Nechako River turbidity June-July 2020 **9 July 2020**

There is a turbidity sensor in the Nechako River at Vanderhoof which was installed as part of the Nechako White Sturgeon Recovery Initiative. The sensor is maintained by Northwest Hydraulic Consultants.

Figure 1 below shows discharge (m^3/s) on the left vertical axis: discharge in the Nechako River at Cheslatta Falls (green line), discharge of the Nautley River (light blue line) and discharge in the Nechako River at Vanderhoof (orange line). In Figure 1 turbidity (FTU, right axis) in the Nechako River at Vanderhoof is the dark blue line.

The data in Figure 1 below clearly indicates that discharge in the Nechako River at Vanderhoof increased starting on 2 July, at the same time that a large precipitation event was observed in that area. Discharge in the Nautley River and in the Nechako River at Cheslatta Falls did not increase dramatically suggesting that the upstream areas did not receive as much precipitation, or that the rain water was stored in the lakes of those watersheds and is discharging into the river more slowly.

The trend of turbidity in the Nechako River at Vanderhoof in July 2020 very closely matches the trend in observed discharge. This suggests that the increase in turbidity was driven by the rain event and by inputs from small tributaries in the area upstream. It is possible that a landslide event occurred in the Nechako River perfectly coincident with the rain event. However, this a less likely explanation given that turbidity did not rise to very high levels, and dropped off very quickly.

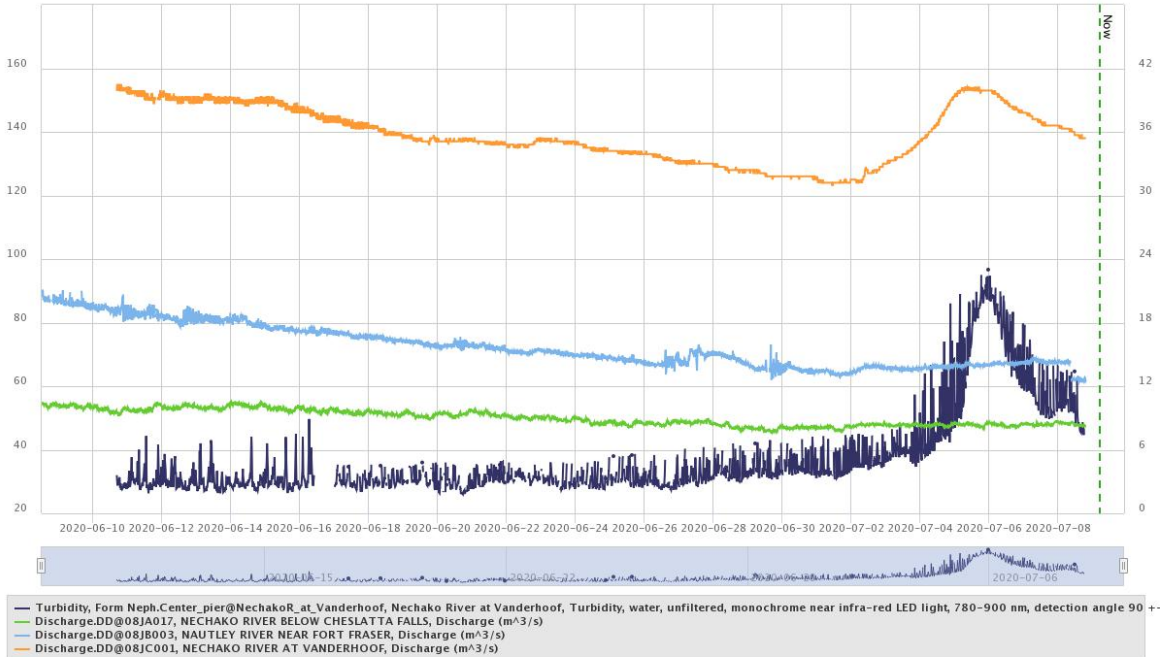

Figure 1 Discharge and turbidity in the Nechako River July 2020

Compiled by: Justus Benckhuysen, Rio Tinto

Previous investigations into turbidity in the Nechako River indicate that turbidity increases at the onset of spring and in response to an increase in discharge, including at the onset of the Summer Temperature Management Program (Figure 2, Figure 3). Turbidity drops off even if discharge remains high. Increases in turbidity not associated with spillway discharge are assumed to be a response to rainfall events and sediment inputs from tributaries.

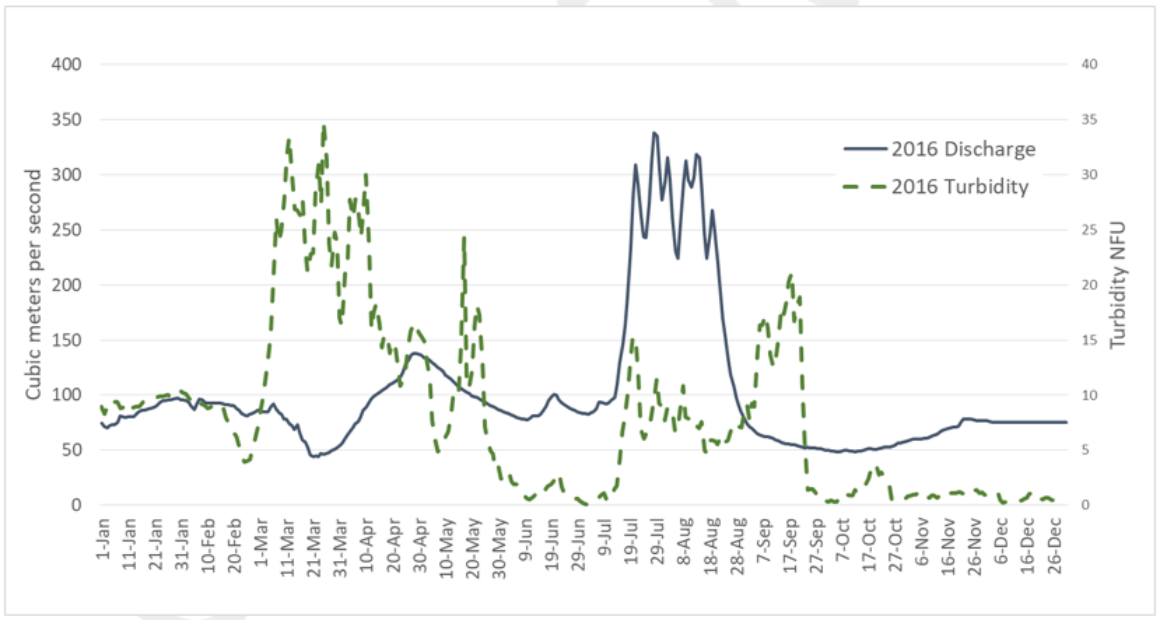

Figure 2 Discharge and Turbidity in the Nechako River in 2016

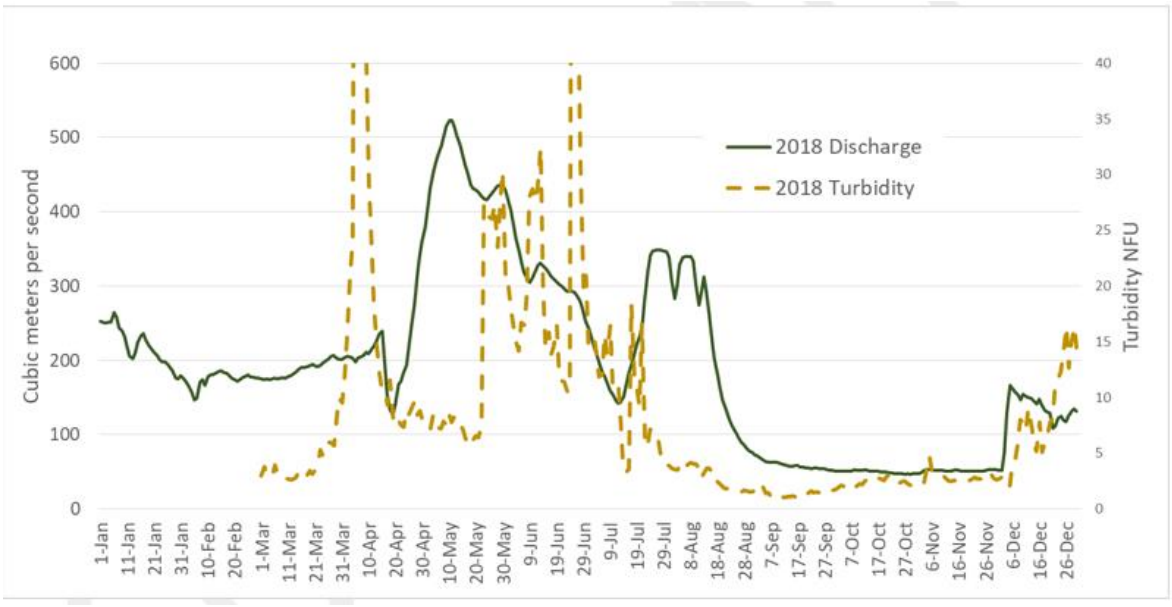

Figure 3 Discharge and turbidity in the Nechako River 2018

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