

Stream Water Chemistry Report Summary

Stream Name: Judges Creek

Water Chemistry Parameters	Observed Value	Standard
Total Suspended Solids	38.9 mg/L	< 11.2 mg/L
Alkalinity	237.50 mg/L	< 224.83 mg/L
Chloride	237.50 mg/L	
Total Phosphorus	0.05 mg/L	< 0.01 - 0.03 mg/L
Chlorophyll a Content	0.747 mg/L	
Temperature	14.19 C	< 25.15 C
pH	7.93	Between 6.5-8.5
Conductivity	0.346 spc	
Dissolved Oxygen	7.09 mg/L	> 6.0 mg/L
Total Organic Nitrogen	0.576 mg/l	< 1.1mg/L

The water chemistry at Judges Creek site was the most degraded of the six streams monitored. The total phosphorus values at this site were definitively above the recommended values of 0.01mg/L and 0.03mg/L. Considering that the reference site for this region was below the 0.01mg/L value it is very likely that is site is being impacted by nutrients from human mediated sources. The organic nitrogen value recorded was not, on average, above the provincial guidelines for freshwater systems, and was almost identical to reference conditions. This indicates that only phosphorus is being loaded onto this system, opposed to both nutrients. Increased phosphorus loading is often associated with livestock practices and it may be the source for this stream. As with the other streams measure the pH and dissolved oxygen content at this site are both within the recommended guidelines.

The remaining variables also indicate human activities in the region may be impacting the water of Judges Creek. The total suspended solids (TSS) value is of the most concern as it well above the recommended value (11.2mg/L) as well as the reference site value (Black Creek, TSS= 6.2mg/L). This may be related to activities on land which are increasing erosion rates or potentially the cattle which are able to drink at this stream. The chlorophyll at this site is also relatively high when compared to the reference site value (0.343 mg/L). This possibly due to the elevated phosphorus conditions as this site, however stream morphological features could also play an important role. As with many of the other sites monitored the alkalinity is above recommended conditions. This, again, is likely due to a stronger connection to ground water rich in CaCO₃, the chemical monitored to gauge alkalinity. Overall the water chemistry at this site indicates this stream is the most impacted of the six streams monitored.

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