01 Jul 2018 - 30 Jun 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	0.06	0.15		40	74		1.7		0.29	0.05	9	0.01	0.57	7.8	0.13	29	54	
		2	0.04	4.05		55	51		3.4		0.47	0.09	18	0.08	0.60	7.7	0.90	42	65	
		3	0.03	2.23		39	40		1.1		0.51	0.18	13	0.20	4.67	7.7	0.83	47	55	
		4	0.08	0.27		36	33		2.5		0.47	0.06	18	0.09	0.87	7.5	0.25	50	60	
B2	Outflow from Van Ryn Dam 26° 09.961'S 28° 22.264'E	1	0.03	5.63		66	63		2.3		0.19	0.44	10	0.14	0.81	7.8	2.27	65	50	
		2	0.03	5.51		64	57		3.8		0.56	0.37	10	0.06	0.73	7.5	2.22	53	55	
		3	0.03	3.71		49	40		0.8		0.53	0.22	8	0.05	0.50	7.5	1.10	27	49	
		4	0.03	10.20		55	61		3.0		0.60	0.28	16	0.15	1.20	7.7	1.43	59	61	
B3	Stream from Brakpan Lake 26° 12.876'S 28° 22.756'E	1	0.06	0.17		100	59		1.6		0.25	0.08	13	0.04	3.42	7.3	0.33	64	80	
		2	0.03	1.30		101	74		2.0		0.55	0.48	18	0.39	0.50	7.5	2.19	74	34	
		3	0.03	0.23		60	47		0.9		0.47	0.31	10	0.15	0.50	7.0	0.33	49	32	
		4	0.03	0.08		51	49		2.0		0.56	0.08	9	0.08	0.73	7.3	0.25	47	69	
B4	Causeway @ Alexander Dam 26° 12.673'S 28° 24.879'E	1	0.09	0.15		59	56		3.4		0.24	0.03	12	0.02	0.46	8.6	0.15	62	95	
		2	0.05	0.06		75	64		2.9		0.42	0.07	14	0.04	0.50	7.9	0.25	68	81	
		3	0.03	0.05		42	42		1.4		0.51	0.07	9	0.06	0.50	7.8	0.32	34	64	
		4	0.05	0.06		49	44		2.9		0.60	0.05	10	0.03	0.83	7.6	0.29	33	81	
B9	Outflow from Cowles Dam 26° 12.523'S 28° 28.039'E	1	0.10	0.53		125	125		0.7	1,653	0.21	0.15	28	0.32	0.90	7.7	0.18	102	215	
		2	0.07	2.82		108	111		0.7	1,151	0.84	0.14	22	0.23	1.32	7.6	2.11	103	163	
		3	0.03	0.34		46	61		0.8	144	0.62	0.04	13	0.02	1.21	7.8	0.83	46	87	
		4	0.04	1.36		66	77		1.3	21	0.88	0.07	22	0.10	1.90	7.5	0.46	76	205	
B13	Stream from Daveyton below Welgedacht WWTW 26° 11.941'S 28° 28.779'E	1	0.05	0.59		62	74		1.2	2,134	0.20	0.13	17	0.07	2.07	7.4	0.81	74	62	
		2	0.06	0.41		81	97		1.0	539	0.70	0.20	25	0.13	3.40	7.5	0.54	84	164	
		3	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	
		4	0.03	1.24		53	61		1.1	48	0.70	0.07	18	0.15	2.18	7.5	0.55	55	83	
B5	Blesbokspruit @ Welgedacht 26° 12.871'S 28° 28.803'E	1	0.05	0.90		97	79		1.1		0.21	0.13	17	0.50	1.01	7.6	0.86	82	122	
		2	0.07	3.80		90	81		1.0		0.85	0.22	26	0.23	1.04	7.6	3.25	89	259	
		3	0.03	1.18		60	69		0.5		0.61	0.16	14	0.42	1.14	7.8	0.52	58	95	
		4	0.04	1.34		58	65		1.7		0.74	0.12	12	0.08	1.43	7.5	0.43	49	98	
B16	Blesbokspruit @ Grootvlei Mine Train Bridge 26° 15.332'S 28° 29.896'E	1	0.03	0.15		110	182		0.9		0.21	0.03	48	0.15	1.77	7.6	0.42	132	857	
		2	0.03	0.35		82	88		4.1		0.66	0.05	20	0.24	0.60	8.0	0.94	88	129	
		3	0.03	0.56		65	92		0.7		0.82	0.05	21	0.18	0.90	7.6	0.61	71	217	
		4	0.03	0.22		76	148		1.1		1.30	0.08	35	0.14	0.84	7.6	0.27	160	530	
B6	Klein Blesbokspruit @ Selection Park 26° 16.979'S 28° 26.640'E	1	0.03	0.21		47	46		1.4		0.22	0.13	13	0.24	0.98	7.9	0.13	33	35	
		2	0.03	0.67		58	45		2.6		0.42	0.19	9	0.33	0.97	7.5	0.25	21	37	
		3	0.05	0.27		35	41		0.9		0.54	0.30	10	0.50	0.84	7.6	0.25	27	78	
		4	0.18	0.06		33	42		3.9		0.51	0.26	13	0.32	0.50	7.7	0.25	40	67	
B15	Blesbokspruit on N17 Toll Road @ Springs 26° 16.287'S 28° 30.231'E	1	0.03	0.15		96	167		0.8		0.23	0.03	44	0.13	0.91	7.6	0.47	557	703	
		2	0.03	0.05		87	98		1.2		0.46	0.11	22	0.35	0.50	7.8	0.91	93	152	
		3	0.03	0.40		56	101		0.6		0.67	0.04	20	0.60	0.56	7.6	0.73	75	170	
		4	0.03	0.24		74	137		3.0		1.47	0.03	25	0.16	0.66	7.5	0.31	68	498	
B17	Blesbokspruit @ Marievale Bird Sanctuary 26° 21.536'S 28° 30.467'E	1	0.03	0.15		99	165		1.3		0.24	0.01	47	0.12	0.46	7.7	0.42	372	697	
		2	0.03	0.06		122	178		0.7		0.85	0.06	51	0.38	0.50	7.6	0.52	90	723	
		3	0.03	0.05		87	112		0.7		0.91	0.03	25	0.25	0.50	7.8	0.76	94	265	
		4	0.03	0.06		73	125		2.6		1.17	0.03	32	0.25	0.50	7.6	0.57	88	407	
B11	Blesbokspruit on R42 bridge @ Nigel 26° 23.433'S 28° 29.838'E	1	0.08	0.15		98	126		1.8		0.25	0.15	34	0.21	0.46	7.8	0.42	291	670	
		2	0.03	0.04		117	173		1.1		0.84	0.01	51	0.44	0.50	7.9	0.52	111	670	
		3	0.03	0.07		85	113		0.8		1.02	0.05	26	0.29	0.50	7.9	0.77	88	298	
		4	0.04	0.08		75	122		2.8		1.17	0.05	29	0.11	0.50	7.9	0.48	83	402	
B7	Stormwater drain from Nigel Dam 26° 24.933'S 28° 27.958'E	1	0.06	0.18		45	84		1.0		0.39	0.19	15	0.52	0.46	7.4	0.13	73	257	
		2	0.03	0.67		54	135		2.1		1.13	0.54	34	0.79	0.55	6.8	0.25	65	600	
		3	0.05	0.11		53	83		1.5		1.05	0.21	18	0.42	0.50	6.7	0.60	71	202	
		4	0.03	0.05		42	68		3.4		0.95	0.17	14	0.32	0.50	7.7	0.25	44	170	
B8	Blesbokspruit @ Nigel 26° 26.313'S 28° 27.361'E	1	0.04	0.25		106	135		2.5	3,108	0.24	0.05	45	0.11	0.46	7.9	0.33	75	682	
		2	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	
		3	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	
		4	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	
B14	Blesbokspruit @ Jameson Park 26° 28.717'S 28° 25.531'E	1	0.04	0.38		117	152		1.9		0.24	0.06	44	0.09	0.50	7.7	0.39	372	617	
		2	0.03	4.72		84	110		1.7		0.57	0.10	29	0.08	1.66	7.7	7.17	68	333	
		3	0.13	1.82		41	61		0.5		0.65	0.34	14	0.26	2.50	7.5	0.57	46	129	
		4	0.05	1.58		60	93		2.9		0.90	0.09	21	0.10	1.00	7.6	0.61	75	257	

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Quarterly Water Quality Status of the Blesbokspruit Catchment

01 Jul 2018 - 30 Jun 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
B12	Stream from Kaydale Station 26° 28.627'S 28° 24.266'E	1	0.14	4.40		39	50		1.4		0.20	0.31	12	0.36	1.80	7.4	1.33	55	42	
		2	0.08	3.37		59	80		1.7		0.50	0.14	18	0.22	2.73	7.4	1.40	28	144	
		3	0.03	0.23		76	96		0.5		0.88	0.08	22	0.14	1.28	7.7	0.46	82	220	
		4	0.22	1.65		45	67		1.5		0.80	0.26	18	0.15	2.17	7.5	0.56	51	153	
B10	Blesbokspruit Weir @ Heidelberg 26° 30.641'S 28° 21.049'E	1	0.08	0.30	16	100	127	100	2.8	2,639	0.26	0.11	37	0.24	1.34	7.7	0.67	264	615	15
		2	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
		3	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
		4	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
S1	Suikerbosrant River below Balfour 26° 37.793'S 28° 17.797'E	1	0.06	0.45		41	50		2.4	28	0.21	0.12	18	0.12	2.04	7.8	0.18	33	18	
		2	0.04	0.18		60	57		0.9	334	0.43	0.13	21	0.23	0.57	7.8	0.25	51	72	
		3	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	
		4	0.11	0.07		28	35		2.4	188	0.43	0.17	12	0.10	0.52	7.6	0.26	25	17	
S2	Suikerbosrant River Weir @ Three Rivers 26° 40.253'S 28° 01.828'E	1	0.06	0.09	16	92	124	92	2.8	91	0.23	0.09	36	0.08	1.70	7.9	0.28	96	497	17
		2	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
		3	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
		4	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

Key

B12	Stream from Kaydale Station 26° 28.627'S 28° 24.266'E	1	0.14	4.40	- 1 Jul to 30 Sep 2018
		2	0.08	3.37	- 1 Oct to 31 Dec 2018
		3	0.03	0.23	- 1 Jan to 31 Mar 2019
		4	0.22	1.65	- 1 Apr to 30 Jun 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