

The 8th International Ice Drill Symposium



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The BEAMISH hot water drill

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During the 2018-19 Antarctic field season, the British Antarctic Survey (BAS) BEAMISH project drilled three holes through the Rutford Ice Stream, West Antarctica, accessing and instrumenting its bed through 2152m of ice, the deepest hot water drilled access holes yet created. This was the culmination of almost 20 years of preparation and planning and following on from unsuccessful drilling attempts during an earlier project in 2004-05. Lessons learnt from this and the Subglacial Lake Ellsworth project drilling, informed the design and development of the BEAMISH hot water drill. The system was built on extensive experience with the BAS ice shelf hot water drill and utilises many identical components and processes. New systems and processes were developed for BEAMISH to aid critical aspects of deep access drilling, including extensive water recovery techniques and monitoring capabilities. The modular design of the BEAMISH drill offers many benefits in its adaptability, redundancy and minimal logistic foot print, which can accommodate the modifications needed for future deep, clean access hole creation.

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