

## CASE STUDY

### AGF: AUTONOMOUS GRAVITY SAND FILTER

### SIDE STREAM FILTRATION, COOLING WATER, COEGA



**Client:** Air Products South Africa  
**Industry:** Oil & Gas  
**Region:** Eastern Cape, South Africa  
**Product:** AGF21S, 35m<sup>3</sup>/h @ 10m/h  
**Installation Date:** 2014

#### Challenge

- Air Products South Africa manufactures a wide variety of industrial and specialty gas products for the Southern African region.
- Large, industrial cooling water units form part of their manufacturing plants.
- Atmospheric pollutants and other solids contaminate the cooling water leading to substantial losses in efficiency.
- Overcoming the inefficiencies requires increased energy inputs and chemicals consumption.

#### Application

- Final Filtration / **Side Stream filtration of cooling water.**

#### Solution

- The inherent simplicity, high efficiency and low operating costs of the Autonomous Gravity Sand Filters (AGF) makes it the ideal filter to install on side-stream filtration applications. Removal of the suspended solids with a side stream filter brings immediate and lasting economic benefits (reduction in energy consumption and chemicals usage).
- Easy Installation:
  - Minimum civil works on site.
  - Fabrication under tightly controlled factory conditions.

- High efficiency:
  - AGF filters cycle autonomously between filtration and backwash cycles resulting in regular, thorough cleaning of the filter bed.
- Low Maintenance Costs:
  - No peripheral equipment (backwash pumps, controllers, compressors) required.
  - Manpower limited to period oversight functions.
- Easy Maintenance.
  - Maintaining the integrity of the mechanical structure and periodic replacement of nozzles and sand.
- Low Energy Consumption:
  - Complete Autonomous Function.
- High reliability:
  - No moving or rotating components.
  - No peripheral components.
- 1 x **AGF21S Autonomous Gravity Sand Filter** was installed, processing 35m<sup>3</sup>/h at an average filtration velocity of 10m/h.

#### Results

- Since commissioning in 2014 the AGF filter has provided efficient filtration at Coega, reducing the suspended solids load in the cooling water which in turn resulted in lower energy costs and lower chemicals costs.
- Maintenance costs have been kept to a minimum.