



## FCT Optimizes Operations for Refineries

Oil and gas refinery managers are often finding themselves under the gun to reduce the environmental impact of their energy production while combating lost revenues caused by challenging economic conditions.

FCT Water is a specialty chemical and engineering company that offers custom high purity chemistry system solutions for influent, boilers and cooling systems, wastewater, and more. With our highly experienced staff, we provide consulting, custom chemistries, analytical services, instrument/sample panel upgrades, and remote monitoring/control over chemistry systems to help you maintain compliance and optimize your operations.

When working with a refinery for the first time, our first action is to complete a systems audit to determine the levels of operational efficiency. The audit includes an analysis of:

- Influent
- Boilers
- Steam letdown systems
- Condensate systems
- Cooling towers
- Heat exchangers
- Reboilers
- Wastewater systems
- Water balance
- Water reuse opportunities
- Environmental issues
- Safety and handling
- Training

### FCT Working Experience:

- Refinery chemistries for clients including Conoco, Amoco, Cenex, Husky, Sinclair, and Tesoro
- Utility chemistries for clients including Xcel, TXU, Reliant, Entergy, AEP, BHP, MidAmerica, Southwest Generation, Alpine Energy, and Basin Electric
- High purity chemistry systems for boilers, and cooling systems
- Automation and control of chemistry systems
- Refinery and utility environmental issues
  - Mercury capture
  - NOx, SO<sub>2</sub>, CO, and PM2.5 control chemistries, equipment requirements, and enhancement
- Wet and dry scrubbing systems
  - SO<sub>2</sub> removal enhancement chemistries
  - SNCR and SCR NOx reduction systems, including urea, anhydrous and aqua ammonia-based chemistries
  - CO catalyst systems
- Mercury removal system, including halogen-based oxidation
- PAC adsorption chemistries



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### REFINERY

#### Design Experience:

- Water systems
  - Water sourcing
  - Pipelines
  - Tankage
  - Automation
  - Pretreatment
- Filtration, clarification and membrane technology
- CDI, EDI, and resin-based systems
  - Complete new water plan design
  - Existing system upgrades
  - System instrumentation upgrades, automation, and remote monitoring
- Multiple pressure steam condensate systems and custom corrosion control programs
- Gas turbines
  - Gas turbine failure, HRSG, and simple cycle systems
  - Inspections
  - Troubleshooting
  - On- and off-line water washing
  - Sodium/sulfur control chemistries
  - Oxygen scavenging and control condensate polishing in sodium, hydrogen and ammonia cycles
  - Chemistry system instrumentation upgrades, automation and remote monitoring
- Heat rejection systems
  - Air and water cooling condensers
  - Heat exchangers
  - Metallurgies and construction materials
  - High cycles chemistries and controls
  - Gray water re-use chemistries
  - Process contamination chemistries
  - Control and leak detection
- ZLD and wastewater discharge minimization
- Automation and control systems for NPDES regulated outfalls
- Complete analysis, laboratory capabilities work, water chemistry, metallurgical analysis, wastewater characterization and custom chemistries to control metals, organics, sulfur compounds, TSS, COD, and BOD in discharge waters

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**FCT** Water Treatment