The InvisiHead technology, how it deliver good quality water to the user

Elmosa Seawater Intake and Outfall systems designs and configures the 3-component intake or outfall system – InvisiHead, pipeline, and the NatSep or outfall syphon,

The Elmosa 3-cmponent intake system is natural and smart. It utilizes natural processes to operate and maintain the intake or outfall process. The InvisiHead is the only technology to detect and recognise site conditions and application requirements. It does not admit marine life, sediments, or debris. The flow streamlines taking off from the seafloor and flowing toward the InvisiHead start at a negligibly low velocity- <0.0020 m/s. Too low to disturb silt down to 62 um. That silt particle weighs 0.11ug with a terminal velocity of 2.3 mm/s. Fish eggs and larvae (20ug) or about 200 times heavier than silt will not be disturbed or carried over not to mention the much heavier and coarser material like sand, juvenal and adult fish, seaweed, debris and trash. If any debris or fish travel as part of the water moving into the IH, they will go straight out of the system through the opposite end due to the effects of local marine currents moving in a velocity much higher than the IH exit velocity – 0.11-0.12m/s, that is the downstream end of the IH.
The velocity of the flow moving toward the InvisiHead still remains very low at 0.03 m/s even as close as 1.0 m to the InvisiHead entrance where the velocity rises to 0.09 m/s. This velocity regime not only meets the US EPA Clean Water Act 316*(b)* rule but also exceeds by 40%. The rule calls for a max entrance velocity of 0.15 m/s while the IH's is 0.09 m/s.

The NatSep on the other hand is made as a natural final line of defence designed to separate the cut-line of whatever sediment gets through the IH system designated by the client, i,e. fine sand and larger. The NatSep is free of screening and support systems including bar screens, rakes stationary or revolving, drums and accessories, automation, compressors and airburst and purging systems, backwash pumps, trash troughs, etc. The NatSep provides two-100% capacity bays to provide isolation flexibility during cleaning if ever needed to maintain uninterrupted operation. Depending on the sediment content in the flow, but cleaning frequency is usually not warranted more than once a year. The flow reaching the pump intake is clean, free of the cut-line sediment, and larger.

The Elmosa Flow Envelope principle is applied when designing the flow delivery system (the seawater intake pipeline) to remain clean at all times with no settlement of sediment or growth of marine life inside the pipes. The EVE principle maintains an environment for no sediment settlement or marine growth inside the pipe at all times of EVE flow conditions.

The Elmosa system is the best technology available (BTA or BAT) as per the US EPA designation that is confirmed by the Australian EPA, and the Canadian Department of Fisheries and Oceans (DFO).

The InvisiHead intake head and outfall systems require no spare parts during their operational life.