DFO-NWB-01 (Updated Response Submitted August 6, 2024)
Comment Watercourse crossings have the potential to result in a harmful alteration, disruption, or destruction of fish habitat with associated footprint, infilling; by causing fish passage issues, and/or by causing hydraulic issues resulting in blocked debris movement, erosion, scour, and deposition. Fish passage must be maintained during certain biologically significant periods of the fish's life cycle when migration is important. This includes allowing upstream passage when certain fish species migrate to spawn in the spring or the fall and allowing young of the year fish to move from rearing areas to habitat where they can overwinter. Fish passage should be maintained for those fish that wish to pass at various times of year. DFO defines fish passage as suitable if fish are not delayed in their upstream migration for more than 3 consecutive days during a 1:10 year flow event. The document reports that "The fish-bearing crossings will be sized to keep maximum water velocities below 1.5 m/s for the average June flow such that they do not present a velocity barrier to migrating Arctic Grayling". Based on DFO's Swim Performance Online Tools (SPOT) (fishprotectiontools.ca), only 87.5% of 245 mm Arctic Grayling can swim against 1.5 m/s current for 1.6 m and that number falls to 50% for 7.3 m.
Recommendation Please provide context/rationale on why the 1.5 m/s velocity value for the average June flow was used to inform culvert design, as it appears high and high flows may impede fish passage.
B2Gold Nunavut Comment Response The only fish-bearing watercourse crossing is 'C2", which is Rascal Stream West. A twin oblong (embedded) culvert design was installed at the Rascal Stream West crossing in 2023. Work was completed under an approval (Letter of Advice, dated July 15, 2022) from DFO who was engaged throughout the design of the crossing. Fish passage was considered in the design of culvert hydraulics.