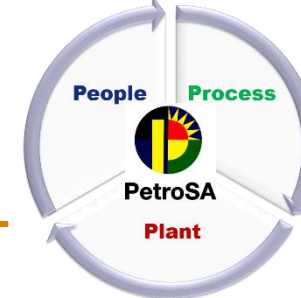




PetroSA

DISASTER DRAINAGE MECHANISM

SAPIA PRESENTATION



Historical Data

Extract from the Research

The torrential rains of August 2006 in the southern Cape of South Africa were the most intense observed in the region. Here we use the longest-available daily rainfall series at George (from 1941 to 2006), in the vicinity of which the most destructive floods were observed, together with an extreme value model to estimate the return period of such an extreme event. According to this model, the greatest annual maximum daily rainfall of 230 mm, observed at the town on 1 August 2006, has a return period of 1222 years, whereas the second-largest observed annual maximum daily rainfall (132 mm in September 1964) has a return period of 23 years. This shows that the August 2006 extreme rainfall at George can be considered as a particularly rare event.

Last Year Data

Extract George Herald November 2022

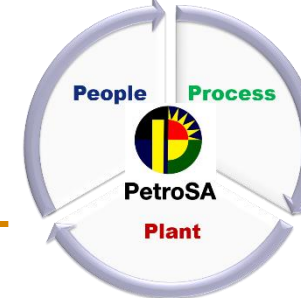
The George Weather Office says up until 08:00 this morning, 22 November, 114mm was measured at Witfontein, 78mm at George Airport, 98mm at Wilderness Heights, 42mm in Knysna, 32mm in Plettenberg Bay and 92mm in Tsitsikamma.

PetroSA Recorded Events

28 July 2012 – 131mm Rainfall

24 January 2020 – 156mm Rainfall

FLOOD PREVENTION PLAN



Design

- 2xStorm Dams Capacity 24400m³
- 2xOily Water Ponds – 24600m³
- 2xDaily Oily Water Treatment Ponds – 7400m³
- Design Rainfall – 450 000 m³ in 24 hours.
- Bund walls
- Underground piping to allow build up
- Storm water channels further from operating Plant



Maintenance

- Maintenance of oily sumps inside units
- Pumping capabilities
- Use vacuum truck and high pressure systems to remove blockages
- Effective oil skimming system
- Storm water drains clean-up and maintenance



Operation

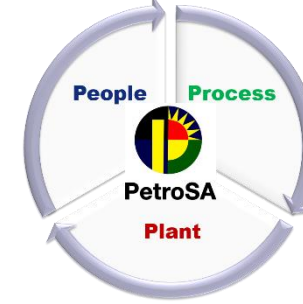
- Keep Storms empty by recycling water to the plant
- Daily oil skimming and discharge to sea – Discharge Permit
- Oil recycling as slop for reprocessing
- Spill Management – Use absorbents
- Only 1 Storm Dam in Operation to collect first flash water



Emergency

- Clean rainy water can be released into the estuary – this is after the first flash water has been contained in another dam. This is to prevent flooding and possible overflow of contaminated water
- Emergency Sluice gates in the surge ponds are opened to receive all oily wash water from the units, when full, emergency continuous discharge of effluent to sea – permit conditions followed

CLOSING REMARKS



- ❖ Design is adequate to prevent flooding of 150mm daily rainfall condition
- ❖ Poor maintenance has been the major route cause of environmental incidents
- ❖ Uncontrolled dumping of oil creates operational challenges
- ❖ Emergency plans are strictly for emergencies not cover for maintenance efficiencies or routine activities



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**Thank
You**