

Annual Report



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# Water Sustainability: Best Practices

PetroSA

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# Water Sustainability : Best Practice

- Prevention of direct losses/ leaks (steam/ water leaks)
  - Steam traps discharging to grade / headers ( partial implementation)
  - Cooling water (from pump seals) routed to drain (recycled back to system)
  - Flare seals overflow to DOW (recycled back to system)
  - Leaks in steam and condensate system in general (fix leaks - ongoing)
  - Isolation of cooling cells when motors are not running at the cooling water towers – Avoid excess water splashing when fan trips
- Wherever possible, water consumption will be reduced (lower steam demand, lower cooling water)
- Cooling Water Towers
  - Cooling tower (Airsep) blowdown is the makeup for the next cooling tower circuit (utilities) which blows down as make up to the main cooling water tower

# Water Sustainability : Best Practice

- Installation of side stream filters on the cooling water towers to improve water quality and reduce makeup (for blowdown associated with suspended solids)
- Maintaining cycles of concentration as high as practically possible to reduce fresh make up water.
- Boilers- minimise use of continuous blowdowns. Spare boiler is not kept hot anymore (waste steam)
- Recycling initiatives (wherever it is possible).
  - Treated water at the water treatment plant (API/DAF) is recycled to the reaction treatment plant (digestors to reduce the COD/Benzene).
  - Storm water dams are recycled via reaction water system
  - The combined stream is used for cooling water makeup

# Water Sustainability :

- Reformer reaction water is recycled back to the Demin plant as boiler feed water makeup
- Excess steam condensed, recovered as condensate for re-use
- Opportunities-
  - Hartenbos sewerage effluent treatment plant (RO) upgraded to raw water quality for use at the GTL Refinery PetroSA
  - PetroSA has 33.3% share in demin water plant in Voorbaai (15ML per day) to provide additional water in the event of shortage