British Columbia outfall

Case:	British Columbia Outfall
PE 100+ member:	Borealis AG
Author:	Steve Sandstrum
Period:	From April, 2015 to present
Country/Region:	British Columbia, Canada
Network owner:	Capital Regional District (CRD)
Engineer/Installer:	Harbor Resources Partners
Pipe producer:	Agru America

The largest HDPE pressure pipe ever used in North America will soon become operational as part of a new $775 million tertiary wastewater treatment plant undertaken to protect local waterways around Esquimalt on Vancouver Island, British Columbia. The 7.5 foot diameter (2250 mm) HDPE pipe produced by Agru America using BorSafe HE3490-LS will serve as an ocean outfall for treated wastewater from this community of 413,000 people. The outfall extends 1.2 miles (~2 km) from shore and is sunk to a depth of 197 feet (60 meters) and was originally specified for steel pipe. However, concerns regarding corrosion and expensive maintenance led project engineers to select HDPE pipe.

The project was realized with PE 100 used in a 2250 mm SDR 26 and 21 pipe.

Advantages to use PE 100 were the flexibility and toughness required for the float-and-sink installation method. Moreover, durability of the butt fusion joined HDPE assures system integrity during installation and seismic or tidal events.

The switch from steel pipe to PE100 was predicated on production of specialized fittings to connect the HDPE pipe to steel pipe sections, which was seen as a disadvantage.

Other aspects for the use of PE 100 was the ease of installation combined with corrosion resistance equates to lower life cycle cost compared to alternative materials.

High reliability ensures consistent flow from the outfall pipe designed to safely discharge tertiary-treated effluent in the ocean. The corrosion resistance of HDPE pipe in saltwater also ensures a long service life, which is more sustainable and offers a lower carbon footprint. Float and sink method of installation resulted in less disruption of local marine traffic.

Outfall pipeline