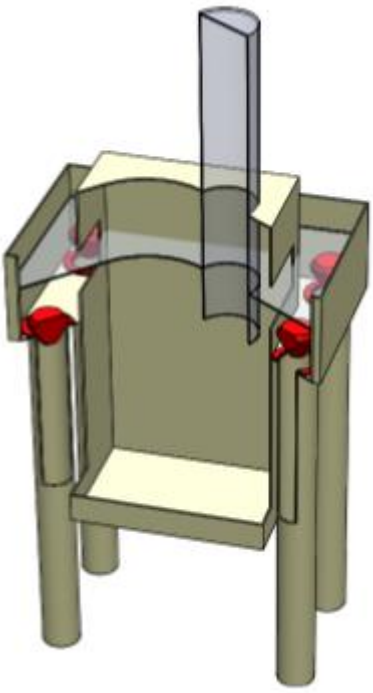
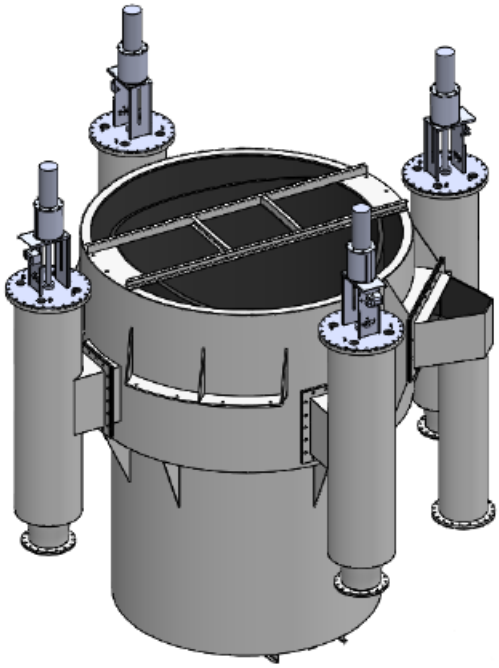
E-PUB-02-0006
Version 01, 2019-06-25

This case study is for a plant in Namibia. The original unpressurised splitter box was not able to evenly split the streams to multiple screens. The total design flow rate is approximately 5,500 m^3/h.

Current	Proposal
	

Application

Two diameter 800mm pipes feed this distribution box with four outlets which lead to four screens. Either of the inlets may feed the box and any one of the four outlets may be closed.

The Problem

Severe maldistribution at the outlets was observed in the field; eDART was tasked with redesigning the splitter box to correct this effect.

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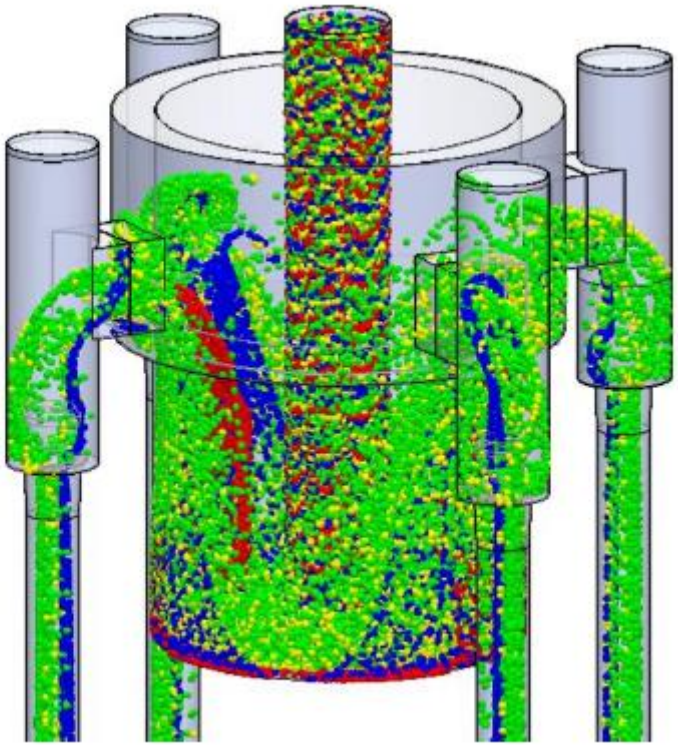
The Solution

A number of solutions were considered. It was apparent that for the most symmetric solution yielded the most satisfactory results. In depth analysis using particle studies led to the realisation that the two inlets needed to be combined before entering the box.



Conclusion

eDART has successfully used Computational Fluid Dynamics (CFD) and particle studies in the design of many splitter and distribution boxes. This application is not the largest we have analysed.

An optimal design was achieved because multiple configurations could easily be analysed and the merits and faults of each could be simulated before any steel was cut.