
# Cable Arm Environmental Clamshell

Conventional dredging technologies, both mechanical (open clamshell bucket, excavators, etc.) and hydraulic (e.g. suction pumps), are still commonly used in the Great Lakes. These technologies are now dated, and can no longer remove contaminated sediments adequately in ports and harbours throughout the world.

In April 1991, an aggregate Cable Arm Clamshell was used in Hamilton Harbour, Ontario, Canada to supply contaminated sediment for the demonstration of a contaminated sediment treatment technology. This project formed the basis for a more detailed evaluation and assessment of an environmentally sensitive version of the Cable Arm Clamshell.

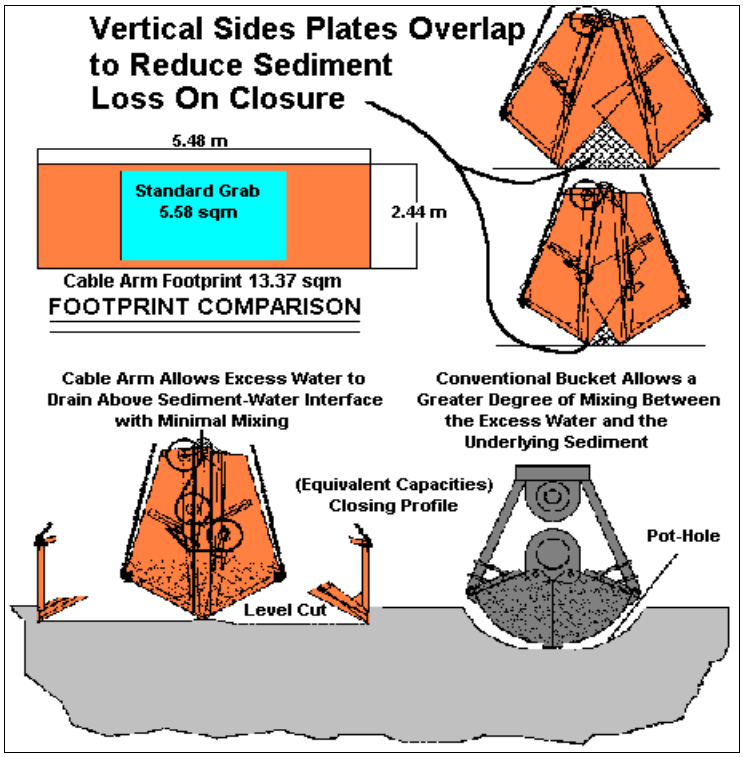
In June 1992, Cable Arm (Canada)Inc. demonstrated in Toronto Harbour a specially developed environmental bucket to meet demonstration requirements of the Remediation Technologies Program (RTP) of Environment Canada's Great Lakes 2000 Cleanup Fund.


**Cable Arm Environmental Clamshell used during the 1993 Pickering NGS project**

This partnership between government and industry marked the commencement of an evaluation and testing program which culminated in the first successful commercialization of the environmental bucket in Pickering in 1993. Through the 1992 demonstrations in Toronto and Hamilton Harbours, the RTP was able to provide evidence that an environmentally friendly yet efficient version of the Cable Arm Clamshell could perform under rigorous field conditions and be commercially viable.

Advantages to the Cable Arm Environmental Clamshell when compared with conventional mechanical dredges are numerous :

- Replacement of grab arms with cables decreasing total weight of the bucket which increases the potential for a faster cycle time and increases payload capacity
- Addition of vertical side plates to reduce sediment loss during bucket closure
- Increased footprint allowing more precise sediment removal
- Flatter sediment cut reducing the potential for sediment re-suspension caused by potholes
- Potential for sediment loss reduced by adding a more effective rubber seal and a closure sensor
- Addition of an air-operated venting system to allow excess water drainage at the sediment-water interface
- Addition of a positioning system for more accurate sediment removal.




**Comparison between the Cable Arm Environmental Clamshell and conventional technologies**

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