BF 01440 Local Road Over Battle River
Hydrotechnical Summary

Channel Capacity :

S = 0.0015 (sinuosity = 1.8)
B = 20 m, h = 3.0 m, T_h = 30 m
Use AT equation

At Bank Height : Y = 3.0 m, V = 1.9 m/s, Q = 150 cms
At Channel Capacity : Y = 4.0 m, V = 2.4 m/s, Q = 250 cms

Historical Highwater Data :

The HWM shown on DD261 for this site is Y = 3.6m (EL. 943', referenced as largest in last 50 years). A bridge washed out at this site in 1900, and a HWM noted in 1912 was for Y = 3.4m. The highest HW for BF01340 d/s was in 1948 with water over the deck and well over bank, and also in 1974 with water just over bank. HW has been reported at BF08521 d/s in 1974 and 1982, with a washout in 1948. At BF00349, an ice run was observed in 1917 and a spring washout was recorded in 1920.

There are no WSC gauges between Samson Lake and Driedmeat Lake with records of large runoff events (largest is Q = 50cms in April 1985 at gauge 05FA021 (DA= 2800km^2, 1983 – 1985)). WSC Gauge 05FA001 located u/s of Samson Lake recorded a large event in 1990, but it does not appear to have been as significant d/s of the lake. Gauge 05FC001 d/s of Driedmeat Lake reports 1974 as the largest event (Q = 240cms), much of which entered d/s of this site from Pipestone Ck (Q = 100cms).

Basin Runoff Potential :

Gross DA = 2750km^2. Routing analysis of Samson Lake for the summary at BF01493 (DA = 2550km^2) suggests Q_{1990} = 160cms and $Q_{d = 40}$ = 220cms.

Conclusion :

The channel capacity estimate is consistent with historic observations.

Recommended parameters : Y = 4.0 m, V = 2.4 m/s, Q = 250 cms.