Alexandra Basin Redevelopment 2

Bringing Dublin Port To 2040

Environmental Impact Assessment Report

Appendix 9-2 Assimilative Capacity Calculations

Volume 3



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Appendix 9-2 ABR2 Project Assimilative Capacity Calculations

Table 1-1 ABR2 Assimilative Capacity Calculations

	Contaminant of Potential Concern								
	TBT	**Nickel**	**Mercury**	**Arsenic**	**Cadmium**	**Chromium VI**	**Copper**	**Lead**	**Zinc**
Flow and Quality data									
Discharge (Qeff) m3/day	6000	6000	6000	6000	6000	6000	6000	6000	6000
Discharge (Qeff) m3/sec	0.0694	0.0694	0.0694	0.0694	0.0694	0.0694	0.0694	0.0694	0.0694
Q river m3/sec	6.491	6.491	6.491	6.491	6.491	6.491	6.491	6.491	6.491
U/S Background Concentration (µg/l)	0.00016	3.033	0.013	3.358	0.100	0.300	2.500	0.650	30.892
Dilution Factor	94	94	94	94	94	94	94	94	94
Background Monitoring data									
2022 Mean (SW1)	0.000178365	1.907659574	0.0141224	1.51102041	0.1308163	0.362040816	2.736531	0.97531	35.0469
2023 Mean (SW1)	0.000128451	2.290163934	0.0148689	4.64370968	0.27	0.179677419	4.991129	8.48645	34.3279
2024 Mean (SW1)	0.0001799	4.902	0.0107	3.92	0.11	1.254	2.177	0.75	23.3
Mean Background (u/s)	**0.00016**	**3.03**	**0.013**	**3.36**	**0.17**	**0.60**	**3.30**	**3.40**	**30.89**
Process Contribution and ELVs (µg/l)									
EQS - MAC (µg/l)	0.0015	34	0.07	-	0.45	32	-	14	-
1% of EQS (µg/l)	0.000015	0.34	0.0007	-	0.0045	0.32	-	0.14	-
Process contribution (µg/l)	0.00142	32.12	0.066	-	0.425	30.2	-	13.2	-
EQS - AA (µg/l)	0.0002			20			5		40
1% of EQS (µg/l)	0.000002			0.2			0.05		0.4
Process contribution (µg/l)	0.00019			18.9			4.7		37.8
Proposed ELV (µg/l)	**0.00142**	**32.12**	**0.066**	**18.9**	**0.425**	**30**	**4.7**	**13.23**	**38**
Mass Balance assessment									
Resultant Concentration	0.000176	3.3412	0.0138	3.5227	0.1034	0.6168	2.5235	0.7831	30.9646
Headroom calculations MAC									
Headroom available	0.00132	30.659	0.05621	16.4773	0.34656	31.38318	2.4765	13.2169	9.0354
% headroom utilised	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.8
		denotes adjusted background concentration applied							