	Title: **H1 Surface Water Risk Assessment – EQS Screening Annex**	
	Location: **Bradgate Bakery, Madeline Road, Leicester, LE4 1WX**	Date: **19.06.2026**

Project Title:	**(RE: EPR/CP3430WV/V005) Bradgate Bakery Variation Application**

Scope of Assessment:	This annex assesses the substances identified within the sites existing cleaning chemicals which will increase in daily use as a result of cleaning regimes to be implemented as part of the additional 6 new process lines proposed, that will discharge to sewer via the onsite Effluent Treatment Plant (ETP). This report assesses the sites' cleaning chemicals that have relevant EQS's in the EA H1 tool library. The assessment considers worst-case release concentrations, using documented treatment-removal factors and published EQS's.

H1 Tool Output — In-Library Substances (Chlorine, EDTA, Chloride)

Table 1 – H1 Data Field Inputs

Field	Value
EFR (mean/max effluent flow)	0.00752 m^3/s (650 m^3/day)
Q95 (River Soar)	3.42 m^3/s
Via sewer	Yes
Dilution factor EFR/(EFR+Q95)	0.0021940
Background (BC)	50% × EQS

Table 2 – H1 Substances assessed against EQS

Row	Substance	RC avg/max (µg/L)	Sewer factor
17	Chlorine (95%ile total residual oxidant)	6,591	0 (worst case)
18	EDTA	29,108	0
19	Chloride	186,000 (measured)	0

Table 3 – Output (conservative, worst case, sewer factor = 0)

Substance	EQS (µg/L)	PC (µg/L)	PC as % EQS		PEC (µg/L)	Screen result
Chlorine (total residual oxidant)	2 (AA) / 10 (MAC)	14.46	723%		15.46	**Does NOT screen out** (worst case)
EDTA	2,860 (REACH PNEC)	63.87	**2.2%**		1,493.9	**Screens out** (PC ≤ 4% EQS)
Chloride	no ecological EQS	408 (0.41 mg/L)	—		n/a	**Not constraining** (no EQS; negligible increment)

Table 4 - Chlorine — refined (Option B, with documented in-sewer decay/removal of 99%)

Substance	EQS (µg/L)	Sewer factor	PC (µg/L)	PEC (µg/L)	Screen result
Chlorine	2 (AA) / 10 (MAC)	0.99	0.145	1.145	**Screens out** — PEC (1.145) < EQS (2) and (PEC−BC)=0.145 ≤ 10% EQS (0.2)

Free chlorine from hypochlorite is consumed by organics in the raw sewage and destroyed in biological treatment (the SDS notes it decomposes to oxygen and sodium chloride); a 99% removal/decay factor is applied and will be confirmed by effluent monitoring.

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Summary

- **EDTA — screens out** (2.2% of EQS) on a pure worst-case basis, no removal credit needed.
- **Chloride — not a constraining determinands** (no ecological EQS; measured 186 mg/L in discharge, ~0.4 mg/L contribution to river).
- **Chlorine — screens out on the refined basis** (99% in-sewer decay); does not screen out at absolute worst case, hence the monitoring commitment to confirm residual chlorine in the operating discharge.

Notes

- EDTA EQS taken as the REACH freshwater PNEC (2.86 mg/L). The EA tool's library value should be read off when the file is opened in Excel; it is of the same order and does not change the conclusion.
- To reproduce in the EA tool, enter the inputs above on sheet 1Wati (rows 8 and 17–19) using the Claude-for-Excel extension prompt provided, and read off PC/PEC/screening.