

MEMORANDUM FOR THE RECORD

**TITLE** - 20BCL01 MFR Elevated TDG high flows

**PROJECT** - Big Cliff Dam/Minto Fish Facility

**RESPONSE DATE** - 20 February 2020

**Description of the problem**

Between approximately 22 January and 30 January 2020, the elevation of Detroit reservoir increased from approximately 1,450 feet to 1,470 feet due to a high flow event and resulted in discharge below Big Cliff Dam greater than 8,000 cfs (Figures 1 & 2). Some flooding inside the intake and pump structure (IPS) at the Minto Fish Facility did occur. To accommodate high flows, discharge was routed through the spillway at Big Cliff Dam on 23 January 2020 and continued through 04 February 2020. Elevated total dissolved gas levels (TDG) during this time period were as high as 127% (Figures 1 & 2).

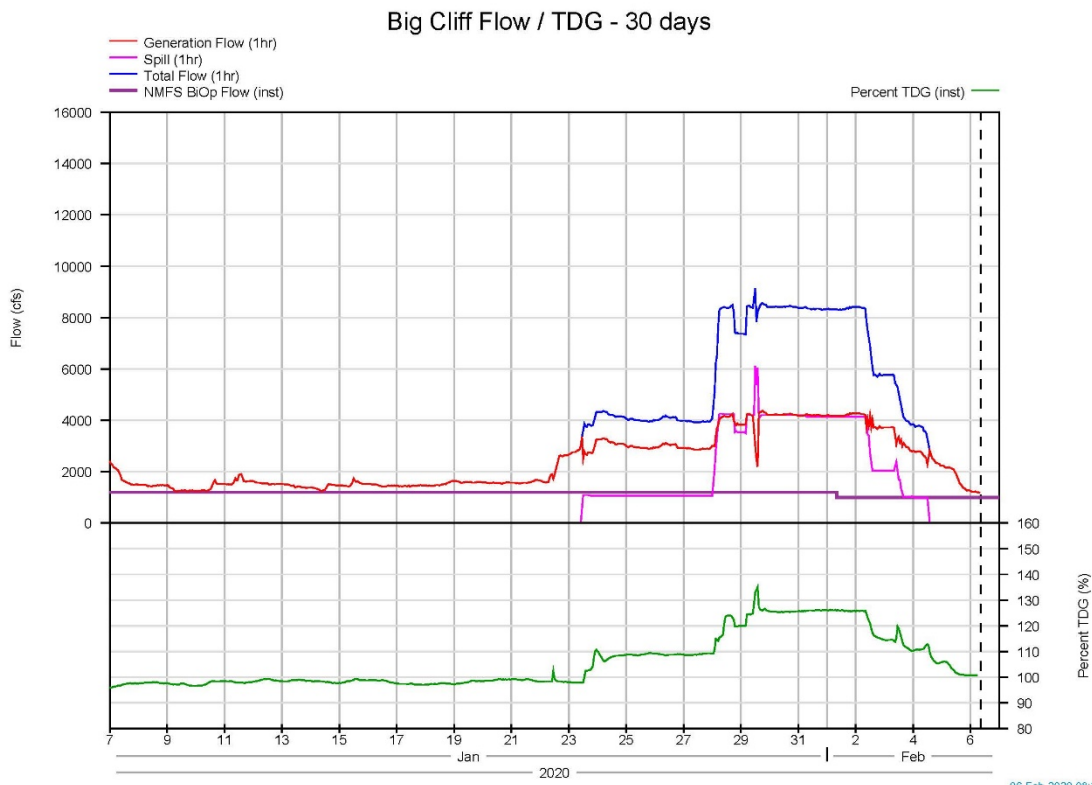


Figure 1. Discharge below Big Cliff Dam during a high flow event during late January and early February of 2020.

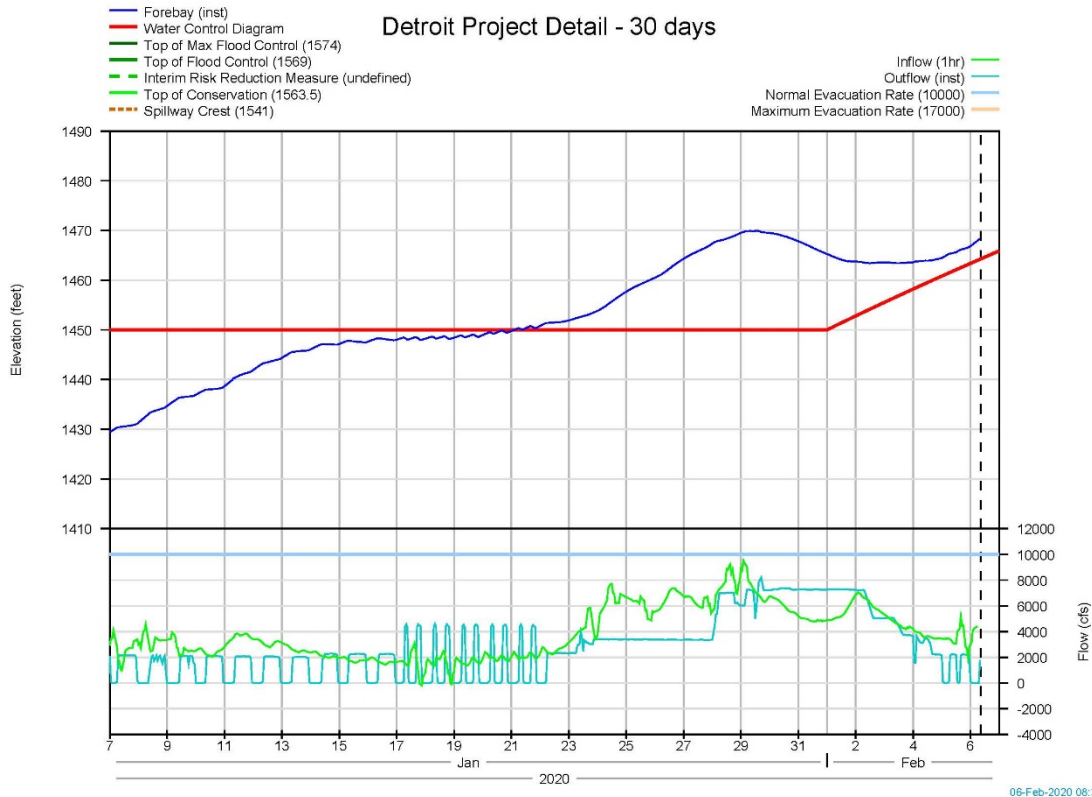


Figure 2. Reservoir levels and discharge at Detroit Dam during a high flow event during late January and early February of 2020.

**Type of outage/event**

Between approximately 22 January 2020 and 30 January Detroit reservoir increased from approximately 1,450 feet to 1,470 feet due to a high flow event and resulted in discharge below Big Cliff Dam greater than 8,000 cfs.

**Impact on facility operation**

Some flooding inside the IPS at the Minto Fish Facility did occur.

**Dates of impacts/event**

January 23-February 6, 2020

**Length of time of impact**

~ 15 days

**Expected impacts on fish**

Elevated TDG levels (peaked at 127%) were observed in the reach between Big Cliff Dam and the Minto Fish Facility. Levels of TDG were as high as 107% at the Minto Fish Facility. Elevated TDG levels can cause gas bubble disease and fish mortality.

**Comments from agencies**

No comments

**Final results**

Flows below Big Cliff decreased and TDG levels returned to normal levels (USGS site at Niagara, 101% as of February 5, 2020).

Please email or call with questions or concerns.

Thank you,

Chris Walker

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