

ABSTRACT

The eThekweni Municipality is facing two major challenges in controlling odorous emissions by various industries in the South Durban Basin; firstly, getting industry to manage their onsite odorous emissions and, secondly regulating these odorous emissions. This study focused on the Jacobs's Industrial Complex (JIC) which comprises various industries releasing air emissions which impact on the local air quality. The impact of these emissions is supported by the number of odour complaints reported to the eThekweni Environmental Health Department by the public.

Cleaner production (CP) is an integrated approach aimed at continuously reducing environmental impacts of processes, products and services through applying preventive approaches rather than controlling and managing pollution once it has been created. This dissertation has assessed the application of CP as a concept to prevent and reduce emissions of odours by industries in the JIC that are impacting on the environment and neighbouring communities. Three CP case studies are analysed to demonstrate the applicability of the approach. These are a CP project for drum reprocessing company based in the South Durban Basin and two waste minimisation clubs which operated from 1998 to 2000 in Durban.

The key findings, outcomes, experiences and lessons learnt from these case studies underpin the recommendation of an approach that can be applied by eThekweni Municipality to incorporate CP in the scheduled trade (ST) permitting of odour producing industries. This research has applied a multi-case study design implying both qualitative and quantitative approaches. A qualitative approach was used in the detailed analyses of case studies whilst the quantitative one was applied in the graphical analyses of the odour complaints statistics for the JIC.

The study concludes by drawing two major recommendations from the lessons learnt.

Recommendation 1: The general CP strategy that can be applied by eThekweni Municipality in regulating, promoting, enforcing, monitoring and evaluating application of CP practices among stakeholders. The recommended objectives for the general strategy include:

- Enforcement of uniform regulatory standards.
- Development of a policy or guidelines.
- Effective compliance monitoring and enforcement.

- Develop a local Cleaner Production Centre (LCPC).
- Ensure co-operative governance.
- Provide adequate financial resources.
- Monitoring and evaluation.

Recommendation 2: Strategy for incorporating CP in the ST permitting of odour producing industries. It is recommended that the ST permit holder for an odour producing industry comply with the following:

- Prioritisation of odour like the other priority pollutants.
- Industry to perform an audit to map odour emitting areas.
- Permit holder to develop a CP based odour management plan.
- Investigate possible CP projects that can be undertaken to prevent and mitigate odour emissions.
- Incorporate an odour management plan into a 5 year environmental improvement plan.
- Develop and appropriately manage an odour complaints management system.
- Set odour management performance indicators and baselines for targets and reporting.
- The permit holder should include odour management performance including odour complaints management in the annual report.