Bakelite Annual Environmental Review 2023

Introduction: Permit condition 4.2.1 requires an annual report covering the previous year to include:

(a) a review of the results of the monitoring and assessment carried out in accordance with this permit against the relevant assumptions, parameters and results in the assessment of the impact of the emissions submitted with the application;

(b) where the operator's management system encompasses annual improvement targets, a summary report of the previous year's progress against such targets;

(c) the annual production /treatment data set out in schedule 5 table S5.2;

(d) the performance parameters set out in schedule 5 table S5.3 using the forms specified in table S5.4 of that schedule; and

(e) details of any contamination or decontamination of the site which has occurred.

Overview:

Overall, this was a settled year with all results within permitted limits.

Mainly due to the weather, the effluent plant discharge flow was approx. 20% higher than the prior year. This contributed to higher electricity usage.

Production was decreased from the previous year by 17.4%. This represents a 25% decrease from 2019 levels. This leads to a change in the production efficiency as the baseload does not change by the same amount.

An updated environmental permit was issued to take account of the back-up generators.

The site continued with its accreditation to the ISO14001:2015 and ISO45001: 2018 standards

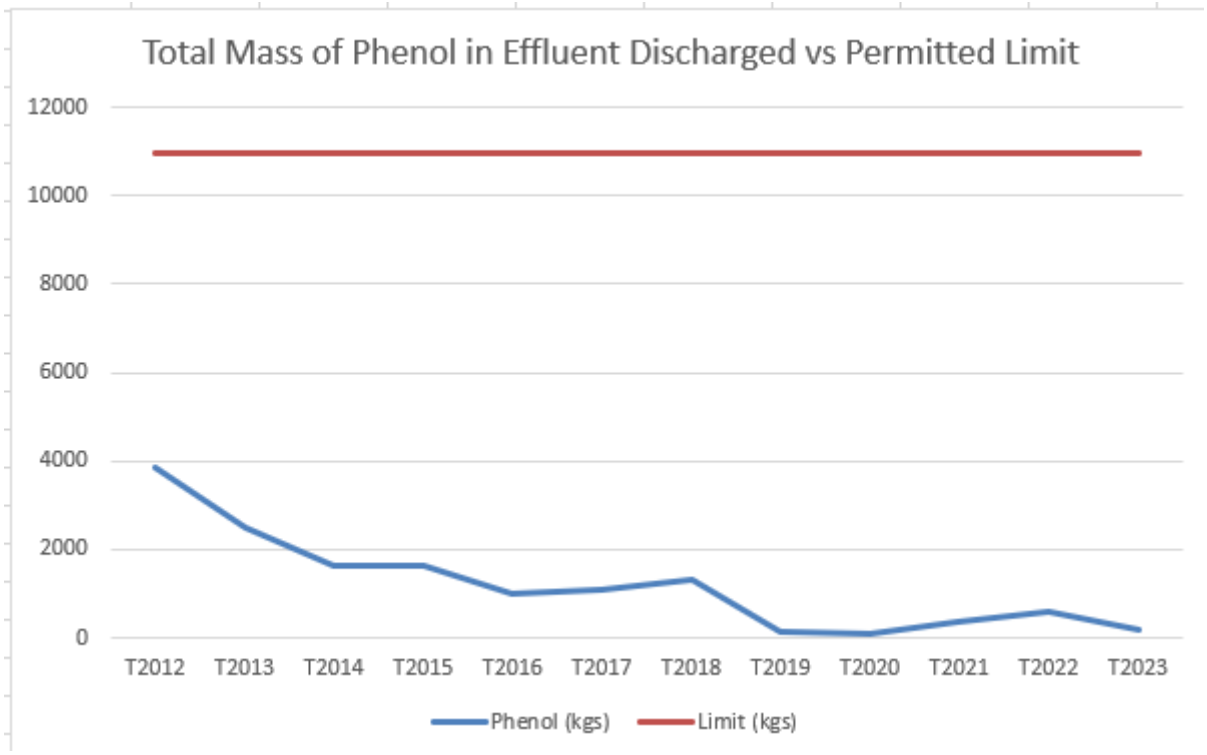
(a) Monitoring and Assessment:

Following the previous year performance, the effluent treatment plant was managed more closely and this resulted in a better set of results. The mass of phenol discharged was reduced – see graph.

Gas consumption decreased but, as mentioned above, not at the same rate as the decrease in production. Electricity use increased. A notable contribution was the 20% increase in flow from the effluent treatment plant. Rainfall statistics for Wales showed below average precipitation in 2022 and above average for 2023 (source: Met Office). This has resulted in an higher energy per tonne of production ratio. Other reasons for this can include recipe mix.

Water use through the year was reduced.

Quarterly air monitoring on the scrubber and annual monitoring on the boilers gave results within the permitted limits.



(b) Targets:

Target setting followed a different process this year and targets were set up as Environmental Key Performance Indicators and a Site Improvement Plan

Systems	Leading Indicator	Mth	YTD	Lagging Indicator	This month	YTD Status
Bioplant Operation	Days of Sealine >10mg/l (T=<=24)			Permit Exceedance (T=0)		
Water use	Reduction of water use at Bioplant (T = 33% reduction)	Mth	YTD			
Equipment performance	Environmentally critical PMs overdue (T=0)	Mth	YTD			
Lab testing Observations	2 / mth	Mth	YTD			
Closing of Actions (ATS + Int Audits)	No of open overdue actions (T=0)		n/a	Reportable spills (T=0)		
Primary containment	All spills and unexpected releases (T<=12 pa)	Mth	YTD			
Dec-23						

Good progress in the leading indicators help an excellent result in the lagging indicators. There is still room for improvement in a couple of the leading indicators.

The table below is a summary of the environmental related Site Improvement Plan items:

Topic	Summary
Site Flood Protection	U39 surface water collection pit electrics raised above the flood level, safe route marked to U39 and water ingress protection to key buildings on 2024 CAPEX programme
Industrial Emissions Directive	Reviewed threshold levels, understand required improvements
Internal Audit Programme	New auditors trained, KPI to monitor progress, programme completed

The amount of energy used per tonne of production increased by approx. 14.5%

The amount of water used per tonne of production decreased by approx. 18.4%

(c) and **(d)** are covered by submission of the annual returns to NRW

(e) Contamination / De-contamination:

Information about significant waste streams:

Description	**Amount** (tonnes)	**Comments**
Bio-sludge	412	
Hazardous Waste	121	This is representative of general process wastes such as filter waste, contaminated PPE, lab waste, contaminated packaging and fluctuates year on year.