City of Johannesburg

Quarterly Water Quality status of the Rietspruit catchment

a world class African city

			E.coli	Phosphate	Nitrate	Ammonia	Conductivity	pH	COD	Chloride	Sulphate	Microbiological Index	Chemical Index
EFE_G	Ennerdale Final Effluent (Grab)		0	0.6	7.6	0.5	54	7.6	29	80	41	Ideal	Tolerable
			90	0.5	4.7	1.9	63	7.5	29	110	64	Ideal	Tolerable
			850	1.3	3.0	2.5	60	7.5	31	80	31	Unacceptable	Tolerable
			600	0.5	2.6	1.6	88	8.1	49	140	48	Unacceptable	Tolerable
RS1	Rietspruit, Upstream of Ennerdale		230	0.5	0.5	0.5	87	7.9	29	22	250	Tolerable	Tolerable
	Works		460	0.5	0.6	0.5	91	7.9	29	22	290	Unacceptable	Tolerable
			470	0.5	0.5	0.5	89	7.9	29	20	260	Unacceptable	Tolerable
			650	0.5	0.6	0.5	92	8.2	29	22	310	Unacceptable	Tolerable
RS2	Rietspruit, Downstream of		230	0.5	1.0	0.5	83	7.8	29	28	220	Tolerable	Tolerable
	Ennerdale Works		2 600	0.5	0.9	0.8	85	7.8	29	27	240	Unacceptable	Tolerable
			4 700	0.6	0.7	0.8	85	7.7	29	26	170	Unacceptable	Tolerable
			2 500	0.6	0.7	1.1	87	8.1	34	31	310	Unacceptable	Tolerable
RS3	Rietspruit, Downstream Of Poortjie		20 000	0.5	2.1	0.7	81	7.9	29	24	230	Unacceptable	Tolerable
			8 500	0.5	1.0	0.5	86	7.8	29	22	250	Unacceptable	Tolerable
			2 600	0.5	0.8	0.5	80	7.8	29	26	560	Unacceptable	Tolerable
			100	0.5	2.2	0.5	86	7.6	29	31	250	Ideal	Tolerable
RS4	Rietspruit Welgevonden		100	0.5	0.5	0.5	22	8.1	29	22	9	Ideal	Acceptable
			140	0.5	0.5	0.5	42	7.4	29	17	150	Acceptable	Acceptable
			0	0.7	0.5	0.5	12	7.7	29	16	9	Ideal	Tolerable
RS5	Rietspruit Orange Farm		3 700	0.5	1.9	2.5	43	7.8	49	28	18	Unacceptable	Tolerable
			19 000	0.5	5.2	3.0	41	7.3	45	28	12	Unacceptable	Tolerable

August,2017 - October 2017	Ideal
November,2017 - January 2018	Acceptable
February 2018 - April 2018	Tolerable
May 2018 - July 2018	Unacceptable

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			E.coli	Phosphate	Nitrate	Ammonia	Conductivity	pH	COD	Chloride	Sulphate	Microbiological Index	Chemical Index
RS6	Rietspruit Sweet Waters		2 400	0.5	1.6	0.5	27	7.3	39	18	24	Unacceptable	Tolerable
			9 600	1.2	1.9	0.7	37	8.0	30	26	26	Unacceptable	Tolerable
			57 000	0.5	0.9	4.3	34	7.6	50	22	13	Unacceptable	Tolerable
			240 000	0.5	1.3	6.6	40	7.3	36	25	10	Unacceptable	Tolerable
			7 400	0.5	1.4	0.5	28	7.2	29	20	27	Unacceptable	Acceptable
			1 000	0.5	2.0	0.5	30	7.8	29	21	9	Unacceptable	Acceptable
RS7	Rietspruit Finetown		100 000	0.5	1.6	3.0	29	7.7	51	19	10	Unacceptable	Tolerable
			530 000	2.6	2.3	6.7	26	7.2	29	17	10	Unacceptable	Tolerable
			200 000	0.5	1.7	0.5	29	7.3	53	20	34	Unacceptable	Tolerable
			1 500	0.5	1.8	1.1	28	7.8	29	19	35	Unacceptable	Acceptable

August,2017 - October 2017	Ideal
November,2017 - January 2018	Acceptable
February 2018 - April 2018	Tolerable
May 2018 - July 2018	Unacceptable

ENVIRONMENT AND INFRASTRUCTURE SERVICES DEPARTMENT

RIETSPRUIT CATCHMENT FORUM

SUMMARY NOVEMBER 13TH, 2018

The report provides an overview of the water quality for the quarter under review.

The quality of the effluent from Ennerdale Waste Water Treatment Works was out of specification in terms of the instream water quality objectives for the catchment. There was a slight improvement in terms of the E. coli concentrations. E. coli was the only determinant that was out of specification. The chemical water quality was tolerable for the quarter under review.

Monitoring point RS1 (Upstream of Ennerdale Works) was out of specification in terms of the instream water quality objectives. It has been on an upward trend bacteriologically although the contamination levels have been reasonably low. The chemical water quality was tolerable for the quarter under review.

A slight improvement was recorded in terms of the E. coli counts for sampling point RS2 (Downstream of Ennerdale Works) although it fell within the unacceptable class for the quarter under review. The water quality was tolerable in terms of the chemical index.

There was a significant improvement in terms of the bacteriological index for monitoring points RS3 (Downstream of Poortjie) and RS4 (Rietspruit Welgevonden). Ideal bacteriological and tolerable water quality was recorded at both sampling points for the quarter under review.

Monitoring points RS5, RS6 and RS7 fell within the unacceptable in terms of the bacteriological index. There was a significant increase in E. coli counts at RS5 while the chemical index showed tolerable water quality for the monitoring point. A significant improvement in terms of the E. coli concentrations was recorded at sampling points RS6 and RS7. Acceptable chemical water quality was recorded at monitoring points RS6 and RS7 for the quarter under review.

There was a slight improvement in

Discussion

A slight improvement in compliance was observed in this quarter's results. The Rietspruit catchment is still under stress from anthropogenic activities. The parameter of concern is E. coli. Overall, the catchment is subjected to bacteriological, chemical pollution and physical pollution from a variety of point and non-point sources.The general condition of the Rietspruit River system is improving. The deliberate vandalism of sewer infrastructure exacerbates the situation. Raw sewage, treated wastewater effluent, solid waste and grey water from informal settlements remain the most significant sources of pollution to the Rietspruit Catchment. Informal settlements lie outside of the formal planning process and usually lack or have low levels of basic services such as water and sanitation. The illegal discharge of highly contaminated effluent from wet industries and other sources also impacts negatively on the chemical water quality of the Rietspruit catchment.

Sources of Pollution

- Illegally occupied buildings and areas of urban decay, which contribute to overland pollution via storm water system;
- Sewage emanating from blocked manholes,
- Decaying or overloaded infrastructure,
- Illegal connections and discharges,
- Root growth ingress into sewage network;
- Mine leachate and other industria pollution.

- Illegal industrial effluent discharges, hydrocarbon contamination from petroleum depots, contaminated run-off from car wash and repair workshops.
- Grey water from informal settlements

Interventions

- JW continue to:
  - Implement sewer infrastructure upgrades.
  - Unblocking and clearing blocked manholes.
  - CCTV monitoring of sewer lines.
  - Bio remediation treatment of contaminated dams and impoundments

FOR INFORMATION

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