

Project Profile

Demineralized Water Treatment System supplied by Aquatech supports high-quality boiler makeup

The Facility

Sadara Chemical in Saudi Arabia is a joint venture between The Dow Chemical Company, a world leader in science and technology, and Saudi Aramco, one of the world's leading energy suppliers. Located in Jubail, Saudi Arabia, Ras Tanura Integrated Project (RTIP), once completed, will be the largest petrochemical facility ever constructed in one phase. RTIP is a world-scale integrated chemical complex, built to produce more than 3 million tons per year of value-added chemical and plastics products:

- Amines
- Glycol Ethers
- Isocyanates
- Polyether Polyols
- Polyethylene
- Polyolefin Elastomers
- Propylene Glycol

Aquatech was selected by Dow Chemical to manufacture the ion exchange and condensate polishing systems essential to operations.

Project Overview

Two important drivers on this project were ease of installation and scheduling. Suppliers were tasked with manufacturing to a high specification while developing systems that were simple to install. Project milestones were critical as the multiple processing units were assembled on site.

Aquatech's Global Sourcing program provided the manufacturing muscle and flexibility required meeting the critical project timeframes.



Scope of Service

Construction work on the demineralized water treatment project has already started and is scheduled to be completed by early 2015. Production from the first units is expected to begin in the second half of 2015; all units are expected to be running by 2016. The fully integrated complex is planned to consist of 26 chemical manufacturing units.

Aquatech's treatment processes will supply demineralized water for high-quality boiler makeup and condensate polishing. Demineralization System consists of Activated Carbon Filters followed by UPCORE™ Cation Exchangers, UPCORE™ Anion Exchangers and Polishing Mixed Bed Exchangers. The system produces 4755 gpm of Demineralized water from Industrial water.

Condensate Polishing System consists of Activated Carbon Filters followed by Mixed Bed Polishers. The system treats Plant Return Condensate to produce 9355 gpm of Polished Condensate. Both systems also include dedicated Acid and Caustic Regeneration skids. A common Neutralization system including tanks and pump skid is provided to neutralize the regeneration wastewater prior to site outfall unit.

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Design Water Analysis

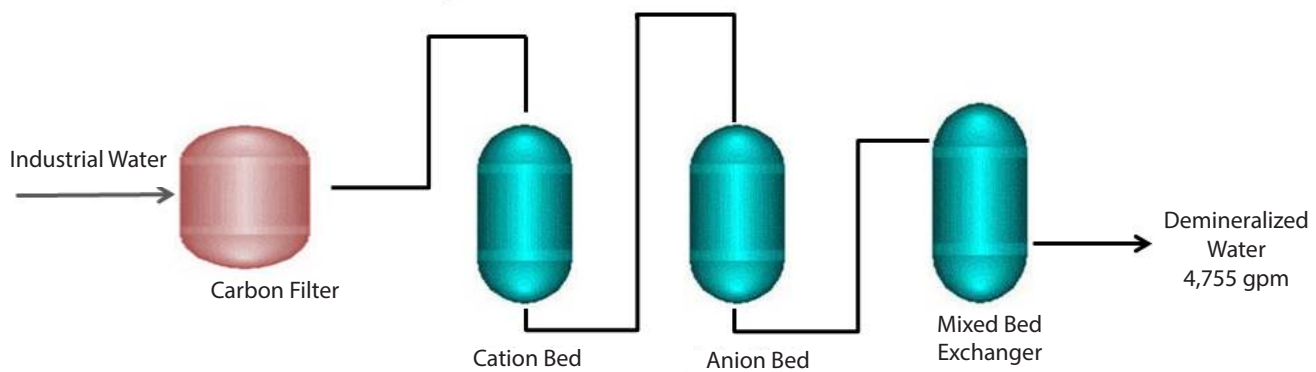
Parameter	Unit	Industrial Water Value	Return Condensate Value
Residual free chlorine	ppm	0.4-1.0	Not Reported
Turbidity	NTU	<1.0	<1.0
pH value at 25° C		6.5-9.0	8.8-9.2
Conductivity at 25°C	µS/cm	Not Reported	3-10
Organic Hydrocarbons/ Free Oil	mg/l	<1.0	Not Reported
Non-Volatile TOC	mg/l	Not Reported	0.2
Total Dissolved Solids	mg/l	<80	Not Reported
Total Suspended Solids	mg/l	<1	Not Reported
Total Hardness as CaCO ₃	mg/l	30-50	Not Detectable
Chloride	mg/l	<50	Not Reported
Sulphate	mg/l	<10	Not Reported
Silica	mg/l	<1.0	<0.02
Iron	mg/l	Combined total is <0.1 mg/l	<0.01
Copper	mg/l		
Sodium	mg/l	<35	<1.0

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Process Flow Diagram

Demineralization System



Condensate Polishing System

