

## Demineralised Water and Condensate Treatment Plant

SABIC, Saudi Kayan Petrochemicals, Saudi Arabia, 2008-2018

### How we created value

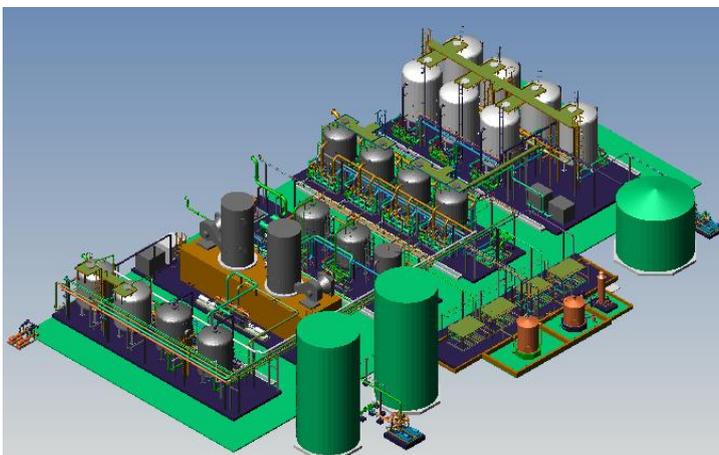
- Highest water efficiency
- 3D model imported directly into clients site model
- Local fabrication of pressure vessels
- Modular design minimising construction costs & time

#### Client

SABIC, Jubail,  
Saudi Arabia



Following a competitive tender and detailed technical evaluation, Fluor Corporation and Saudi Kayan placed a Contract with Ovivo to design and supply the complete Demineralisation and Suspect Condensate treatment plants for the Utilities and Offsites package, serving the Saudi Kayan Petrochemical Complex being built in Jubail, Saudi Arabia. Following this original project success Saudi Kayan expanded their demineralization capacity in 2017 from 2 x 400m<sup>3</sup>/h trains by adding a third 400m<sup>3</sup>/h rated train which was engineered and delivered by Ovivo ahead of time and fully integrated within the existing plant.



The demineralisation plant has a capacity of 2 x 400m<sup>3</sup>/h and consists of packed bed cation exchange, degasser anion exchange and mixed bed polishing. On the same plot 1425m<sup>3</sup>/h of suspect condensate are treated using activated carbon and mixed bed polishers.

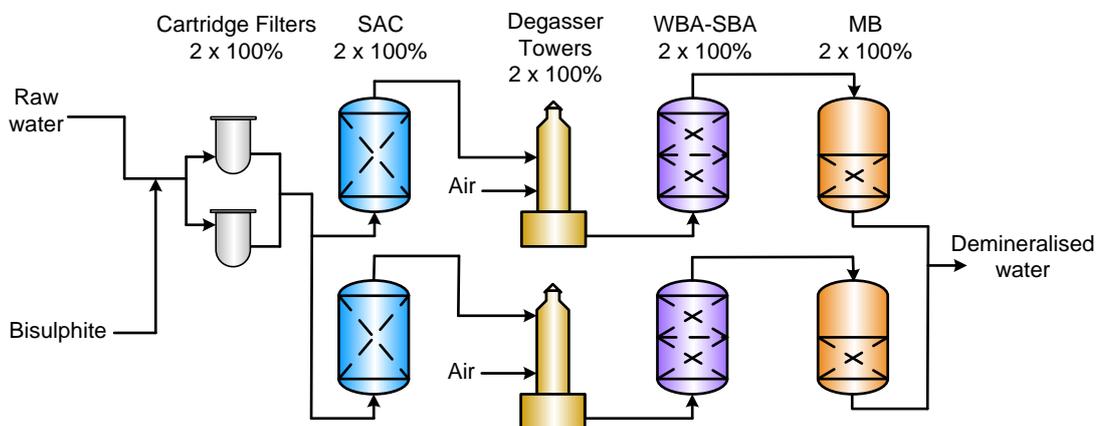
#### Special Features:

- Countercurrent packed bed process offering high efficiency water usage.
- Use of coconut shell carbon media for superior TOC removal.
- Backwash water recovery filtration system included to maximize water efficiency.

## Plant Capacity:

Plant section	Capacity (m <sup>3</sup> /hr)	Equipment	Quantity (Extension 2017)	Vessel diameter
Demineralisation Plant	3 x 400	Cartridge Filters	2	1.0 m
		Packed Bed Cation	2 (+1)	3.2 m
		Degasser	2 (+1)	3.2 m
		Packed Bed Anion	2 (+1)	3.0 m
		Mixed Bed Polishers	2 (+1)	2.8 m
Condensate Treatment	2 x 1,425	GAC Filters	7	3.8 m
		Mixed Bed Polishers	4	3.6 m

## Flowsheet: Demineralisation Plant



## Treated Water Specification

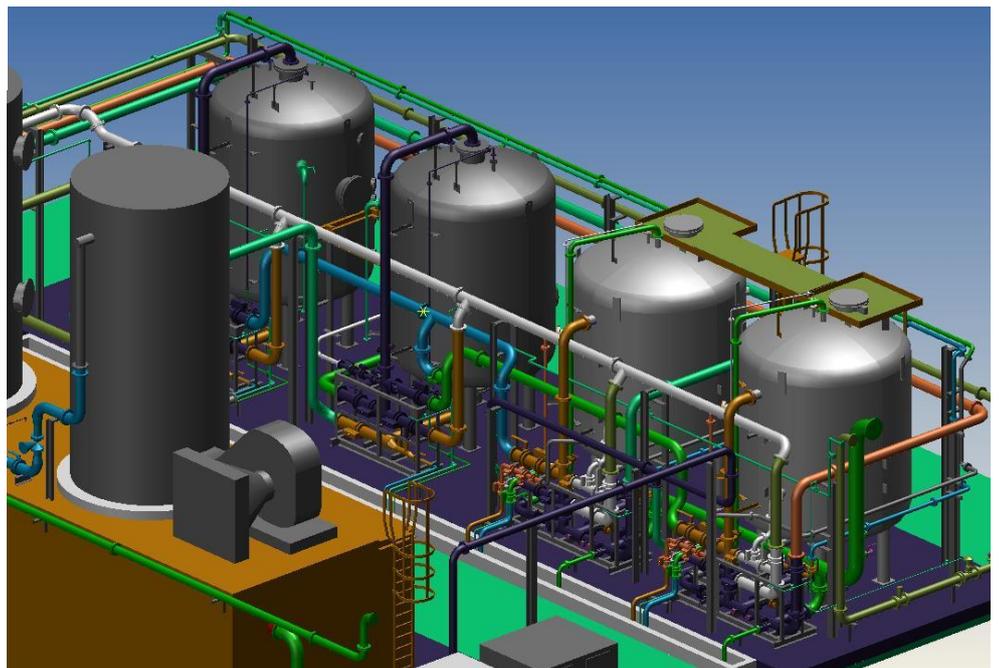
- Conductivity < 0.2  $\mu$ S/cm
- Hardness < 0.01 mg/l
- Copper < 0.005 mg/l
- Iron < 0.01 mg/l
- Silica < 0.02mg/l
- TOC < 0.2 mg/l



Ovivo team with Saudi Kayan.  
Another successful partnership.

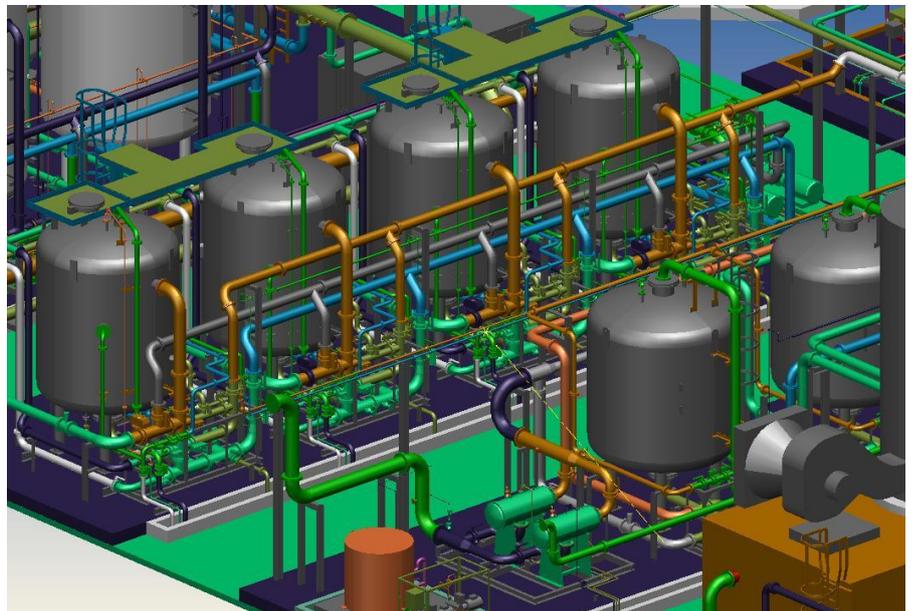


Ovivo Weak & Strong base  
Anion units with mixed bed  
Units in foreground





Ovivo Strong acid cation units with mixed bed Units in background



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