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**Sommaire :** Rigorous evaluation of GHG emissions for large hydroelectric reservoirs requires the collection and analysis of many samples in relatively short time periods. Because of logistical constraints, this is not often possible by using the conventional technique of floating chambers and boats followed by in situ GC analysis. To significantly increase the number of sites and analysis for large reservoirs, especially those located in remote areas without local facilities, Hydro- Québec is adapting, in collaboration with University of Montreal, a technique using a hydroplane equipped with floating chambers for samples collection with on site analysis with an automated NDIR instrument. This paper presents the results of this technique experimented on large remote hydroelectric reservoirs and natural lakes.