

# STORM WATER CLARIFICATION FOR COOLING TOWER FEED WATER



# IXOM

## Key Facts

**Client:** CS Energy

**Site:** Kogan Creek Power Station

**Location:** Brigalow, QLD

**Purpose:** Remove suspended solids/turbidity from harvested storm water for use as cooling tower feed water, thereby reducing bore water consumption

**Technology:** Coagulation, flocculation, lamella clarification

**Supporting Infrastructure Supplied by Ixom:**

- Feed flow control
- Turbidity monitoring
- Lamella clarifier with flocculation tank, sludge scraper and access platform
- MCC, PLC and SCADA

**Capacity:** 75 m<sup>3</sup>/h feed flow rate

**Feed Water Source:** Storm water collected from site, contaminated with clay/sediments, turbidity > 300 NTU

**Start Up:** November 2016

## Background

Ixom Water Treatment Systems (WTS) have successfully completed the delivery, commissioning and handover of a storm water clarifier for CS Energy's (CSE) Kogan Creek power station near Chinchilla, QLD.

Prior to the project implementation, CSE was utilising bore water for the cooling tower make-up. Due to the bore being located over 25km from site and CSE having a limited extraction licence, CSE engaged Ixom to solve their challenge by providing an alternate supply of water.

## The Ixom Solution

Ixom WTS worked closely with CSE to understand their challenge and assist in finding the most suitable solution for their application. It was determined that a clarifier could be utilised to treat storm water collected from site to source collected water rather than the previous bore for the cooling tower make-up.



## Ixom Water Treatment Systems

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## Customised Solution

Ixom WTS conducted laboratory tests on the raw water to identify the treatment chemistry required to achieve the desired treated water quality of < 10 NTU and determine the necessary design parameters for the clarifier.

Ixom WTS designed, supplied and installed the clarifier system that included:

- A skid mounted system including: the clarified water pump discharge pump, sludge pump, valves and instrumentation
- Coagulant dosing into the raw water, upstream of a high shear mixer
- Flocculant activation and dosing
- Gently mixed floc formation tank
- Lamella clarifier
- Treated water break tank
- Turbidity monitoring
- Non-conformance diversion system
- Intermittent sludge discharge

## Result

The system provides consistent, quality water to the site cooling tower, with the plant meeting its design requirements:

- 75 m<sup>3</sup>/h feed flow
- Turbidity reduced to < 10 NTU
- Recovery of over 90%



## What's your challenge?

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Revision 1 released 6/07/2021. Uncontrolled if printed. Access latest version at [www.ixomwatercare.com/ixomwts-case-studies](http://www.ixomwatercare.com/ixomwts-case-studies).

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