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Optimising the implementation of the 2nd RBMP in the Malta River Basin District
LIFE 16 IPE MT 0008



Action C.18
Monitoring for emerging pollutants of potential concern

Result 2: Annual Monitoring Report 2023-2024

Table of Contents

CONTENTS OF FIGURES	2
CONTENTS OF TABLES	2
1.0 INTRODUCTION. PURPOSE, OBJECTIVE AND CONTEXT OF THIS DOCUMENT	4
2.0 SAMPLING STRATEGY	6
3.0 SAMPLE SITES.....	7
<i>3.0 Sample Collection and Laboratory Analysis.....</i>	<i>11</i>
4.0 RESULTS.....	12
<i>4.1 Groundwater</i>	<i>12</i>
<i>4.2 Inland surface waters</i>	<i>14</i>
<i>4.4 New water</i>	<i>16</i>
<i>4.5 Coastal and transitional water</i>	<i>16</i>
<i>4.6 Additional Testing sites.....</i>	<i>17</i>
5.0 SUMMARY	19
ANNEX.1 TEST PARAMETERS, METHODS, LOD AND LOQ.....	21
ANNEX 2 CHEMICALS TESTED FOR WITHIN ‘TENTATIVELY IDENTIFIED COMPOUNDS’ SCREENING ASSAY	33
ANNEX 3 EXEMPLAR CHAIN OF CUSTODY FORM	51
ANNEX 4 ACCREDITATION CERTIFICATE.....	52
ANNEX 5 RESULTS	53

Contents of Figures

Figure 1 Location and sampling profile of all sampling points.....	8
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Contents of Tables

Table 1 Details of the monitoring activities per each water category.	7
Table 2 Details of sample points	9
Table 3 Container type for different parameters.....	11
Table 4 Number of sites contaminated with the most widespread pollutants in year 1 and 2 of sampling	19
Table 5 Test Parameters, methods, LOD and LOQ.....	21
Table 6 Results of groundwaters.....	53
Table 7 Water Screening for Tentatively Identified Compounds ¹ in Groundwater ²	53
Table 8 Results of Inland surface waters.	55
Table 9 Water Screening for Tentatively Identified Compounds ¹ in Inland surface waters ²	57
Table 10 Results of Coastal, Storm, Transitional and New waters.	58
Table 11 Water Screening for Tentatively Identified Compounds ¹ in Coastal waters ²	59
Table 12 Water Screening for Tentatively Identified Compounds ¹ in Storm Water.....	60
Table 13 Water Screening for Tentatively Identified Compounds ¹ in Transitional Water	62
Table 14 Water Screening for Tentatively Identified Compounds ¹ in New Water	63

Table 15 Results of Sampling Additional Waters. Samples taken in duplicate (a,b).....	65
Table 16 Water Screening for Tentatively Identified Compounds ¹ in Additional Surface Water sites ²	67
Table 17 Compounds detected at least once in year 1 of sampling	69
Table 18 Compounds detected at least once in year 2 of sampling	70
Table 19 Sampling schedule in year 1 and 2 of monitoring	71
Table 20 EQS of recorded contaminants.....	72

1.0 Introduction. Purpose, objective and context of this document

1.1 AquaBioTech Ltd. (ABT) was commissioned by the Environment and Resources Authority (ERA) to undertake a two-year monitoring campaign of Malta's water resources. This is a requirement of the Water Framework Directive (WFD) (Directive 2000/60/EC) as part of its associated River Basin Management Plans (RBMPs). Water resources in Malta are limited and heavily utilized so it is critical to monitor their status. The purpose of the study was to assess Malta's water resources in terms of contaminants of emerging concern and pollutants attributed to diffuse sources of pollution. The investigation is part of a project funded by the LIFE Programme under the Project Policy Area LIFE Integrated Project Environment (LIFE16/IPE/MT0008, Action C.18).

1.2 The objectives of the project are as follows:

Objective 1: To update the monitoring strategy developed as part of LIFE16/IPE/MT0008 (Action A.6) to address gaps related to the characterisation and quantification of diffuse sources of pollution in Malta.

Objective 2: To implement an initial screening monitoring exercise of the contaminants of emerging concern and diffuse sources of pollution for a period of two years.

Objective 3: To update the monitoring strategy on the basis of the results of the initial screening monitoring exercise to enable focused monitoring of CECs and their sources, and diffuse sources of pollution.

1.3 This document is presented pursuant to Result 2 of Tender SPD8/2021/066; namely to:

- 1.3.1 Compile the results of the analyses of monitored waters namely: Groundwater, Stormwater, New Water, Surface Water (Seawater, Inland Surface and Transitional waters) and Additional Monitoring Stations – of the second year of sampling.
- 1.3.2 Review and summarise the results identifying trends or patterns in comparison to the first year's results.
- 1.3.3 To use this information to make suggestions for consideration in developing future monitoring and policy.

Name and Surname of Key Expert 1: Nicolas Kalogerakis

Signature: 

Date: 01 April 2025

Name and Surname of Key Expert 2: Adrian Love

Signature:

A handwritten signature in blue ink, appearing to read 'Adnan Zee', with a stylized, cursive script.

Date: 01 April 2025

2.0 Sampling Strategy

The explanation and justification of the sampling strategy is reviewed in documents addressing Objective 1 (Monitoring Strategy) and recapped in the Annual Review of year 1 (Result 2). The results of Year 1 sampling confirmed that this sampling strategy was appropriate and endorsed that maintaining the same strategy in year two would give continuity and substantiate any trends and patterns. To summarise: water samples were taken from 24 sampling stations; 16 of which were established by the results of Action A.6, along with eight additional stations proposed by ERA (Table 1). From each point, water samples were tested for different compounds according to their category (Table 1 and Figure 1):

- All categories were analysed for 'Contaminants of Emerging Concern' (CEC) identified in the monitoring strategy proposal developed as part of LIFE16/IPE/MT0008 Action A.6
- Inland surface waters and the additional monitoring stations were also analysed for evidence of diffuse pollution, evidenced by the presence of 'Priority and Priority Hazardous Substances' listed in Directive 2013/39/EC **and** as pollutants in Directive 2006/118/EC.
- The combined list of parameters from the Diffuse Pollution and CEC, the testing methods, LOD and LOQ is found in Annex 1.
- Combined samples from each category were screened once for Tentatively Identified Compounds (TIC) – chemicals which are not yet on the aforementioned lists, but whose presence may warrant further monitoring. Annexes VIII and X of the Water Framework Directive 2000/60/EC (establishing a framework for Community action in the field of water policy) and the Commission Implementing Decision (EU) 2022/1307 (establishing a watch list of substances for Union-wide monitoring) were used to compile an assay of 1020 compounds that were screened for using SCAN GCMS (listed in Annex 2).

Table 1 Details of the monitoring activities per each water category.

Water category	CEC ¹	Diffuse ²	TIC ³	Monitoring Stations	Replicates	Frequency per year ⁴	Screening duration (years)
Groundwater	ü		ü	7	2	4	2
Inland Surface Waters	ü	ü	ü	3	2	2	2
Transitional	ü		ü	1	2	2	2
Stormwater	ü		ü	1	2	2	2
Coastal	ü		ü	3	2	4	2
New Water	ü		ü	1	2	4	2
Additional Monitoring Stations	ü	ü	ü	8	2	2	2

¹CEC= Compounds of Emerging Concern, ²Diffuse = characterisation of diffuse sources of pollutants,

³TIC= Tentatively Identified Compounds (Annex 2) ⁴See Table 19 Table 19 for sampling schedule

3.0 Sample sites

Full justification for each sample site is given in the Annual Review of year 1 (Result 2). To summarise; samples sites were selected to represent a full range of situations and agreed with ERA and other stakeholders (Figure 1 and Table 2):

- Groundwater sites represented the three main types of aquifer: sea level (Fiddien, Ta'Pinu, Ġnien, and Sellun) perched (phreatic) (Baħrija and Victoria), and coastal (Pwales) and, within those aquifers, sites were selected from rural (Fiddien, Ta'Pinu, Baħrija and Pwales) and urban areas (Ġnien, Sellun and Victoria).
- Inland surface, transitional waters and additional monitoring stations were distributed throughout Malta and Gozo representing rural (Wied il-Luq, Wied il-Lunzjata, Wied Inċita, Marsalforn, Wied il-Mielaħ, Burmarrad Mosta (Għasel catchment) and Wied Qoton) and urban land use (Is-Salini, Wiedi is-Sewda, Wied Blandun, Marsa Storm water catchment, and il-Magħluq ta' Marsaskala).
- Coastal waters were sampled off San Dimitri point, at the northwestern tip of the archipelago and against the prevailing currents – representing a minimally impacted 'control' point, and off Ta' Barkat sewage treatment discharge point and within Xemxija bay which have evident anthropogenic pressures.
- New water was sampled from the largest processing unit at Ċumnija Urban Wastewater Treatment Plant.
- Stormwater was collected from the NFRP outfall at ta' Xbiex.

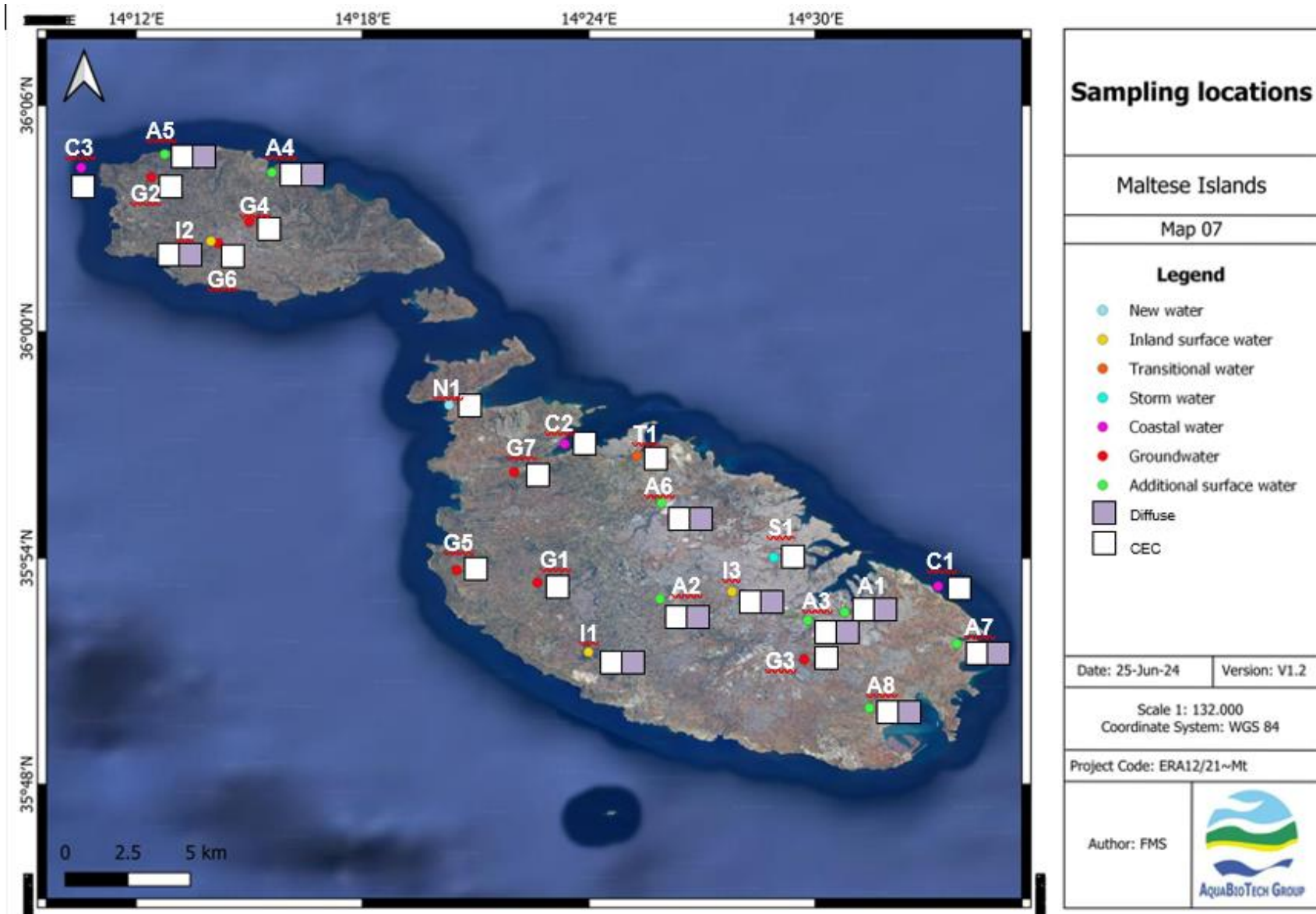


Figure 1 Location and sampling profile of all sampling points

Table 2 Details of sample points

Water category	ID	Station Name	Sampling strategy	Location	Lat*	Long*
Groundwater	G1	Fiddien Station	CEC & TIC	Rabat (Malta)	35.887453	14.376600
	G2	Ta' Pinu Borehole ¹	CEC & TIC	Għarb (Gozo)	36.044489	14.250974
	G3	Ġnien Borehole ²	CEC & TIC	Hal Luqa (Malta)	35.853486	14.494444
	G4	Sellun Borehole ³	CEC & TIC	Rabat (Gozo)	36.044501	14.250980
	G5	Baħrija	CEC & TIC	Baħrija (Malta)	35.894379	14.342157
	G6	Victoria Station	CEC & TIC	Rabat (Gozo)	36.040055	14.233248
	G7	Pwales Station	CEC & TIC	Pwales (Malta)	35.935462	14.361826
Coastal	C1	Off Ta' Barkat STP, Xghajra	CEC & TIC	Xgħajra (Malta)	35.88578	14.55368
	C2	Xemxija Bay	CEC & TIC	St Paul's Bay (Malta)	35.9487	14.38866
	C3	Off San Dimitri Point	CEC & TIC	Gozo	36.07072	14.17515
New Water	N1	Cumnija UWWT Plant	CEC & TIC	Mellieħa (Malta)	35.968138	14.338567
Transitional	T1	Is-Salini	CEC & TIC	Malta	35.944149	14.420586
Inland Surface Waters	I1	Wied il-Luq	CEC & TIC & Diffuse pollution	Is-Sigġiewi (Malta)	35.858699	14.400677
	I2	Wied il-Lunzjata	CEC & TIC & Diffuse pollution	Gozo	36.041124	14.232713
	I3	Wied is-Sewda	CEC & TIC & Diffuse pollution	Qormi (Malta)	35.883512	14.462523
Additional Monitoring Stations	A1	Wied Blandun	CEC & TIC & Diffuse pollution	Il-Fgura, Malta	35.875546	14.513666
	A2	Wied Inċita	CEC & TIC & Diffuse pollution	Attard, Malta	35.881475	14.431811
	A3	Marsa Storm water catchment	CEC & TIC & Diffuse pollution	Marsa, Malta	35.877210	14.495686

	ID	Station Name	Sampling strategy	Location	Lat*	Long*
Additional Monitoring Stations (cont)	A4	Marsalforn	CEC & TIC & Diffuse pollution	Marsalforn Catchment, Gozo	36.066457	14.260694
	A5	Wied il Mielaħ	CEC & TIC & Diffuse pollution	Mielaħ Catchment, Gozo	36.070241	14.209933
	A6	Burmarrad, Mosta	CEC & TIC & Diffuse pollution	Għasel Catchment, Malta	35.928749	14.429094
	A7	IL-Magħluq ta' Marsaskala	CEC & TIC & Diffuse pollution	Sant' Antin Catchment, Malta	35.861905	14.562427
	A8	Wied Qoton	CEC & TIC & Diffuse pollution	Qoton Catchment, Malta	35.818836	14.530215
Stormwater	S1	Xatt Ta' Xbiex	CEC & TIC	Msida (Malta)	35.899487	14.500738

* latitude/longitude values use the WGS 84 datum

¹ Originally at San Katald (36.06652, 14.2062), where the first sample was taken (March, 2023). However, due to the pump malfunctioning at that site, EWA recommended to test at Ta' Pinu, another borehole used for the municipal water distribution network by WSC, from the June 2023 sampling onwards. Both boreholes extract from the same aquifer. ERA was notified.² Could not be sampled in December 2024, so a borehole within the same aquifer – Iklin II (35.909750, 14.455753) was sampled after agreement with ERA. ³ Originally at Ghattuq (36.04691, 14.24957), where the first sample was taken (March, 2023). However, due to the pump malfunctioning at that site, EWA recommended to test at another WSC borehole closeby (Sellun) from June 2023 sampling onwards. Both boreholes extract from the same aquifer. ERA was notified

3.0 Sample Collection and Laboratory Analysis

Before collection of samples, the relevant stakeholders (e.g. EWA, Ministry For Public Works And Planning, and WSC) were contacted. Once arranged, ERA was notified of the sampling date/s. Sample sites were grouped geographically to minimize time in transit. Samples were collected following ISO 5667-1:2020 into clean, new vessels depending on the volume required by the type and LOQ of analysis (Table 3). Conditions at the time of collection were noted where appropriate (e.g. after heavy rainfall).

Table 3 Container type for different parameters

Compound Class	CEC	Container Type	Acid Volume
Amines	1 L	Dark Glass	1 ml H ₂ SO ₄
PFOA/S + Alkylphenols + Pesticide (LC amenable) + Glyphosate + Un-ionized ammonia (NH ₃) + Anions	500mL	PP PFOA/S free	n/a
POPs + Pesticide (GC amenable)	5x 1 L	Dark Glass	n/a
PAH + SVOC	1 L	Dark Glass	1 ml HCl
VOC	2 x 40 mL	Glass	2 drops HCl
Glycols + EDTA + Un-ionized ammonia (NH ₃) + Anions + Bisphenol A	500 mL	PP or PET	n/a
Metal	50mL	Falcon or PP	2 drops HNO ₃
Dioxins and dioxin-like compounds (HRMS)	2L	Dark Glass	1 ml HCl
Tributyltin compounds	1L	Dark Glass	n/a

Once collected and prepared (acid was added in some analytes for preservation), samples were boxed in specialized secure boxes, and ice blocks added. Samples were couriered out on the day of sampling and were delivered to the analysing laboratory within 24h. Samples were not taken on Fridays due to the delay in shipping over the weekend. Within each box, a Chain of Custody form was completed (Annex 3) which was also emailed to the testing laboratory.

All analyses were carried out by Biochemie Lab SRL (Accredited by Accredia No. 0195, see Annex 4) This laboratory is accredited to UNI CEI EN ISO IEC 17025:2017 to analyze the required parameters

in accordance with MSA EN ISO/IEC-17025:2005 or other equivalent standards accepted at international level.

Results were collated and sorted into sample type (coastal, new etc) and sent to stakeholders at ERA and EWA.

4.0 Results

According to the WFD, (Directive 2000/60/EC) the Chemical Status of water bodies is assessed for each priority substance on the basis of its compliance with established standard values (referred to as Environmental Quality Standards (EQS) for surface waters and quality standards or threshold values for groundwaters). Therefore, this report will generally focus on parameters which have exceeded such quality standards or, where not recognized/published, an evaluation of the recorded values based on environmental data (Table 20).

4.1 Groundwater

As in year 1 of testing, the analysis of groundwaters indicates these aquifers remain uncontaminated with CECs (Table 6), with the exception of Victoria, Gozo.

Year 1 of sampling was characterised by the same five compounds: acesulpham k, carbamazepine, methyl-benzotriazole, sulfamethoxazole and benzotriazole being found repeatedly at Victoria sampling station. In year 2, the pattern was repeated; with the exception of EDTA which was only detected in the second year (this will be discussed in the following paragraph). Like the previous year, the contaminants were all detected at concentrations under their EQS, but these compounds are evidently persistent contaminants in this aquifer that should remain under routine surveillance. All of these compounds are typically domestic in their origin: acesulpham K is a food sweetener; carbamazepine, a pharmaceutical, benzotriazoles are anti-corrosives (used in numerous domestic products, such as automotive coolants, hydraulic brake fluids, and metal coating materials) and sulfamethoxazole, an antibiotic. The route by which these pollutants have found their way into the Victoria aquifer is not ascertainable; one of the most common sources of CEC contamination¹ is sewage treatment plant (STP) discharge. This can be discounted because the STP is outside the catchment and the treated sewage effluent discharges directly to the sea. However, other potential sources include sewage leakage prior to the STP via possible faults in the sewage network, or septic tanks, and runoff. This station reflects the old urban village core of Victoria, which comparing to other sites in Malta and Gozo, is more urban and hence more susceptible to these contaminants. As Victoria station is a spring, rather than a borehole or well like the other groundwater sample sites

¹ Mumberg, T., Ahrens, L., & Wanner, P. (2024). Managed aquifer recharge as a potential pathway of contaminants of emerging concern into groundwater systems—A systematic review. *Chemosphere*, 143030.

(except rural Bañija), therefore it may be regarded as having greater influence from surface factors. This would explain a level of contamination that is more akin to that seen in inland surface waters (see 4.2).

Ethylenediaminetetraacetic Acid (EDTA) is used as a chelator for complex plant microfertilizers, and in washing powders as a soap and bleach stabiliser. Its environmental impacts are more associated with the ions it has chelated rather than direct toxicity. While there is no EQS for EDTA, the World Health Organization recommends the concentration in drinking water should not exceed 600 µg/L². It is important to note that water from Victoria-Kerčem Groundwater body is not used for the public distribution water network. Calculations based on the worst-case estimates of sewage flows suggest that the concentrations in European sewage effluents of EDTA arising from detergents use should be in the range of 100–300 µg/L in the treated effluent, and in receiving waters 10–30 µg/L. When surveyed, the concentrations of EDTA found in European rivers was 0–60 µg/L³. More recent surveys of 45 Belgian⁴ and eight Western European⁵ STW effluents found that EDTA had the highest concentrations of any ‘micro pollutant’, with an average value of 520 µg/L and 60 µg/L respectively in the treated effluents. A single value of 1860 µg/L was detected at Sellun borehole in Q1 of year 2, but this should be viewed cautiously; it was only detected in one of the two (duplicate) samples, and only slightly above the LOQ of 1500 µg/L. However, an average concentration of 2870 µg/L was detected at Victoria in Q4. Since EDTA is widely used in domestic, industrial and agricultural applications it is not possible to suggest a single source of this contamination. However, whilst this is the only detection of the compound at this site in two years of sampling, it is potentially concerning given the high levels and that it is not biodegradable under environmental conditions. Further monitoring is advised.

Monitoring results are presented in Table 6.

In total, 46 Tentatively Identified Compounds were detected in the Screening Analysis (Table 7), compared to 24 compounds in the first year of sampling. None of the compounds were above EQS but there is one noteworthy measurement. Propylparaben is a preservative used in pharmaceuticals that is a compound of emerging concern⁶. It was placed on the Community Rolling Action Plan (CoRAP) and therefore was evaluated by ECHA from 2015. Currently, it is undergoing formal assessment as an endocrine disrupter⁷. Studies have found it in EU river water at maximum levels

² World Health Organization. WHO/SDE/WSH/03.04/58 Edetic Acid (EDTA) in Drinking-Water; WHO: Geneva, Switzerland, 1998

³ Wolf, K., & Gilbert, P. A. (1992). EDTA—Ethylenediaminetetraacetic acid. In *Detergents* (pp. 243-259). Berlin, Heidelberg: Springer Berlin Heidelberg.

⁴ Leekitratanapisan, W., & De Schamphelaere, K. A. (2025). Risk characterization of organic micropollutants in public wastewater treatment plant effluents in Flanders, Belgium. *Integrated Environmental Assessment and Management*, vjaf012.

⁵ Reemtsma, T., Weiss, S., Mueller, J., Petrovic, M., González, S., Barcelo, D., ... & Knepper, T. P. (2006). Polar pollutants entry into the water cycle by municipal wastewater: a European perspective. *Environmental science & technology*, 40(17), 5451-5458.

⁶ Ricardo, I. A., Paniagua, C. E., Alberto, E. A., Starling, M. C. V., Agüera, A., & Trovó, A. G. (2022). A critical review of trends in advanced oxidation processes for the removal of benzophenone-3, fipronil, and propylparaben from aqueous matrices: Pathways and toxicity changes. *Journal of Water Process Engineering*, 49, 102973.

⁷ <https://echa.europa.eu/substance-information/-/substanceinfo/100.002.098>

of 0.145µg/L⁸ but typical values are in the range of 0.047 – 3 x 10⁻⁴ µg/L⁹ so the value detected in the screening analysis (4.257 µg/L) is concerning. Nevertheless, this level is still an order of magnitude greater than toxic concentrations¹⁰. It was not recorded in this, or any, water type in the first year of sampling.

4.2 Inland surface waters

The results of analysis of Inland surface water sites were relatively consistent between the first and second years. The number of compounds detected in 2023 and 2024 was 14 and 19 respectively, with many (63%) chemicals being found across both years.

As indicated by year 1's results, ammonium was characterized by its variability; in Q1, Wied Il-Luq samples contained approximately ten times more ammonium in 2024 compared to 2023, whereas Wied is-Sewda samples contained approximately sixty times less. Similarly, Wied is-Sewda contained an average of 94.8 µg/L in Q1, but 10,524 µg/L in Q4. This changeability – termed an 'ammonium pulse'¹¹ – may be caused by run-off from a recently fertilised area followed by removal of ammonium due to biodegradation or dilution and impedes a true evaluation of the general situation.

Sulphates were detected at similar concentrations in year 1 and 2, and at an average concentration of 68.2mg/L (compared to 74.6mg/L in year 1). Like with many ions, sulphate's toxicity is inversely proportional to water hardness but, in hard water aquifers typical of Malta, proposed EQSs range from 158-317 mg/L¹².

Similar to year 1, lead was found at all inland water sites, though at slightly higher levels in year 1. Values ranged from <1.0 - 15.5 µg/L across all sites compared to an AA-EQS of 1.2µg/L (Directive 2013/39/EU).

Glyphosate was found in inland water sites in year 1 and 2, though at different locations. In Q1, year 2, it was detected at levels of 1.725 µg/L (average) at Wied is-Sewda (rather than Wied il-Lunzjata in year 1). This value is over ten times the recommended EQS for 'surface water not used for producing drinking water'¹³. EDTA was detected at an average concentration of 1890 µg/L at Wied il-Lunzjata, which is two orders of magnitude greater than the European average of surface waters (see 4.1) – though it was not detected previously at this site or any other inland water. Poly-

⁸ Carmona, E., Andreu, V., & Picó, Y. (2014). Occurrence of acidic pharmaceuticals and personal care products in Turia River Basin: from waste to drinking water. *Science of the total environment*, 484, 53-63.

⁹ Bolujoko, N. B., Unuabonah, E. I., Alfred, M. O., Ogunlaja, A., Ogunlaja, O. O., Omorogie, M. O., & Olukanni, O. D. (2021). Toxicity and removal of parabens from water: A critical review. *Science of the Total Environment*, 792, 148092.

¹⁰ Brand, W., Boon, P. E., Hessel, E. V. S., Meesters, J. A. J., Weda, M., & Schuur, A. G. (2018). Exposure to and toxicity of methyl-, ethyl- and propylparaben: A literature review with a focus on endocrine-disrupting properties.

¹¹ Tan, X., Yuan, G., Fu, H., Peng, H., Ge, D., Lou, Q., & Zhong, J. (2019). Effects of ammonium pulse on the growth of three submerged macrophytes. *PLoS One*, 14(7), e0219161.

¹² <https://www.aces.su.se/aces/wp-content/uploads/2018/10/Sulfate-EQS-data-overview-2018.pdf>

¹³ https://health.ec.europa.eu/document/download/7ace1a87-dd0a-4a78-809e-5454aacce2a8_en?filename=scheer_o_049.pdf

fluoroalkylated substances (PFAS) were detected at all inland surface waters in year two – an increase from year one when they were detected in two-thirds of sites. Whilst they were always detected at levels far lower than their EQS (Table 20), their prevalence is of concern given their toxicity, permanence and potential for bioaccumulation in the environment.

Contaminants almost ubiquitous in the first year of sampling: acesulfame K, benzotriazole, 5-methyl-benzotriazole, and sulfamethoxazole were all detected in inland surface waters though none at levels greater than their EQS. DEHP, which had a few concerning results in year 1, was only detected at one site – Wied il Lunzjata - in year 2 (only in Q4) and at levels several orders of magnitude lower than the proposed EQS.

Monitoring results are presented in Table 8

The number of tentatively identified compounds detected in year 2 (n= 47) (Table 9) was 47% greater than the number detected in year 1 (n=32). Whilst there were no compounds in exceedance of their EQS, two results are noteworthy.

Neodecanoic acid (ethenyl ester) was detected at the highest level of any compound (169.26 µg/L). Neodecanoic acid is not included in WFD lists, but is included on the OSPAR List of Chemicals for Priority Action¹⁴ (concerned with standards in the marine environment) due to the lack of information on its risk. The compound was not detected in the first year of sampling.

Propylparaben was detected at a concentration of 5.12 µg/L. While there is no EQS for this compound, it is a CEC and the values are substantially greater than other EU surface waters (0.145µg/L¹⁵).

4.3 Stormwater

As in the previous year's results, Stormwater was one of the more impacted water sources. In year 1, the contamination was temporally very variable, which was expected given that this water source is comprised of whatever residues from anthropogenic surfaces and drains were rinsed off in the most recent rainfall. However, the contamination showed surprising consistency between years: of the 11 contaminants detected in year 2, 82% were also detected in year 1. Glyphosate was found at concentrations greater than EQS in both years, at an average of 0.6145 µg/L (0.405 µg/L in year 1) compared to a recommended EQS of 0.1 µg/L¹⁶. EDTA was detected at an average concentration of 2580 µg/L in Q4 of year 2 compared to typical European river values of 0-60 µg/L. As with other water sources, the contaminants acesulfame K, benzotriazole, 5-methyl-benzotriazole, and

¹⁴ <https://www.ospar.org/documents?v=7264>

¹⁵ Carmona, E., Andreu, V., & Picó, Y. (2014). Occurrence of acidic pharmaceuticals and personal care products in Turia River Basin: from waste to drinking water. *Science of the total environment*, 484, 53-63.

¹⁶ https://health.ec.europa.eu/document/download/7ace1a87-dd0a-4a78-809e-5454aacce2a8_en?filename=scheer_o_049.pdf

sulfamethoxazole were all detected in storm water though none at a level greater than its EQS (Table 10).

A total of 68 Tentatively Identified Compounds were detected through the screening exercise (Table 12) in year 2, compared to 30 in year 1. The only compound detected above EQS was DEHP, recorded at a concentration of 2.2584 µg/L compared to a proposed EQS of 1.3 µg/L (Table 20). It is notable that DEHP was not detected at levels above the LoQ (1.8 µg/L) in the specific analyses. Carbamazepine, commonly found in other water types, was detected through the screening process (at a concentration of 0.066 µg/L) but not detected through specific (GCMS) analysis. In the first year of sampling, it was detected through GCMS at an average concentration of 0.517 µg/L but not detected in the screening analysis. In common with other surface waters – inland surface, transitional and additional sampling sites - Neodecanoic acid (ethenyl ester) was detected at levels higher than other TICs.

Monitoring results are presented in Table 10 and Table 12

4.4 New water

New water is produced by highly processing urban wastewater; therefore, it is subject to any contamination in the latter. To mitigate this, following standard secondary treatment the new water is further treated using ultrafiltration, reverse osmosis and advanced oxidation processes which are specifically designed and proven to remove almost all contamination. Six contaminants were detected in year 2 (compared to four in year 1), 33% of which were detected in both years (benzotriazole, atenolol). No compounds were detected above EQS (Table 10).

Monitoring results are presented in Table 10

There was a very substantial increase in the number of tentatively identified compounds detected in year 2 (Table 14) compared to year 1 – 49 versus 15 respectively. Again, propylparaben was detected at surprisingly high levels (4.91 µg/L) – approximately 10 times higher than the maximum EU levels, though there is not currently an EQS. The only compound detected above EQS was DEHP, which was detected at 2.46 µg/L compared to a proposed EQS of 1.3 µg/L (Table 20). However, DEHP was not detected at levels above the LOQ (1.8 µg/L) in the specific analyses.

4.5 Coastal and transitional water

Consistent with year 1, no parameters above EQS were detected in coastal waters at any point in the year (Table 10). There was a 100% increase in the number of Tentatively Identified Compounds detected (Table 11) between year 2 (n=34) compared to year 1, though none above EQS. Without a longer span of monitoring it is not possible to assess the significance of this increase. Propylparaben

was detected at a concentration of 2.588 µg/L - in contrast, other studies of Mediterranean coastal water have found maximum propyl paraben levels of 0.0084 µg/L¹⁷.

No parameters were detected throughout the year of sampling in transitional waters (Table 10), indicating that these waters were more influenced by coastal water than surface run off (represented by inland water and additional testing sites in this study). A total of 42 Tentatively Identified Compounds were detected in the second year of sampling (Table 13), compared to only 17 in year 1. The predominant influence of coastal water may explain this trend, though many compounds (61%) are not shared between the two water categories.

Monitoring results are presented in Table 10

4.6 Additional Testing sites

Additional Testing sites (Table 15) showed similar pattern of contamination in year 2 as year 1. Like in year 1, it contained the highest number of detected compounds: a total of 32 compounds were recorded across Additional Sample sites in year 2 versus 25 compounds in year 1 (Table 17 and Table 18). However, the average number of compounds detected at each site ranged from 2-8 in year 1 (average 5), compared to 7-15 (average 10) in year 2. Moreover, there were more incidences of compounds above EQS in year 2 versus year 1.

Ammonium nitrogen, sulphates, arsenic, and nickel were detected in all sites at least once. With the exception of sulphates, levels were higher in year 2 than year 1 though without more regular monitoring this cannot be interpreted as significant.

Similar to year 1, ammonium nitrogen was found at levels much higher than its recommended EQS of 15 µg/L¹⁸ at all sample stations at some point. At Wied il-Mielaħ they were found at an average level of 27996.5µg/L in Q1. However, like at Inland Surface sites, there was evidence of Ammonia 'pulses', for example: average levels at Wied il- Mielaħ in Q4 had fallen to 10.55 µg/L. Sulphates were found at particularly elevated levels at Marsa Storm water drain, Burmarrad and Wied il-Magħluq. Lead was found at almost all sites (except Wied il-Mielaħ) at concentrations higher than in year 1 (average of 3.5 µg/L versus 1.3 µg/L in year 1), and all higher than the proposed EQS (of 1.2µg/L¹⁹).

Beta-oestradiol was not found in the first year of sampling, but detected at three sample sites in year 2. Moreover, the values were considerably higher than SCHEER's AA quality standard of

¹⁷ Fenni, F., Sunyer-Caldú, A., Mansour, H. B., & Diaz-Cruz, M. S. (2022). Contaminants of emerging concern in marine areas: first evidence of UV filters and paraben preservatives in seawater and sediment on the eastern coast of Tunisia. *Environmental Pollution*, 309, 119749.

¹⁸

<https://support.esdat.net/Environmental%20Standards/uk/landfill%20directive%20appendix%208%20selected%20water%20quality%20standards.pdf>

¹⁹ https://www.monitoolproject.eu/images/Publications/Action_1_EQS_adaptation_for_priority_metals_Pb_Ni_Cd.pdf

0.18ng/L²⁰. EDTA was found at its highest recorded concentration of any site at Qoton where an average of 12500 µg/L was detected in Q4, this is more than 200 times greater than the highest typical value in receiving waters of the EU (see 4.1).

Glyphosate was detected at levels in excess of the recommended EQS (for non-drinking water²¹) of 0.1µg/L at Wied Qoton and Wied il- Mielah. Burmarrad contained the prohibited plant protection products DDT-2,4, and Aldrin – both of which were banned globally for agricultural use by the Stockholm Convention in 2001. These compounds were detected at concentrations of 0.126 µg/L and 0.537 µg/L (average, Q1) compared to an EQS of 0.025 and 0.1 µg/L respectively²².

Other prohibited PPPs, namely chlordecone (banned globally by the Stockholm Convention in 2001), chlorpyrifos methyl (banned from the EU's PPP market since 2020) and cyanazine (withdrawn from permitted active substances in 2002) were detected in Marsa Stormwater drain. Chlorpyrifos methyl was found at concentrations of 2.39µg/L (average, Q1) and cyanazine at 4.60 µg/L compared to EQSs of 0.03²³ and 2²⁴ µg/L respectively.

The only other PPP found at elevated levels was Diuron, found at Wied il-Mielah at average concentrations of 0.294 µg/L compared to an EQS of 0.27 µg/L²⁵ (it was also found at Wied il-Qoton in Q4 though at an average concentration of 0.186 µg/L).

Like Inland Surface water sites, Poly-fluoroalkylated substances (PFAS) (either PFOS or PFOA) were detected at all Additional Surface water sites except il-Maghluq – again, far below EQS but the ubiquity of these so-called 'forever chemicals' is concerning.

The frequently detected compounds carbamazepine, acesulfame and methyl-benzotriazole were all detected at additional surface sites, though always below EQS. Like in year 1, chloroform was also detected in all additional surface sites, though again below EQS (Table 20).

Monitoring results are presented in Table 15

As with other water sources, there were more Tentatively Identified Compounds detected in year 2 (n= 64) compared to year 1 (n=22), though none at levels greater than their EQS. 49% of Tentatively Identified Compounds found in Inland surface waters were also detected at additional Surface waters, including propylparaben at a concentration of 3.767 µg/L and neodecanoic acid (ethenyl ester) at 9.17 µg/L (Table 16).

²⁰ https://health.ec.europa.eu/document/download/a64bc6a9-eeef-4055-803a-674d2502857a_en?filename=scheer_o_023.pdf

²¹ https://health.ec.europa.eu/document/download/7ace1a87-dd0a-4a78-809e-5454aacce2a8_en?filename=scheer_o_049.pdf

²² <https://eur-lex.europa.eu/eli/dir/2008/105/oj/eng>

²³

https://assets.publishing.service.gov.uk/media/65e5bc623f69457ff1036008/Chlorpyrifos_RME_Additional_information_26_Feb_2024.pdf

²⁴ https://atlanticbca.com/wp-content/uploads/2022/07/Ecological_Tier_I_Environmental_Quality_Standards_for_Surface_Water.pdf

²⁵ https://health.ec.europa.eu/publications/scheer-scientific-opinion-draft-environmental-quality-standards-priority-substances-under-water-4_en

5.0 Summary

There are some consistent trends between year 1 and year 2 of sampling, namely the prevalence of five compounds across inland waters:

- Methyl-benzotriazole, found in all inland waters (ground, storm, new, inland surface and additional sample sites)
- acesulpham K, found in all inland waters except New water
- benzotriazole, found in all inland waters except groundwater
- Sulfamethoxazole, found in all inland waters except stormwater
- carbamazepine, found in groundwater, stormwater, new water and additional surface water sampling sites

Table 4 summarises the number of sites contaminated with each of these pollutants.

Table 4 Number of sites contaminated with the most widespread pollutants in year 1 and 2 of sampling

	<i>Acesulpham K</i>		<i>Carbamazepine</i>		<i>Benzotriazole</i>		<i>Methyl-benzotriazole</i>		<i>Sulfa-methoxazole</i>	
Year	1	2	1	2	1	2	1	2	1	2
G	1	1	1	1	3	1	1	1	1	1
A	7	7	2	3	5	7	7	7	1	1
I	3	3	0	0	3	2	3	3	1	1
S	1	1	1	1	1	1	1	1	1	0
N	0	0	0	1	1	0	1	1	0	1
C	0	0	0	0	0	0	0	0	0	0
T	0	0	0	0	0	0	0	0	0	0
Total	12	11	4	6	13	11	13	13	4	4
Freq.	50%	46%	16.6%	25%	54%	46%	54%	54%	16.6%	16.6%

Key: G= groundwater, A = Additional sample sites, I = Inland surface waters, S= Stormwater, N = New water, C = Coastal water, T = Transitional water. Number of sites sampled = 24

The ubiquity of these compounds has been recorded in other monitoring projects. In the C.10 survey of the sewerage network²⁶ which sampled wastewater at 22 sites, acesulpham and benzotriazole were the most frequently detected contaminants, found at 66% and 52% of sites respectively. Acesulpham and carbamezapine were highlighted in LIFE IP Action A6 (Optimising the

²⁶ Service Tender For The Analytical Testing & Evaluation Of Wastewater Quality In The Maltese Islands For The Water Services Corporation (Reference Number No. WSC/T/125/2021)

implementation of the 2nd RBMP in the Malta River Basin District) (Ecoserv, 2020) which noted that “carbamezapine was the pharmaceutical consumed locally with the highest order of magnitude, detected in circa 25% of boreholes surveyed during surveillance monitoring”.

This report does not generate the evidence required to confirm the movement of any of these compounds across water types. However, given that they are in groundwater, it follows that they would be found in new water and stormwater, via the public water supply - of which 35% is from groundwater in Malta²⁷.

While these compounds were widespread, there was not a wide range of other contaminants found across water bodies. Only 36 of the 137 compounds tested for (26%) were detected in year 2 of sampling (33, or 24%, in year 1) (Table 17 and Table 18). This supports a strategic, focussed monitoring in the future. Though monitoring of some chemicals (i.e. Priority Compounds) is obligatory, the monitoring of other chemicals should be tailored to the local situation in order to identify a short list of the most locally important contaminants. Whilst such a short list can consider the toxicity of the compounds, the primary determinant should be their abundance since all of the most frequent pollutants have been recorded at levels several orders of magnitude lower than their EQS – and some (e.g. acesulpham) don’t have an EQS at all.

Universally, more Tentatively Identified compounds were detected in year 2 of sampling compared to year 1. Without a larger data set the significance of this cannot be interpreted. In terms of movement of TICs between water types, while the frequency of compounds shared between water types has been noted (e.g. inland surface and additional sites, transitional and coastal) this in itself is not compelling evidence that there is movement of compounds between waters.

²⁷ <https://energywateragency.gov.mt/wp-content/uploads/2023/11/GREEN-PAPER.pdf>

Annex.1 Test parameters, methods, LOD and LOQ

Groundwater, Transitional, Stormwater, Coastal, and New Water samples are tested for CEC. Please refer to Table 1

Inland Surface Waters and Additional Monitoring Stations are tested for CEC and Indicators of Diffuse Pollution. Refer to Table 1

The testing laboratories QA procedure is UNI CEI EN ISO IEC 17025:2017.

Those parameters which are not in line with the LoDs/LoQs specified in Table 2 of Annex 2 of the Tender are in line with the adequate performance levels as per Schedule XI(B) of S.L. 549.100 (Minimum Performance Criteria for Methods of Analysis). Monitoring is carried out by ensuring to use best available techniques not entailing excessive costs or damage to equipment.

Table 5 Test Parameters, methods, LOD and LOQ

Parameter	Method	CEC or Diffuse	Limit of Detection (µg/L)	Groundwater LOQ (µg/L)	Surface water LOQ (µg/L)	Seawater LOQ (µg/L)
Aniline	EPA 3510C 1996 + EPA 8270E 2018	CEC	10	0.02	0.02	0.02
Fipronil	EPA 3510C 1996 + EPA 8270E 2018	CEC	0.05	0.0025	0.0025	0.0025
Chlorpyrifos-methyl	EPA 3510C 1996 + EPA 8270E 2018	CEC	0.01	0.0025	0.0025	0.0025
Deltamethrin	EPA 3510C 1996 + EPA 8270E 2018	CEC	100	0.0025	0.0025	0.0025
Triisobutyl phosphate	EPA 3510C 1996 + EPA 8270E 2018	CEC	0.01	0.025	0.025	0.025

Triphenyl phosphate	EPA 3510C 1996 + EPA 8270E 2018	CEC	100	0.25	0.25	0.25
Alachlor	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Atrazine	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Chlorfenvinphos	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.01	0.0025	0.0025	0.0025
Chlorpyrifos or Chlorpyrifos-ethyl	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.01	0.0025	0.0025	0.0025
Endrin	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Isodrin	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Aldrin	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Dieldrin	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
p,p'-DDD	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
p,p'-DDE	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
DDT Total o,p' + p,p'	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
p,p'-DDT	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
o,p'-DDD	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
o,p'-DDE	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025

<i>o,p'-DDT</i>	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Chlordane Cis + Trans	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Cis-chlordane	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Trans-chlordane	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Endosulfan I + II	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
<i>Alpha-endosulfan (endosulphan I)</i>	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
<i>Beta-endosulfan (endosulphan II)</i>	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Endosulfan sulfate	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Hexachlorocyclohexanes alfa-HCH + beta-HCH + delta-HCH + gamma-HCH (Lindane)	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
<i>Alpha-hexachlorocyclohexane (alfa-HCH)</i>	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
<i>Beta-hexachlorocyclohexane(beta-HCH)</i>	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
<i>Delta hexachlorocyclohexane (delta-HCH)</i>	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
<i>Gamma-hexachlorocyclohexane (Lindane)</i>	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Methoxychlor o,p + p,p	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025

o,p-methoxychlor	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
p,p-methoxychlor	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Isoproturon	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.1	0.0025	0.0025	0.0025
Simazine	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.01	0.0025	0.0025	0.0025
Trifluralin	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Dicofol	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.0000048	0.0025	0.0025	0.0025
Quinoxifen	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.0023	0.0025	0.0025	0.0025
Aclonifen	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.0018	0.0025	0.0025	0.0025
Bifenox	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.00018	0.0025	0.0025	0.0025
Cybutryne	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.000375	0.0025	0.0025	0.0025
Cypermethrine	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.0000012	0.0025	0.0025	0.0025
Dichlorvos	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.000009	0.0025	0.0025	0.0025
Terbutryn	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Ametryn	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Azinphos-ethyl	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Azinphos-methyl	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025

Chlordecone	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Coumafos	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Crotoxyfos	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Cyanazine	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Desmetryn	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Diazinone	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Dimethoate	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Fenitrothion	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Fenthion	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
leptofos	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Malathion	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Methidation	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Metolachlor	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Mevinfos	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Mirex	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Molinate	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025

Parathion-ethyl	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Parathion-methyl	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Pendimethalin	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Phorate	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Prometryn	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Propazine	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Terbutylazine	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Tetrachlorvinphos	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Triazophos	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.0025	0.0025	0.0025
Heptachlor*	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.0000000040	0.0025	0.0025	0.0025
Heptachlor epoxide*	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.0000000040	0.0025	0.0025	0.0025
Brominated diphenylethers 2,4,4'-tribromodiphenylether + 2,2',4,4'- tetrabromodiphenylether + 2,2',4,4',5-pentabromodiphenylether + 2,2',4,4',6- pentabromodiphenylether + 2,2',4,4',5,5'- hexabromodiphenylether + 2,2',4,4',5,6'-hexabromodiphenylether	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.0001	0.5	0.5	0.5
Chloroalkanes, C10-13 Short Chain Chloro Paraffins (SCCP)	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.01	100	100	100

HexabromocycLOQodecane	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.00012	0.5	0.5	0.5
P- Chloro-M-Cresol or 4-Chloro-3-methylphenol (PCMC)	EPA 3510C 1996 + EPA 8270E 2018	CEC	0.5	0.02	0.02	0.02
DEHP or Di(2-ethylhexyl)phthalate or Bis(2-ethylhexyl)phthalate (BEHP)	EPA 3510C 1996 + EPA 8270E 2018	CEC	0.01	0.1	0.1	0.1
Diethyl phthalate (DEP)	EPA 3510C 1996 + EPA 8270E 2018	CEC	5	0.1	0.1	0.1
<i>Polyaromatic hydrocarbons</i> <i>Benzo(b)fluoranthene + Benzo(k)fluoranthene +</i> <i>Benzo(a)pyrene + Benzo(g,h,i)perylene + Indeno(1,2,3-</i> <i>cd)pyrene</i>	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002
Anthracene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002
Fluoranthene (PHC)	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002
Hexachlorobenzene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.001	0.001	0.001
Naphthalene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002
Pentachlorobenzene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.01	0.01	0.01
Pentachlorophenol	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.02	0.02	0.02
Benzo(a)pyrene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002
Benzo(b)fluoranthene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002
Benzo(ghi)perylene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002

Benzo(k)fluoranthene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002
Indeno(1,2,3-cd)pyrene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.002	0.002	0.002
Trichlorobenzenes 1,2,4-Trichlorobenzene	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.001	0.02	0.02	0.02
Di(2-ethylhexyl)phthalate	EPA 3510C 1996 + EPA 8270E 2018	Diffuse	0.01	0.1	0.1	0.1
1,2,4-trimethyl benzene	EPA 5030C + EPA 8260D	CEC	3	1	1	5
Cyclohexanone	EPA 5030C + EPA 8260D	CEC	100	25	25	250
Tert-butyl methyl ether; MTBE; 2- methoxy-2- methylpropane	EPA 5030C + EPA 8260D	CEC	0.1-2	1	1	10
Styrene	EPA 5030C + EPA 8260D	CEC	2	1	1	10
Benzene	EPA 5030C + EPA 8260D	Diffuse	0.01	0.1	0.1	1
Carbon tetrachloride	EPA 5030C + EPA 8260D	Diffuse	0.01	0.1	0.1	1
1,2- Dichloroethane	EPA 5030C + EPA 8260D	Diffuse	0.001	0.1	0.1	1
Dichloromethane	EPA 5030C + EPA 8260D	Diffuse	0.01	0.1	0.1	1
Hexachlorobutadiene	EPA 5030C + EPA 8260D	Diffuse	0.01	0.01	0.01	0.1
Tetrachloroethylene	EPA 5030C + EPA 8260D	Diffuse	0.01	0.1	0.1	1
Trichloroethylene	EPA 5030C + EPA 8260D	Diffuse	0.01	0.1	0.1	1
Trichloromethane	EPA 5030C + EPA 8260D	Diffuse	0.01	0.01	0.01	0.1
Azoxystrobin	MP 351	CEC	0.01	0.05	0.05	0.05
Dimethomorph	MP 351	CEC	0.01	0.05	0.05	0.05
Propamocarb	MP 351	CEC	0.03	0.05	0.05	0.09
Imidacloprid	MP 351	CEC	0.01	0.05	0.05	0.5
Diuron	MP 351	Diffuse	0.1	0.05	0.05	0.5
Famphur	MP 351	Diffuse	0.01	0.05	0.05	0.5
Fensulfothion	MP 351	Diffuse	0.01	0.05	0.05	0.5
Acesulpham k	MP 401	CEC	0.025	0.04	0.04	0.1 / 0.4 ¹

Carbamazepine	MP 401	CEC	0.05	0.02	0.02	0.15 / 0.25 ¹
Beta-estradiol (50-28-2)	MP 401	CEC	0.001	0.05	0.05	0.5
Atenolol	MP 401	CEC	0.001	0.04	0.04	0.4
Sulfamethoxazole	MP 401	CEC	0.01	0.02	0.02	0.03 / 0.5 ¹
Amoxicillin	MP 401	CEC	0.3	1	1	1 / 10 ¹
Methylbenzotriazole	MP 401	CEC	0.03	0.05	0.05	0.5
Benzotriazole	MP 401	CEC	0.03	0.05	0.05	0.5
Bisphenol A	MP 402	CEC	100	300	300	300
Nonylphenols Nonylphenol, 4- (branched) (CAS: 84852-15-3)	MP 402	Diffuse	0.01	0.05	0.05	0.5
4-nonylphenol (CAS: 104-40-5)	MP 402	Diffuse	0.01	0.05	0.05	0.5
Octylphenols Octylphenol, 4-tert- (CAS: 140-66-9) or 4-(1,1',3,3'-TetraMethylButhyl)Phenol	MP 402	Diffuse	0.01	0.05	0.05	0.5
N-methyl-2-pyrrolidone	MP 403	CEC	100	10000	10000	10000
Propan-1,2-diol	MP 403	CEC	10	5000	5000	5000
Glyphosate	MP 298	CEC	0.1	0.05	0.05	0.3
EDTA	UNI EN ISO 16588:2006	CEC	500	1500	1500	1500
Cadmium	UNI EN ISO 17294-2:2016	Diffuse	0.01	0.1	0.1	2
Lead	UNI EN ISO 17294-2:2016	Diffuse	0.01	1	1	3
Mercury and its compound as Total Mercury Mercury	UNI EN ISO 17294-2:2016	Diffuse	0.05	0.1	0.1	1
Nickel and its compounds as Total Nickel Nickel	UNI EN ISO 17294-2:2016	Diffuse	0.1	1	1	3
Arsenic	UNI EN ISO 17294-2:2016	Diffuse	0.05	1	1	3

Dioxins and dioxin-like compounds HRMS OctaChloroDibenzoDioxin (OCDD) + OctaChloroDibenzoFuran (OCDF) + 1,2,3,4,6,7,8- HeptaChloroDibenzoFuran (HpCDF) + 1,2,3,4,7,8,9- HeptaChloroDibenzoFuran (HpCDF) + 1,2,3,4,7,8- HexaChloroDibenzoDioxin (HxCDD) + 1,2,3,4,7,8- HexaChloroDibenzoFuran (HxCDF) + 1,2,3,6,7,8- HexaChloroDibenzoDioxin (HxCDD) + 1,2,3,6,7,8- HexaChloroDibenzoFuran (HxCDF) + 1,2,3,7,8,9- HexaChloroDibenzoDioxin (HxCDD) + 1,2,3,7,8,9- HexaChloroDibenzoFuran (HxCDF) + 1,2,3,7,8- PentaChloroDibenzoDioxin (PeCDD) + 1,2,3,7,8- PentaChloroDibenzoFuran (PeCDF) + 2,3,4,6,7,8- HexaChloroDibenzoFuran (HxCDF) + 2,3,4,7,8- PentaChloroDibenzoFuran (PeCDF) + 2,3,7,8- TetraChloroDibenzoDioxin (TCDD) + 2,3,7,8- TetraChloroDibenzoFuran (TCDF) = Sum PCDD, PCDF (Conversion WHO-TEF) + PCB 105 + PCB 114 + PCB 118 + PCB 123 + PCB 126 + PCB 156 + PCB 157 + PCB 167 + PCB 169 + PCB 189 + PCB 77 + PCB 81 = Total PCB (Conversion WHO-TEF)	Dioxins/Furans EPA 1613B 1994 + PCB Dioxin Like EPA 1668C 2010	Diffuse	0.0065 µgTEQ/L	SUM of Dioxins/Furans 0.000000694 µgTEQ/L SUM of PCB Dioxin Like 0.000000028 µgTEQ/L	SUM of Dioxins/Furans 0.000000694 µgTEQ/L SUM of PCB Dioxin Like 0.000000028 µgTEQ/L	SUM of Dioxins/Furans 0.000000694 µgTEQ/L SUM of PCB Dioxin Like 0.000000028 µgTEQ/L
Ammonium (Un-ionized ammonia (NH ₃))	UNI EN ISO 11732:2005	Diffuse	2.0	6.4	6.4	64
Chloride	UNI EN ISO 10304-1:2009	Diffuse	500	2500	2500	25000
Sulphate	UNI EN ISO 10304-1:2009	Diffuse	500	2500	2500	25000
Tributyltin compounds MonoButhilTin (MBT) + DiButhilTin (DBT) + TriButhilTin (TBT) = Sum Organotin Compounds	UNI EN ISO 17353:2006	Diffuse	0.002	0.01	0.01	0.1

PFOA and its compounds include Perfluorooctane sulfonic acid and its derivatives (PFOS) 4:2 Fluorotelomero solfonato (4:2 FTS) + 6:2 Fluorotelomero solfonato (6:2 FTS) + 8:2 Fluorotelomero solfonato (8:2 FTS) + Acido 11-cloroeicosafluoro-3-oxaundecane-1-solfonico (11Cl-PF3OudS) + Acido 2H-perfluoro-2-decanoico (8:2 FTUA) + Acido 2H-perfluoro-2-ottanoico (6:2 FTUA) + Acido 2-perfluorodecil etanico (FDEA) + Acido 2-perfluoroesil-etanico (FHEA) + Acido 2-perfluoroottilico etanico (FOEA) + Acido 4,8-diossa-3H-perfluorononanoico (DONA) + Acido 9-cloroesadecafluoro-3-ossanone-1-solfonico (9Cl-PF3ONS) + Acido dimero ossido esafluoropropilenico (HFPO-DA) + Acido N ((eptadecafluoroottil) solfonil) -N-metil (Me-NFOSAA) + Acido Perfluorobutanesolfonico (PFBS) + Acido Perfluorobutanoico (PFBA) + Acido perfluorodecanesolfonico (PFDS) + Acido Perfluorodecanoico (PFDA) + Acido perfluorododecanoico (PFDoA) + Acido Perfluoroeptanoico (PFHpA) + Acido perfluoroesanoico (PFHxA) + Acido Perfluorononanoico (PFNA) + Acido Perfluorononansolfonico (PFNS) + Acido Perfluoroottanoico (PFOA) + Acido Perfluoropentanoico (PFPeA) + Acido Perfluoropentansolfonico (PFPeS) + Acido perfluorotetradecanoico (PFTA) + Acido perfluorotridecanoico (PFTTrDA) + Acido Perfluoroundecanoico (PFUnA) + Acido propanoico 3-perfluoroottile (PFHpPA) + N-etil-N – ((eptadecafluoroottil) solfonil) – acido (Et-NFOSAA) + Perfluoroeptanosulfonato (PFHpS) +	ASTM D7979-20	Diffuse	0.0000195	0.002	0.002	0.02
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Perfluoroesansulfonato (PFHxS) + Perfluoroottano sulfonammide (PFOSA) + Perfluoroottansulfonato (PFOS)						
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* In Table 2 of Annex 2 of the Tender document, the LOQ given for “Helptachlor & heptachlor epoxide” is 1.5×10^9 . The testing laboratory’s LOQ is 4.0×10^9 – provided as separate results

¹ Due to limitations imposed by the analysis method, the LOQ for these chemicals in seawater were increased. This was agreed by ERA

Annex 2 Chemicals tested for within 'Tentatively Identified Compounds' Screening Assay

UnTarget Compound List	
Name	CAS#
1(3H)-Isobenzofuranone	87-41-2
1,1,1,2-Tetrachloroethane	630-20-6
1,1,2,2-Tetrachloroethane	79-34-5
1,1,2-Trichloroethane	79-00-5
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4
1,2,3,4,6,7,8-Heptachlorodibenzo-p-diox	35822-46-9
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4
1,2,3-Trichlorobenzene	87-61-6
1,2,3-Trichloropropane	96-18-4
1,2,4,5-Tetrachlorobenzene	95-94-3
1,2,4-Trichlorobenzene	120-82-1
1,2,4-Trimethylbenzene	95-63-6
1,2-Dibromoethane	106-93-4
1,2-Dichlorobenzene	95-50-1
1,2-Dichloropropane	78-87-5
1,3,5-Triallyl-1,3,5-triazine-2,4,6	1025-15-6
1,3,5-Trichlorobenzene	108-70-3
1,3,5-Trimethylbenzene	108-67-8
1,3,5-Trinitrobenzene	99-35-4
1,3-Dichlorobenzene	541-73-1
1,3-Dichloropropane	142-28-9
1,4-Dichlorobenzene	106-46-7
1,4-Dioxane	123-91-1
1,4-Naphthoquinone	130-15-4

Name	CAS#
Epichlorhydrin	106-89-8
EPN	2104-64-5
Epoxiconazole	133855-98-8
Epsilon-HCH	6108-10-7
EPTC	759-94-4
Erbon	136-25-4
Esfenvalerate	66230-04-4
Esprocarb	85785-20-2
Estazolam	29975-16-4
Etaconazole	71245-23-3
Ethalfuralin	55283-68-6
Ethiofencarb	29973-13-5
Ethiolate	2941-55-1
Ethion	563-12-2
Ethofumesate	26225-79-6
Ethoprophos	13194-48-4
Ethoxyquin	91-53-2
Ethyl methanesulfonate	62-50-0
Ethylbenzene	100-41-4
Ethylene thiourea	96-45-7
Ethylparaben	120-47-8
Etioazole	153233-91-1
Etridiazole	2593-15-9
Etrimfos	38260-54-7
Eugenol	97-53-0
Famoxadone	131807-57-3
Famphur	52-85-7
Farnesol	4602-84-0

1,6-Hexanediol diacrylate	13048-33-4
17a-Ethynylestradiol	57-63-6
1-Decanol	112-30-1
1-Ethyl-2-pyrrolidone	2687-91-4
1H-Benzotriazole	95-14-7
1H-Benzotriazole-5-methyl	136-85-6
1-Isocyanato-3-methyl-Benzene	621-29-4
1-Naphthylamine	134-32-7
2-(1-naphthyl)acetamide	86-86-2
2-(2-Butoxyethoxy)ethyl thiocyanate	112-56-1
2(3H)-Benzothiazolone	934-34-9
2-(Octylthio)ethanol	3547-33-9
2,2',3,3',4,4',5,5',6-nonachlorobiphenyl  ⑨	40186-72-9
2,2',3,3',4,4',5-Heptachlorobiphenyl	35065-30-6
2,2',3,4,4',5,5'-Heptachlorobiphenyl	35065-29-3
2,2',3,4,4',5',6-Heptachlorobiphenyl	52663-69-1
2,2',3,4,4',5'-Hexachlorobiphenyl	35065-28-2
2,2',3,4',5,5',6-Heptachlorobiphenyl	52663-68-0
2,2',3,4,5,5'-Hexachlorobiphenyl	52712-04-6
2,2',3,4,5'-Pentachlorobiphenyl	38380-02-8
2,2',3,5,5',6-Hexachlorobiphenyl	52663-63-5
2,2',3,5'-Tetrachlorobiphenyl	41464-39-5
2,2',4,4',5,5'-Hexabromodiphenyl	68631-49-2
2,2',4,4',5,5'-Hexachlorobiphenyl	35065-27-1
2,2',4,4',5,6'-Hexabromodiphenyl ether	207122-15-4
2,2',4,4',5-Pentabromodiphenyl ether	60348-60-9
2,2',4,4',6-Pentabromodiphenyl ether	189084-64-8

Fenarimol	60168-88-9
Fenazaflor	14255-88-0
Fenazaquin	120928-09-8
Fenbuconazole	11961-10-0
Fenchlorphos	299-84-3
Fenfuram	24691-80-3
Fenhexamide	126833-17-8
Fenitrothion	122-14-5
Fenobucarb	3766-81-2
Fenoprop	93-72-1
Fenoprop methyl ester	4841-20-7
Fenoxaprop-ethyl	82110-72-3
Fenoxycarb	79127-80-3
Fenpiclonil	74738-17-3
Fenpropathrin	64257-84-7
Fenpropidin	67306-00-7
Fenpropimorph	67306-03-0
Fenson	80-38-6
Fensulfothion	115-90-2
Fenthion	55-38-9
Fenthion sulfoxide	000000-00-4
Fenuron	101-42-8
Fenvalerate I	51630-58-1
Fenvalerate II	51630-58-1
Fipronil	120068-37-3
Flamprop-isopropyl	52756-22-6
Flamprop-methyl	52756-25-9

2,2',4,5,5'-Pentachlorobiphenyl	37680-73-2
2,2',5,5'-Tetrachlorobiphenyl	35693-99-3
2,2',5-Trichlorobiphenyl	37680-65-2
2,3,3',4',6-Pentachlorobiphenyl	38380-03-9
2,3',4,4'-Tetrachlorobiphenyl	32598-10-0
2,3,4,5-Tetrachlorophenol	4901-51-3
2,3,4,6-Tetrachlorophenol	58-90-2
2,3,4-Trichloroanisole	54135-80-7
2,3,5,6-Tetrachloroaniline	3481-20-7
2,3,5,6-Tetrachlorophenol	935-95-5
2,3,5,6-Tetrachlorothioanisole	68671-90-9
2,3,5-Trichlorophenol	933-78-8
2,3,5-Trimethacarb	2655-15-4
2,3,5-Trimethylphenyl methyl carbamate	2655-15-4
2,3,6-TBA	50-31-7
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6
2,3-Dichlorobiphenyl	16605-91-7
2,3-Dimethylphenol	526-75-0
2,4,4'-Tribromodiphenyl ether	41318-75-6
2,4,5-T methyl ester	1928-37-6
2,4',5-Trichlorobiphenyl	16606-02-3
2,4,5-Trichlorophenol	95-95-4
2,4,6-Triallyloxyl-1,3,5-triazine	101-37-1
2,4,6-Tribromoanisole	607-99-8
2,4,6-Tribromophenol	118-79-6

Flonicamid	158062-67-0
Florfenicol	73231-34-2
Fluazifop-P-butyl	79241-46-6
Fluazinam	79622-59-6
Flubenzimine	37893-02-0
Fluchloralin	33245-39-5
Flucythrinate I	70124-77-5
Flucythrinate II	70124-77-5
Fludioxonil	131341-86-1
Flufenacet	142459-58-3
Flumetralin	62924-70-3
Flumioxazin	103361-09-7
Fluometuron	2164-17-2
Fluopicolide	239110-15-7
Fluoranthene	206-44-0
Fluorene	86-73-7
Fluorodifen	15457-05-3
Fluotrimazole	31251-03-3
Fluoxastrobin	361377-29-9
Fluoxetine (Prozac)	54910-89-3
Fluquinconazole	136426-54-5
Flurbiprofen	5104-49-4
Flurenol-butyl ester	2314-09-2
Flurenol-methylester	1216-44-0
Fluridone	59756-60-4
Flurochloridone I	61213-25-0

2,4,6-Trichloroanisole	87-40-1
2,4,6-trichlorophenol	88-06-2
2,4,7,9-Tetramethyl-5-decyne-4,7-diol	126-86-3
2,4-D	94-75-7
2,4-D methyl ester	1928-38-7
2,4-D sec-butyl ester	000000-00-3
2,4-DB methyl ester	18625-12-2
2,4-Dichlorobenzamide	2447-79-2
2,4-Dichlorophenol	120-83-2
2,4-Dichlorophenyl benzenesulfonate	97-16-5
2,4-Dimethylaniline	95-68-1
2,4-Dimethylphenol	105-67-9
2,4-Dinitrophenol	51-28-5
2,4-Dinitrotoluene	121-14-2
2,4-Di-tert-butylphenol	96-76-4
2,6-Dichlorobenzamide	2008-58-4
2,6-Dichlorobenzonitrile	1194-65-6
2,6-Dichlorophenol	87-65-0
2,6-Difluorobenzamide	18063-03-1
2,6-Dimethylaniline	87-62-7
2,6-Dimethylphenol	576-26-1
2,6-Dinitrotoluene	606-20-2
2,6-Di-tert-butylphenol	128-39-2
2-[3-Chlorophenoxy]propionamide	5825-87-6
2-Acetylaminofluorene	53-96-3
2-Chloro-4-nitrotoluene	121-86-8
2-Chloro-5-nitrotoluene	13290-74-9
2-Chloro-6-nitrotoluene	83-42-1
2-Chlorobiphenyl	2051-60-7
2-Chloronaphthalene	91-58-7

Flurochloridone II	61213-25-0
Fluroxypyr-1-methylheptyl ester	81406-37-3
Flurtamone	96525-23-4
Flusilazole	85509-19-9
Flutolanil	66332-96-5
Flutriafol	76674-21-0
Fluvalinate-tau-I	10285-10-6
Fluvalinate-tau-II	10285-10-6
Folione	111-12-6
Folpet	133-07-3
Fonofos	944-22-9
Formothion	2540-82-1
Fosthiazate	98886-44-3
Fuberidazole	3878-19-1
Furalaxyl	57646-30-7
Furathiocarb	65907-30-4
Furfural	98-01-1
Furfuryl alcohol	98-00-0
Furmecyclox	60568-05-0
Gabapentin	60142-96-3
gamma-BHC (lindane)	58-89-9
Gemfibrozil	25812-30-0
Geraniol	106-24-1
Glutaraldehyde	111-30-8
Griseofulvin	126-07-8
Heptachlor	76-44-8
Heptachlor epoxide -isomer B	1024-57-3
Heptachlor exo-epoxide isomer B	28044-83-9
Heptenophos	23560-59-0
Heroin Hydrochloride	1502-95-0

2-Chlorophenol	95-57-8
2-Chlorophenyl isocyanate	3320-83-0
2-Chlorotoluene	95-49-8
2-Ethyl-1,3-hexanediol	94-96-2
2-Ethyl-4-methyl-1,3-dioxolane	4359-46-0
2-Ethyl-5,5-dimethyl-1,3-dioxane	768-58-1
2-Ethylhexanoic acid	149-57-5
2-Ethylhexyl diphenyl phosphate	1241-94-7
2-Ethylhexyl salicylate	118-60-5
2H-Indol-2-one, 1,3-dihydro	59-48-3
2-Hydroxyestradiol	362-05-0
2-Methoxynaphthalene	93-04-9
2-Methyl-4,6-dinitrophenol	534-52-1
2-Methylnaphthalene	91-57-6
2-Naphthylamine	91-59-8
2-Nitroaniline	88-74-4
2-Nitrophenol	88-75-5
2-Octyl-4-isothiazolin-3-one	26530-20-1
2-Phenoxypropionic acid	940-31-8
2-Picoline	109-06-8
2-tert-Butylcyclohexanone	1728-46-7
3,3'-Dichlorobenzidine	91-94-1
3,3'-Dimethylbenzidine	119-93-7
3,4,5-Trimethacarb	2686-99-9
3,4-Dichloroaniline	95-76-1
3,5-Dichloroaniline	626-43-7
3,5-Dimethylphenol	108-68-9
3-Chloro-1,2-dibromopropane	96-12-8
3-Chloroaniline	108-42-9
3-Chlorophenol	108-43-0
3-Hydroxycarbofuran	16655-82-6
3-Iodo-2-propynyl butylcarbamate	55406-53-6
3-Methylcholanthrene	56-49-5

Hexabromobenzene	87-82-1
Hexachlorobenzene	118-74-1
Hexachlorobutadiene	87-68-3
Hexachlorocyclopentadiene	77-47-4
Hexachloroethane	67-72-1
Hexachlorophene	70-30-4
Hexachloropropene	1888-71-7
Hexaconazole	79983-71-4
Hexadecane	544-76-3
Hexametapol	680-31-9
Hexazinone	51235-04-2
Hexestrol	84-16-2
Hexyl Cinnamaldehyde	101-86-0
Hexyl salicylate	6259-76-3
Homosalate	118-56-9
Hydroxy Citronellal	107-75-5
Ibuprofen	15687-27-1
Imazalil	35554-44-0
Imazapyr	81334-34-1
Imidacloprid	138261-41-3
Indane	496-11-7
Indene	95-13-6
Indeno[1,2,3-cd]pyrene	193-39-5
Indosulfuron methyl Na (breakdown product)	144550-36-7
Indoxacarb	173584-44-6
Ioxynil	1689-83-4
Ipconazole	125225-28-7
Iprobenfos	26087-47-8
Iprodione	36734-19-7
Irgarol	28159-98-0
Isazophos	42509-80-8
Isobenzan	297-78-9
Isobornyl thiocynoacetate	115-31-1

3-nitroaniline	99-09-2
4,4'-DDD	72-54-8
4,4'-DDE	72-55-9
4,4'-DDT	50-29-3
4,4'-Dichlorobenzophenone	90-98-2
4,4'-Methylenebis (phenyl isocyanate)	101-68-8
4-Aminobiphenyl	92-67-1
4-Bromophenyl phenyl ether	101-55-3
4-Chloro-2-methylphenol	1570-64-5
4-Chloro-2-nitrotoluene	89-59-8
4-Chloro-3-methylphenol	59-50-7
4-Chloro-3-nitrotoluene	89-60-1
4-Chloroaniline	106-47-8
4-Chlorophenol	106-48-9
4-Chlorophenyl phenyl ether	7005-72-3
4-Chlorotoluene	106-43-4
4-Methylanisole	104-93-8
4-Methyl-benzylidene camphor	36861-47-9
4-Nitroaniline	100-01-6
4-Nitrophenol	100-02-7
4-Nitroquinoline-1-oxide	56-57-5
4-Nonylphenol	104-40-5
4-Octyne	1942-45-6
4-tert-Butyltoluene	98-51-1
4-tert-Octylphenol	140-66-9
5,7-Dihydroxy-4'-methoxyisoflavone	491-80-5
5-Nitro-o-toluidine	99-55-8
7,12-Dimethylbenz[a]anthracene	57-97-6
9,10-Anthraquinone	84-65-1
a,a-Dimethylphenethylamine	122-09-8
acenaphthene	83-32-9

Isocarbamide	30979-48-7
Isodecyl diphenyl phosphate	29761-21-5
Isodrin	465-73-6
Isoeugenol	97-54-1
Isofenphos	25311-71-1
Isomethiozin	57052-04-7
Isophorone	78-59-1
Isoprocab	2631-40-5
Isopropalin	33820-53-0
Isopropyl myristate	110-27-0
Isopropyl palmitate	142-91-6
Isopropylbenzene	98-82-8
Isoprothiolane	50512-35-1
Isoproturon	34123-59-6
Isopyrazam	881685-58-1
Isosafrole	120-58-1
Isoxaben	82558-50-7
Isoxaflutole	141112-29-0
Isoxathion	18854-01-8
Jodfenphos	18181-70-9
Kepone	143-50-0
Ketoprofen	22071-15-4
Kinoprene	43588-37-4
Kresoxim-methyl	143390-89-0
Lenacil	2164-08-1
Leptophos	21609-90-5
Leptophos oxon	25006-32-0
Lidocaine	137-58-6
Lilial	80-54-6
Linalool	78-70-6
Linuron	330-55-2

Acenaphthylene	208-96-8
Acephate	30560-19-1
Acetamiprid	160430-64-8
Acetochlor	34256-82-1
Acetophenone	98-86-2
Acifluorfen methyl ester	050594-67-7
Aclonifen	74070-46-5
Alachlor	15972-60-8
Aldrin	309-00-2
Allidochlor	93-71-0
alpha Isomethyl Ionone	127-51-5
alpha-BHC (alpha-HCH)	319-84-6
Alprazolam	28981-97-7
Ambroxol	18683-91-5
Ametryn	834-12-8
Amidithion	919-76-6
Aminocarb	2032-59-9
Aminopyralid	150114-71-9
Amitraz	33089-61-1
Amitrole	61-82-5
Amyl Cinnamal	122-40-7
Amylcinnamyl Alcohol	101-85-9
Ancymidol	12771-68-5
Androstadienedione	897-06-3
Anilazine	101-05-3
Aniline	62-53-3
Anisyl Alcohol	105-13-5
Anthracene	120-12-7
Aramite	140-57-8

Malathion	121-75-5
Malathion-o-analog	1634-78-2
MCPA	94-74-6
MCPA methyl ester	2436-73-9
MCPB	94-81-5
MCPB methyl ester	57153-18-1
m-Cresol (3-methylphenol)	108-39-4
m-Dinitrobenzene	99-65-0
Mecarbam	2595-54-2
Mecoprop	93-65-2
Mecoprop methyl ester	23844-56-6
Mefenacet	73250-68-7
Mefluidide	53780-34-0
Menazon	78-57-9
Mephosfolan	950-10-7
Mepronil	55814-41-0
Mesosulfuron methyl (breakdown product)	208465-21-8
Metalaxyl	57837-19-1
Metalddehyde	108-62-3
Metamitron	41394-05-2
Metasystox thiol	919-86-8
Metazachlor	67129-08-2
Methabenzthiazuron	18691-97-9
Methacrifos	62610-77-9
Methamidophos	10265-92-6
Methapyrilene	91-80-5
Methaqualone	72-44-6
Methfuroxam	2873-17-8
Methidathion	950-37-8

Atraton	1610-17-9
Atrazine	1912-24-9
Atrazine desethyl	6190-65-4
Atrazine desisopropyl	1007-28-9
Azaconazole	60207-31-0
Azamethiphos	35575-96-3
Azinphos-ethyl	2642-71-9
Azinphos-methyl	86-50-0
Aziprotryne	4658-28-0
Azobenzene	103-33-3
Azoxystrobin	131860-33-8
Barban	101-27-9
Benalaxyl	71626-11-4
Benazolin-ethyl	25059-80-7
Bendiocarb	22781-23-2
Benfluralin	1861-40-1
Benfuracarb	82560-54-1
Benfuresate	68505-69-1
Benodanil	15310-01-7
Bentazone	25057-89-0
Bentazone methyl derivative	61592-45-8
Benthiocarb	28249-77-6
Benz[a]anthracene	56-55-3
Benzenepropanoic acid	501-52-0
Benzenesulfonamide	98-10-2
Benzenesulfonamide, 4-methyl-	70-55-3
Benzenesulfonamide, N-butyl	3622-84-2
Benzenesulfonanilide	1678-25-7
Benzo[a]pyrene	50-32-8

Methiocarb	2032-65-7
Methiocarb sulfone	2179-25-1
Methiocarb sulfoxide	2635-10-1
Methomyl	16752-77-5
Methoprene I	40596-69-8
Methoprene II	40596-69-8
Methoprotryne	841-06-5
Methoxychlor	72-43-5
Methyl Methacrylate	80-62-6
Methyl methanesulfonate	66-27-3
Methyl paraoxon	950-35-6
methyl Parathion	298-00-0
Methyl-1-naphthalene acetate	2876-78-0
Methylcyclohexanone	108-87-2
Methyldymron	42609-73-4
Methylparaben	99-76-3
Metobromuron	3060-89-7
Metolachlor	51218-45-2
Metolcarb	1129-41-5
Metribuzin	21087-64-9
Metronidazole	443-48-1
Mevinphos	7786-34-7
Midazolam	59467-70-8
Mirex	2385-85-5
Molinate	2212-67-1
Monalide	7287-36-7
Monocrotophos	6923-22-4
Monolinuron	1746-81-2
Monuron	150-68-5

Benzo[b]fluoranthene	205-99-2
Benzo[ghi]perylene	191-24-2
Benzo[k]fluoranthene	207-08-9
Benzonitrile	100-47-0
Benzophenone	119-61-9
Benzophenone-3	131-57-7
Benzoylprop ethyl	22212-55-1
Benzyl alcohol	100-51-6
Benzyl Benzoate	120-51-4
Benzyl Cinnamate	103-41-3
Benzyl laurate	140-25-0
Benzyl Salicylate	118-58-1
b-Estradiol	50-28-2
beta-BHC (beta-HCH)	319-85-7
Bifenazate	149877-41-8
Bifenox	42576-02-3
Bifenthrin	82657-04-3
Binapacryl	485-31-4
Bioallethrin	584-79-2
Bioallethrin S-cyclopentenyl isomer	28434-00-6
Bioresmethrin	10453-86-8
Biphenyl	92-52-4
Bis (4-chlorophenyl) sulfone	80-07-9
bis(2-chloroethoxy)methane	111-91-1
bis(2-chloroethyl) ether	111-44-4
bis(2-chloroisopropyl) ether	108-60-1
Bis(2-ethylhexyl) adipate	103-23-1
bis(2-ethylhexyl)phthalate (DEHP)	117-81-7
Bisphenol A	80-05-7
Bitertanol I	55179-31-2
Bitertanol II	55179-31-2
Bixafen	581809-46-3

Musk Xylene	81-15-2
m-Xylene	108-38-3
Myclobutanil	88671-89-0
N,N,N',N'-Tetraacetylenediamine	10543-57-4
N,N-Diethyl-m-toluamide	134-62-3
N,N-Dimethylaniline	121-69-7
N-1-Naphthylacetamide	000575-36-0
Nalorphine	62-67-9
Naphthalene	91-20-3
Naphthalic anhydride	81-84-5
Napropamide	15299-99-7
Naproxen	22204-53-1
n-Butylbenzene	104-51-8
Neodecanoic acid-ethenyl ester	51000-52-3
Nerolidol	7212-44-4
Nicotine	54-11-5
Nitralin	4726-14-1
Nitrapyrin	1929-82-4
Nitrazepam	146-22-5
Nitrobenzene	98-95-3
Nitrofen	1836-75-5
Nitrothal-isopropyl	10552-74-6
Nitroxynil	1689-89-0
N-Methyl-N-1-naphthyl acetamide	000000-00-2
N-nitrosodiethylamine	55-18-5
N-nitrosodimethylamine	62-75-9
N-nitrosodi-n-butylamine	924-16-3
N-nitrosodi-n-propylamine	621-64-7
N-nitrosodiphenylamine	86-30-6
N-nitrosomethylethylamine	10595-95-6
N-nitrosomorpholine (4-nitrosomorpholin	59-89-2
N-nitrosopiperidine (1-nitrosopiperidin	100-75-4

Boscalid	188425-85-6
Bromacil	314-40-9
Bromazepam	1812-30-2
Bromobenzene	108-86-1
Bromobutide	74712-19-9
Bromocyclen	1715-40-8
Bromodichloromethane	75-27-4
Bromoform	75-25-2
Bromophos	2104-96-3
Bromophos-ethyl	4824-78-6
Bromopropylate	18181-80-1
Bromoxynil	1689-84-5
Bromoxynil octanoic acid ester	1689-99-2
Bupirimate	41483-43-6
Buprofezin	69327-76-0
Butabarbital	125-40-6
Butachlor	23184-66-9
Butamifos	36335-67-8
Butanedioic acid, dimethyl ester	106-65-0
Butoxycarboxim	34681-23-7
Butralin	33629-47-9
butyl benzyl phthalate	85-68-7
Butylate	2008-41-5
Butylated hydroxyanisole	25013-16-5
Butylated hydroxytoluene	128-37-0
Butylparaben	94-26-8
Caffeine	58-08-2
Caprolactam	105-60-2
Captafol	2425-06-1
Captan	133-06-2

N-nitrosopyrrolidine (1-nitrosopyrrolid	930-55-2
Norflurazon	27314-13-2
N-Phenyl-1-naphthylamine	90-30-2
n-Propylbenzene	103-65-1
Nuarimol	63284-71-9
O,O,O-Triethyl phosphorothioate	126-68-1
o,p'-DDD	53-19-0
o,p'-DDE	3424-82-6
o,p'-DDT	789-02-6
o-Cresol (2-methylphenol)	95-48-7
Octachlorodibenzofuran	39001-02-0
Octachlorodibenzo-p-dioxin	3268-87-9
Octachlorostyrene	29082-74-4
Octocrylene	6197-30-4
Octyl-methoxycinnamate	5466-77-3
Ofurace	58810-48-3
Omethoate	1113-02-6
o-Phenylphenol	90-43-7
Oryzalin	19044-88-3
o-Terphenyl	84-15-1
o-Toluidine	95-53-4
Oxabetrinil	74782-23-3
Oxacyclohexadecan-2-one	106-02-5
Oxadiazon	19666-30-9
Oxadixyl	77732-09-3
Oxamyl	23135-22-0
Oxazepam	604-75-1
Oxycarboxin	5259-88-1
Oxychlordane	27304-13-8
Oxydemeton-methyl	301-12-2

Carbamazepine	298-46-4
Carbaryl	63-25-2
Carbazole	86-74-8
Carbetamide	16118-49-3
Carbofuran	1563-66-2
Carbofuran-3-keto	016709-30-1
Carbophenothion	786-19-6
Carbosulfan	55285-14-8
Carboxin	5234-68-4
Carfentrazone-ethyl	128639-02-1
Caryophyllene	87-44-5
Cedrol	77-53-2
Cedryl acetate	77-54-3
Chinomethionat	2439-01-2
Chloramben methyl ester	7286-84-2
Chloranocryl	2164-09-2
Chlorbenside	103-17-3
Chlorbromuron	13360-45-7
Chlorbufam	1967-16-4
Chlordimeform	6164-98-3
Chlorfenapyr	122453-73-0
Chlorfenethol	80-06-8
Chlorfenprop-methyl	14437-17-3
Chlorfenson	80-33-1
Chlorfenvinphos	470-90-6
Chlorflurecol-methyl ester	2536-31-4
Chlormefos	24934-91-6
Chlornitrofen	1836-77-7
Chlorobenzene	108-90-7
Chlorobenzilate	510-15-6
Chlorodibromomethane	124-48-1

Oxyfluorfen	42874-03-3
o-Xylene	95-47-6
p-(dimethylamino)azobenzene	60-11-7
Paclobutrazol	76738-62-0
Padimate O	21245-02-3
Paraldehyde	123-63-7
Paraoxon	311-45-5
Parathion (ethyl)	56-38-2
p-Benzoquinone	106-51-4
p-Cresol (4-methylphenol)	106-44-5
Pebulate	1114-71-2
Penconazole	66246-88-6
Pencycuron (breakdown product)	66063-05-6
Pendimethalin	40487-42-1
Pentachloroaniline	527-20-8
Pentachloroanisole	1825-21-4
Pentachlorobenzene	608-93-5
Pentachloroethane	76-01-7
Pentachloronitrobenzene	82-68-8
Pentachlorophenol	87-86-5
Pentanochlor	2307-68-8
Pentobarbital	76-74-4
Permethrin I	52645-53-1
Permethrin II	52645-53-1
Perthane	72-56-0
Pethidine	57-42-1
phenacetin	62-44-2
Phenamiphos	22224-92-6
Phenanthrene	85-01-8
Phenkapton	2275-14-1
Phenmedipham	13684-63-4

Chloroneb	2675-77-6
Chlorophacinone	3691-35-8
Chlorophene (2-Benzyl-4-chlorophenol)	120-32-1
Chloropropylate	5836-10-2
Chlorothalonil	1897-45-6
Chlorotoluron	15545-48-9
Chloroxlenol	88-04-0
Chlorpropham	101-21-3
Chlorpyrifos	2921-88-2
Chlorpyrifos Methyl	5598-13-0
Chlorthal-dimethyl	1861-32-1
Chlorthiamid	1918-13-4
Chlorthion	500-28-7
Chlorthiophos	60238-56-4
Chlorthiophos sulfone	025900-20-3
Chlorthiophos sulfoxide	029-21-5
Chlozolate	84332-86-5
Cholesterol	57-88-5
Chrysene	218-01-9
Cinnamal	104-55-2
Cinnamyl Alcohol	104-54-1
cis-1,3-Dichloropropylene	10061-01-5
cis-Chlordane	5103-71-9
Citral	5392-40-5
Citronellol	106-22-9
Clofibrate	637-07-0
Clomazone	81777-89-1
Clomipramine	303-49-1
Clonazepam	1622-61-3
Clopyralid	1702-17-6

Phenol	108-95-2
Phenoxyacetic acid	122-59-8
Phenthoate	2597-03-7
Phenylbutazone	50-33-9
phorate	298-02-2
Phosalone	2310-17-0
Phosfolan	947-02-4
Phosmet	732-11-6
Phosphamidon I	13171-21-6
Phosphamidon II	13171-21-6
Phthalide	27355-22-2
Picloram methyl ester	14143-55-6
Picolinafen	137641-05-5
Pindone	83-26-1
Pinoxaden	243973-20-8
Piperalin	3478-94-2
Piperonyl butoxide	51-03-6
Piperonylbutoxide	51-03-6
Piperophos	24151-93-7
Pirimicarb	23103-98-2
Pirimiphos-ethyl	23505-41-1
Pirimiphos-methyl	29232-93-7
p-Isopropyltoluene	99-87-6
Plifenat	21757-82-4
p-Nitrotoluene	99-99-0
p-Phenylenediamine	106-50-3
Prazepam	2955-38-6
Pretilachlor	51218-49-6
Primidone	125-33-7
Probenazole	27605-76-1

Cloquintocet-mexyl	99607-70-2
Clothianidin	210880-92-5
Cocaine	50-36-2
Codeine	76-57-3
Cotinine	486-56-6
Coumaphos	56-72-4
Coumarin	91-64-5
CPA	122-88-3
Cresyl diphenyl phosphate	26444-49-5
Crimidine	535-89-7
Crotamiton	483-63-6
Crotoxyphos	7700-17-6
Crufomate	299-86-5
Cyanazine	21725-46-2
Cyanofenphos	13067-93-1
Cyanophos	2636-26-2
Cycloate	1134-23-2
Cyclohexanone	108-94-1
Cycluron	2163-69-1
Cyfluthrin I	68359-37-5
Cyfluthrin II	68359-37-5
Cyfluthrin III	68359-37-5
Cyfluthrin IV	68359-37-5
Cyhalothrin I (lambda)	68085-85-8
Cymoxanil	57966-95-7
Cypermethrin I	52315-07-8
Cypermethrin II	52315-07-8

Prochloraz	67747-09-5
Procymidone	32809-16-8
Profenofos	41198-08-7
Profluralin	26399-36-0
Promecarb	2631-37-0
Prometon	1610-18-0
Prometryn	7287-19-6
Propachlor	1918-16-7
Propamocarb	24579-73-5
Propanil	709-98-8
Propargite	2312-35-8
Propazine	139-40-2
Propetamphos	31218-83-4
Propham	122-42-9
Propiconazole-I	60207-90-1
Propiconazole-II	60207-90-1
Propofol	2078-54-8
Propoxur	114-26-1
Propylparaben	94-13-3
Propyzamide	23950-58-5
Prosulfocarb	52888-80-9
Prothioconazole (breakdown product)	178928-70-6
Prothiofos	34643-46-4
Prothoate	2275-18-5
p-Xylene	106-42-3
Pymetrozin	123312-89-0
Pyracarbolid	24691-76-7

Cypermethrin III	52315-07-8
Cypermethrin IV	52315-07-8
Cyprazine	22936-86-3
Cyproconazole	113096-99-4
Cyprodinil	121552-61-2
Cyprofuram	69581-33-5
Cyromazine	66215-27-8
d-(cis-trans)-Phenothrin-I	26002-80-2
d-(cis-trans)-Phenothrin-II	26002-80-2
Dapson	80-08-0
Dazomet	533-74-4
Decachlorobiphenyl	2051-24-3
Decahydronaphthalene (cis)	493-01-6
Decahydronaphthalene (trans)	493-02-7
delta-BHC (delta-HCH)	319-86-8
Deltamethrin	52918-63-5
Demephion	8065-62-1
Demeton-S	126-75-0
Demeton-S-methylsulfon	17040-19-6
Desbromo-bromobutide	000000-00-1
Desimpramine	50-47-5
Desmedipham	13684-56-5
Desmetryn	1014-69-3
Dialifos	10311-84-9
Diallate	2303-16-4
Di-allate II	2303-16-4
Diallyl phthalate	131-17-9

Pyrazine	290-37-9
Pyrazon	1698-60-8
Pyrazophos	13457-18-6
Pyrazoxyfen	71561-11-0
Pyrene	129-00-0
Pyributicarb	88678-67-5
Pyridaben	96489-71-3
Pyridaphenthion	119-12-0
Pyridate	55512-33-9
Pyridine	110-86-1
Pyridinitril	1086-02-8
Pyrifenox I	731-27-1
Pyrifenox II	88283-41-4
Pyrimethanil	53112-28-0
Pyroquilon	57369-32-1
Quinalphos	13593-03-8
Quinmerac (breakdown product)	90717-03-6
Quinoclamine	2797-51-5
Quinoxifen	124495-18-7
Quizalofop-ethyl	76578-14-8
Resmethrin	28434-01-7
Rotenone	83-79-4
S,S,S-Tributylphosphorotrithioate	78-48-8
Safrole	94-59-7
Sebuthylazine	7286-69-3
Secbumeton	26259-45-0
sec-Butylbenzene	135-98-8

Diamyl phthalate	131-18-0
Diazepam	439-14-5
Diazinon	333-41-5
Dibenz[a,h]anthracene	53-70-3
Dibenzofuran	132-64-9
Dibrom (naled)	300-76-5
Dibromomethane	74-95-3
Dibromophenyl ether	5436-43-1
Dicamba	1918-00-9
Dicamba methyl ester	6597-78-0
Dicapthon	2463-84-5
Dichlofenthion	97-17-6
Dichlofluanid	1085-98-9
Dichlone	117-80-6
Dichlormid	37764-25-3
Dichlorophen	97-23-4
Dichlorprop	120-36-5
Dichlorprop methyl ester	57153-17-0
Dichlorvos	62-73-7
Diclobutrazol	75736-33-3
Diclofenac artifact	15362-40-0
Diclofenac-methyl ester	15307-78-5
Diclofop methyl	51338-27-3
Dicloran	99-30-9
Dicofol	115-32-2
Dicrotophos	141-66-2
Dicyclanil	112636-83-6
Dicyclohexyl phthalate	84-61-7
Dicyclopentadiene	77-73-6
Dieldrin	60-57-1
Dienochlor	2227-17-0

Silthiofam	175217-20-6
Simazine	122-34-9
Simetryn	1014-70-6
Spirodiclofen	148477-71-8
Squalane	111-01-3
Styrene	100-42-5
Suflolane	126-33-0
Sulfadiazine	68-35-9
Sulfamethoxazole	723-46-6
Sulfotepp	3689-24-5
Sulfur (S8)	10544-50-0
Sulprofos	35400-43-2
Swep	1918-18-9
Tamoxifen	10540-29-1
TCMTB	21564-17-0
Tebuconazole	107534-96-3
Tebufenpyrad	119168-77-3
Tebutam	35256-85-0
Tecnazene	117-18-0
Tefluthrin	79538-32-2
Temephos	3383-96-8
Tepraloxydim	149979-41-9
Terbacil	5902-51-2
Terbucarb	191-81-1
Terbufos	13071-79-9
Terbumeton	33693-04-8
Terbuthylazine	5915-41-3
Terbutryne	886-50-0
Terpineol	98-55-5
Terpinyl acetate	80-26-2
tert-Butylbenzene	98-06-6

Diethatyl ethyl	38727-55-8
Diethofencarb	87130-20-9
Diethyl dithiobis(thionoformate) (EXD)	502-55-6
Diethyl phthalate	84-66-2
Diethylene glycol	111-46-6
Diethylstilbestrol	56-53-1
Difenoconazol I	119446-68-3
Difenoconazol II	119446-68-3
Diflufenican	83164-33-4
Diisobutyl phthalate	84-69-5
Dimefox	115-26-4
Dimethachlor	50563-36-5
Dimethametryn	22936-75-0
Dimethenamid	87674-68-8
Dimethipin	55290-64-7
Dimethoate	60-51-5
Dimethomorph	110488-70-5
Dimethyl adipate	627-93-0
Dimethyl fumarate	624-49-7
Dimethyl phosphite	868-85-9
Dimethyl phthalate	131-11-3
Dimethylvinphos(z)	2274-67-1
Dimetilan	644-64-4
Dimetridazole	551-92-8
Dimoxystrobin	149961-52-4
di-n-butyl phthalate	84-74-2
Diniconazole	83657-24-3
Dinitramine	29091-05-2
Dinobuton	973-21-7

Tetrachloroethylene	127-18-4
Tetrachlorvinphos	961-11-5
Tetraconazole	112281-77-3
Tetradifon	116-29-0
Tetraethylpyrophosphate (TEPP)	107-49-3
Tetramethrin I	7696-12-0
Tetramethrin II	7696-12-0
Tetrapropyl thiodiphosphate	3244-90-4
Tetrasul	2227-13-6
Thenylchlor	96491-05-3
Thiabendazole	148-79-8
Thiacloprid	111988-49-9
Thiamethoxam	153719-23-4
Thiofanox	39196-18-4
Thiometon	640-15-3
Thionazin	297-97-2
Tiocarbazil I	36756-79-3
Tiocarbazil II	36756-79-3
Tolclofos-methyl	57018-04-9
Toltrazuril	69004-03-1
Toltrazuril Sulfone	69004-04-2
Toluene	108-88-3
Tolylfluanid	88283-41-4
Totarol	511-15-9
Tralkoxydim	87820-88-0
trans-1,3-Dichloropropylene	10061-02-6
trans-Chlordane	5103-74-2
trans-Nonachlor	39765-80-5
Tri-(2-chloroethyl) phosphate	115-96-8

Dinocap I	39300-45-3
Dinocap II	39300-45-3
Dinocap III	39300-45-3
Dinocap IV	39300-45-3
di-n-octyl phthalate	117-84-0
Dinoseb	88-85-7
Dinoseb acetate	2813-95-8
Dinoseb methyl ether	6099-79-2
Dinoterb	1420-07-1
Dinoterb acetate	3204-27-1
Di-n-propyl phthalate	131-16-8
Dioxacarb	6988-21-2
Dioxathion	78-34-2
Dioxydemeton-S-methyl	17040-19-6
Diphacinone	82-66-6
Diphenamid	957-51-7
Diphenyl ether	101-84-8
Diphenyl sulfone	127-63-9
Diphenylamine	122-39-4
Dipropetryn	4147-51-7
Disulfoton	298-04-4
Ditalimfos	5131-24-8
Dithiopyr	97886-45-8
Diuron	330-54-1
d-Limonene	5989-27-5
Dodemorph I	1593-77-7
Dodemorph II	1593-77-7
Doxepin	1668-19-5
Drazoxolon	5707-69-7
Drometrizole	2440-22-4

Triacetin	102-76-1
Triadimefon	43121-43-3
Triadimenol	55219-65-3
Tri-allate	2303-17-5
Triamiphos	1031-47-6
Triazophos	24017-47-8
Triazoxide	72459-58-6
Tribenuron-methyl (breakdown product)	101200-48-0
Tributyl acetylcitrate	77-90-7
Tributyl phosphate	126-73-8
Tributyl phosphorotrithioite	150-50-5
Tributylamine	102-82-9
Trichlopyr	55335-06-3
Trichlorfon	52-68-6
Trichloroethylene	79-01-6
Trichloronate	327-98-0
Triclopyr methyl ester	060825-26-5
Triclosan	3380-34-5
Triclosan-methyl	4640-01-1
Tricresyl phosphate	78-30-8
Tricyclazole	41814-78-2
Tridiphane	58138-08-2
Trietazine	1912-26-1
Trifloxystrobin	141517-21-7
Triflumizole	68694-11-1
Trifluralin	1582-09-8
Trimethoprim	738-70-5
Trinexapac-ethyl	95266-40-3
Triphenyl phosphate	115-86-6
Triphenylphosphine	603-35-0

Edifenphos	17109-49-8
Endosulfan ether	3369-52-6
Endosulfan I	959-98-8
Endosulfan II	33213-65-9
Endosulfan lactone	3868-61-9
Endosulfan sulfate	1031-07-8
Endrin	72-20-8
Endrin aldehyde	7421-93-4
Endrin ketone	53494-70-5

Triphenylphosphine oxide	791-28-6
Tris (2,3-epoxypropyl) isocyanate	2451-62-9
Tris-(1,3-dichloroisopropyl) phosphate	13674-87-8
Trixylenyl phosphate	25155-23-1
Tryclopyrbutoxyethyl	64470-88-8
Tycor (SMY 1500)	64529-56-2
Uniconizole-P	83657-17-4
Vamidothion	2265-23-2
Vanillin	121-33-5
Vernolate	1929-77-7
Vinclozolin	50471-44-8
Zoxamide	156052-68-5

Annex 3 Exemplar Chain of Custody form

Chain of custody form (ENVIRONMENTAL MATRICES)											
Customer: Adrian Love AquaBioTech						Phone: 356 2258 4160			E-mail: acl@aquabt.com		
Job: ERA12			Contract/Offer.: N° 22°-1167 REV 6			Pick-up location: Delivered					
Business name (for invoice): AquaBioTech Group Ltd						How to send the results: email – to acl@aquabt.com , identifying job number					
Report header: ERA12						Sampling report number:					
Delivery date of the results:			Referent:			Priority:		NO		YES	If yes, how many hours:
Sampler: ACL			Signature:			Conflicting samples:		NO		YES	If yes, how many samples:
Sample ID (by Analysis Laboratory)	Sample ID (by the Customer)	Appearance of the sample (visual/olfactory)	Date and time of sampling	Matrix *	Sampling Point	CER code (only wastes)	Producer (only wastes)	Number and type of containers	OFFER N° 22°-1167 R	Required 51analyses and related methods	Regulatory limits**
	A5a		10 Jan 2024, 10.30am		il Mielah			1 x 500mL PFOA free	Table 1 and 2	PFOA/S + Alkylphenols and Bisphenol A	
	A5b						1 x 500mL PFOA free			PFOA/S + Alkylphenols and Bisphenol A	
	A5a						1 x 5L PP/PET			Amines, POPs, PAHs, Dioxins, TBT	
	A5b						1 x 5L PP/PET			Amines, POPs, PAHs, Dioxins, TBT	
	A5a						2 x 40mL VOC +HCl			VOC	
	A5b						2 x 40mL VOC +HCl			VOC	
	A5a						1 x 50mL PP + HNO3			Metal	
	A5b						1 x 50mL PP + HNO3			Metal	
Name and Surname Compiler Chain of custody: ADRIAN LOVE								Signature:			



DL0195L/006

CERTIFICATO DI ACCREDITAMENTO Accreditation Certificate

ACCREDITAMENTO N.
ACCREDITATION N. **0195L REV. 06**

EMESSO DA
ISSUED BY **DIPARTIMENTO LABORATORI DI PROVA**

SI DICHIARA CHE
WE DECLARE THAT **BIOCHEMIE LAB S.r.l.**
Sede/Headquarters:
- Via di Limite 27/G - 50013 Campi Bisenzio FI

È CONFORME AI REQUISITI
DELLA NORMA **UNI CEI EN ISO/IEC 17025:2018**

MEETS THE REQUIREMENTS
OF THE STANDARD **ISO/IEC 17025:2017**

QUALE **Laboratorio di Prova**
AS **Testing Laboratory**

Data di 1ª emissione
1st issue date
29-10-1998

Data di revisione
Review date
15-11-2022

Data di scadenza
Expiring date
10-12-2026

L'accreditamento attesta la competenza tecnica, l'imparzialità e il costante e coerente funzionamento del Laboratorio relativamente al campo di accreditamento riportato nell'elenco Prove allegato al presente certificato di accreditamento. Il presente certificato non è da ritenersi valido se non accompagnato dagli Elenchi Prove, che possono variare nel tempo e può essere sospeso o revocato o ridotto in qualsiasi momento nel caso di inadempienza accertata da parte di ACCREDITA.

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pag. 1/1

ACCREDITA - Dipartimento Laboratori di prova

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Annex 5 Results

Table 6 Results of groundwaters.

All samples were taken in duplicate (a,b). G1 Fiddien Station; G2 San Katald/Ta' Pinu Borehole; G3 Ġnien Borehole; G4 Ġhattuq/Sellun Boreholes; G5 Baħrija G6 Victoria Station; G7 Pwales Station. Results lower than LOQ are indicated with a - . Compounds where there was no detection are omitted (see Appx 1 for full list of analysis). Values are in µg/L unless otherwise indicated

Time	Site	LOQ	G1a	G1b	G2a	G2b	G3a	G3b	G4a	G4b	G5a	G5b	G6a	G6b	G7a	G7b
Q1	EDTA (EthylenDiaminoTetracetyc Acid)	1500	-	-	-	-	-	-	1860	-	-	-	-	-	-	-
	Acesulfame K	0.05	-	-	-	-	-	-	-	-	-	-	0.0509	0.0536	-	-
	Carbamazepine	0.15	-	-	-	-	-	-	-	-	-	-	0.221	0.209	-	-
	5-Methyl-benzotriazole	0.09	-	-	-	-	-	-	-	-	-	-	0.190	0.196	-	-
Q2	Acesulfame K	0.05	-	-	-	-	-	-	-	-	-	-	0.134	1.15	-	-
	Carbamazepine	0.15	-	-	-	-	-	-	-	-	-	-	0.259	0.249	-	-
Q3	Acesulfame K	0.05	-	-	-	-	-	-	-	-	-	-	0.0983	0.0989	-	-
	Carbamazepine	0.15	-	-	-	-	-	-	-	-	-	-	0.309	0.313	-	-
	5-Methyl-benzotriazole	0.09	-	-	-	-	-	-	-	-	-	-	0.106	0.102	-	-
	Sulfamethoxazole	0.03	-	-	-	-	-	-	-	-	-	-	0.0495	0.0419	-	-
Q4	Acesulfame K	0.05	-	-	-	-	-	-	-	-	-	-	0.0962	0.0875	-	-
	Benzotriazole	0.09	-	-	-	-	-	-	-	-	-	-	0.22	0.177	-	-
	Carbamazepine	0.15	-	-	-	-	-	-	-	-	-	-	0.175	0.18	-	-
	EDTA (EthylenDiaminoTetracetyc Acid)												2990	2750		
	5-Methyl-benzotriazole	0.09	-	-	-	-	-	-	-	-	-	-	0.332	0.317	-	-

Table 7 Water Screening for Tentatively Identified Compounds¹ in Groundwater²

Compound Name	Amount/Conc	LMS	R.T. Diff(sec)	Purity
Tetrachloroethylene	0.0787	94	-9.2	100.0
Ethylbenzene	0.0463	82	0.7	100.0
p-Xylene	0.0559	84	-7.7	100.0
m-Xylene	0.0559	85	-8.0	100.0
Bromoform	0.0416	77	-6.5	100.0
Styrene	0.0710	47	1.0	100.0
o-Xylene	0.0210	72	-6.4	100.0
Phenol	0.0599	53	-0.3	100.0
4-Methylanisole	0.0018	45	8.2	100.0
d-Limonene	0.3986	92	-1.4	100.0

Benzyl alcohol	0.0486	81	0.5	97.1
Linalool	0.0304	46	1.7	100.0
1-Ethyl-2-pyrrolidone	0.2068	47	0.1	99.7
N-nitrosopiperidine (1-nitrosopiperidin	0.0079	43	-0.8	100.0
Naphthalene	0.0085	70	2.8	100.0
3-Chlorophenol	0.0233	40	-7.7	100.0
4-Chlorophenol	0.0535	41	-8.8	100.0
Suflolane	0.0810	46	0.8	92.0
2-Ethyl-1,3-hexanediol	0.0213	43	-2.1	92.0
1-Decanol	0.2423	83	1.4	93.6
Diphenyl ether	0.0046	70	2.5	100.0
Coumarin	0.0067	51	5.5	100.0
Dimethyl phthalate	0.0259	77	3.9	100.0
Chloroneb	1.5243	47	2.7	100.0
2,4-Di-tert-butylphenol	0.4256	98	2.6	100.0
Butylated hydroxytoluene	0.0065	61	3.4	100.0
N,N-Diethyl-m-toluamide	0.0225	65	5.1	100.0
Hexadecane	0.3206	65	4.0	100.0
Cedrol	0.1482	46	2.6	99.7
Propylparaben	4.2570	97	4.3	100.0
Benzophenone	0.0551	91	2.7	98.7
Tributyl phosphate	0.0717	75	4.6	99.4
Promecarb	0.0104	41	6.3	100.0
2-Ethylhexyl salicylate	0.0470	60	4.2	100.0
Isopropyl myristate	0.0981	80	3.2	100.0
Oxacyclohexadecan-2-one	0.0928	45	11.4	100.0
Caffeine	0.0085	62	4.8	100.0
Diisobutyl phthalate	0.1051	93	5.2	100.0
Flurenol-methylester	0.0654	42	16.6	100.0
Tridiphan	0.0178	41	2.3	100.0
Fenpropidin	0.0152	42	1.2	100.0
Tris (2,3-epoxypropyl) isocyanate	0.6156	43	17.3	100.0
Carbamazepine	0.0571	82	3.8	99.9
2-Ethylhexyl diphenyl phosphate	0.0087	42	6.5	100.0
Dimethomorph	0.1203	43	15.0	99.8
Cholesterol	22.0968	91	14.8	100.0

1 SCAN GCMS was used to screen for the presence of 1020 compounds that were screened for using SCAN GCMS (listed in Annex 2), listed are the positive results. Screening method detects presence/absence of organic pollutants in water with typical Limit of Detection (LOD) 0.1µg/l. The results does not indicate the Compounds present in the method blanks and with a signal to noise ratio (S/N) < 10. The Amount/Conc is in µg/l. The Library Match Score (LMS)

was considered acceptable when $\geq 40\%$, a value closer to 100% indicates more probability that the Compound is the one present in the library. Low values may be also due to a low estimated concentration of the Compound in the sample close to LOD or a noise from the Matrix. Peak Purity was considered acceptable when $\geq 50\%$. A value closer to 100%, indicates lower probability that another Component is present under the same peak of the Compound. 2. Pooled sample

Table 8 Results of Inland surface waters.

All samples were taken in duplicate (a,b). I1 Wied il-Luq; I2 Wied il-Lunzjata; I3 Wied is-Sewda. Results lower than LOQ are indicated with a - . Compounds where there was no detection are omitted (see Appx 1 for full list of analysis). Values are in $\mu\text{g/L}$ unless otherwise indicated

Sample ID	LOQ	I1a	I1b	I2a	I2b	I3a	I3b
Q1							
Ammonium nitrogen	5	688.1	386.9	-	-	94.8	-
Sulfates (mg/L)	2.5	54	76	95	95	100	110
Arsenic	1	2.61	2.14	2.23	2.3	3.53	3.46
Cadmium	0.1	0.309	-	-	-	0.106	0.117
Mercury	0.1	0.14	-	-	-	-	-
Nickel	1	4.25	3.48	4.31	4.26	5.87	5.66
Lead	1	15.5	7.02	1.32	1.37	7.07	5.73
Trichloromethane (Chloroform)	0.01	-	-	0.0971	0.0955	-	-
Glyphosate	0.3	-	-	-	-	1.82	1.63
Acesulfame K	0.05	0.15	0.136	0.0659	0.0725	0.307	0.29
Benzotriazole	0.09	-	-	0.167	0.168	-	-
5-Methyl-benzotriazole	0.09	-	0.127	-	-	0.304	0.327
Sulfamethoxazole	0.03	-	-	0.0366	0.0392	-	-

Q4	Perfluorooctanoic acid (PFOA)	0.002	0.00407	0.00287	-	-	0.00302	0.00381
	Ammonium nitrogen	5	-	-	-	-	10480	10568
	EDTA (EthylenDiaminoTetracetyc Acid)	1500	-	-	2000	1780	-	-
	Sulfates (mg/L)	2.5	120	100	41	41	16	16
	Arsenic	1	-	-	1.43	1.48	2.28	2.12
	Mercury	0.1	-	-	0.12	-	-	-
	Nickel	1	1.02	-	1.51	1.57	4.17	3.81
	Lead	1	1.88	1.78	-	-	7.01	6.62
	Trichloromethane (Chloroform)	0.01	0.0214	0.0207	0.0478	0.044	0.0183	0.0188
	Di (2-ethylhexil) phthalate (DEHP) (mg/L)(mg/L)	0.0001	-	-	0.00049	0.000581	-	-
	Acesulfame K	0.05	-	-	0.0876	0.114	1.02	1.12
	Atenolol	0.003	-	-	-	-	0.0161	0.0156
	Benzotriazole	0.09	-	-	1.11	1.33	0.704	0.739
	Diuron	0.05	-	-	0.172	0.171	-	-
	5-Methyl-benzotriazole	0.09	0.124	0.115	0.934	1.01	0.767	0.799
	Perfluorooctanoic acid (PFOA)	0.002	0.00245	-	0.00812	0.00936	0.00567	0.00476
	Perfluorooctanesulfonic acid (PFOS)	0.002	-	-	0.00435	0.00591	0.00293	0.00208

Table 9 Water Screening for Tentatively Identified Compounds¹ in Inland surface waters²

Compound Name	Amount/Conc	LMS	R.T. Diff(sec)	Purity
Tetrachloroethylene	0.0781	86	-6.6	100.0
Ethylbenzene	0.1216	80	2.7	100.0
p-Xylene	0.1541	84	-5.8	100.0
m-Xylene	0.1530	86	-6.0	100.0
Bromoform	0.1164	74	-4.7	100.0
Styrene	0.0815	45	3.1	100.0
o-Xylene	0.1132	77	-4.7	100.0
Isopropylbenzene	0.0573	64	-1.5	100.0
1,3,5-Trimethylbenzene	1.1395	95	0.1	100.0
tert-Butylbenzene	0.5747	47	1.4	100.0
1,2,4-Trimethylbenzene	4.3998	95	-0.7	100.0
sec-Butylbenzene	0.4054	74	1.3	100.0
p-Isopropyltoluene	0.2913	91	1.4	96.2
d-Limonene	0.3787	68	-0.2	93.0
Indane	0.6821	86	-0.4	98.5
Decahydronaphthalene (trans)	1.1548	85	1.4	100.0
n-Butylbenzene	0.8919	74	2.0	99.0
Acetophenone	2.3890	55	1.0	100.0
4-tert-Butyltoluene	0.0398	42	1.8	100.0
1-Ethyl-2-pyrrolidone	7.2653	56	-3.8	100.0
Naphthalene	0.3356	82	3.7	96.5
Neodecanoic acid-ethenyl ester	169.2569	66	2.9	100.0
2-Ethyl-1,3-hexanediol	0.8835	44	5.8	96.7
Citronellol	4.3244	65	-0.6	99.6
N-nitrosodi-n-butylamine	0.2359	48	2.0	96.1
Cinnamal	2.2606	46	-1.2	100.0
Safrole	0.3236	48	-1.4	98.8
2-Methylnaphthalene	0.3882	88	4.9	100.0
Biphenyl	0.0111	73	2.6	100.0
Chloroxylenol	0.1165	66	1.7	100.0
Butylated hydroxyanisole	0.1206	52	-8.3	100.0
Chloroneb	2.8995	47	3.5	100.0
2,4-Di-tert-butylphenol	0.8096	96	3.4	100.0
Butylated hydroxytoluene	0.0315	46	4.3	98.7
N,N-Diethyl-m-toluamide	0.1170	80	5.9	100.0
Propylparaben	5.1251	95	5.1	100.0
Hexyl salicylate	0.0335	71	4.9	100.0
Anthracene	0.0057	66	-2.8	99.2
Isopropyl myristate	0.1341	58	3.7	100.0

Diisobutyl phthalate	0.1112	79	5.8	100.0
Terbucarb	0.8285	57	16.1	99.9
di-n-butyl phthalate	2.1802	91	3.5	100.0
Benzyl laurate	0.3192	46	-6.5	100.0
Bisphenol A	0.2226	78	0.9	100.0
Tris-(1,3-dichloroisopropyl) phosphate	0.0642	40	6.0	100.0
Dimethomorph	0.3860	45	15.6	100.0
Cholesterol	72.1003	94	15.9	100.0

1 SCAN GCMS was used to screen for the presence of 1020 compounds that were screened for using SCAN GCMS (listed in Annex 2), listed are the positive results. Screening method detects presence/absence of organic pollutants in water with typical Limit of Detection (LOD) 0.1µg/l. The results does not indicate the Compounds present in the method blanks and with a signal to noise ratio (S/N) < 10. The Amount/Conc is in µg/l. The Library Match Score (LMS) was considered acceptable when >= 40%, a value closer to 100% indicates more probability that the Compound is the one present in the library. Low values may be also due to a low estimated concentration of the Compound in the sample close to LOD or a noise from the Matrix. Peak Purity was considered acceptable when >=50%. A value closer to 100%, indicates lower probability that another Component is present under the same peak of the Compound. 2 Pooled sample

Table 10 Results of Coastal, Storm, Transitional and New waters.

All samples were taken in duplicate. C1 Off Ta' Barkat Sewage treatment plant, C2 Xghajra; Xemxija Bay; C3 Off San Dimitri Point, Gozo; S1a Ta' Xbiex, Msida; T1 Is-Salini, Naxxar; N1 New Water. Results below LOQ are indicated with a - . Compounds where there was no detection are omitted (see Appx 1 for full list of analysis). Values are in µg/L

	Sample ID	LOQ	C1a	C1b	C2a	C2b	C3a	C3b	S1a	S1b	T1a	T1b	N1a	N1b
Q1	Methyl tert-butyl ether (MTBE)	0.3	-	-	-	-	-	-	0.828	-	-	-	-	-
	Glyphosate	0.3	-	-	-	-	-	-	0.648	0.581	-	-	-	-
	Triisobutylphosphate	0.0025	-	-	-	-	-	-	2.2	3.09	-	-	-	-
	Acesulfame K	0.4	-	-	-	-	-	-	6.33	7.23	-	-	-	-
	Atenolol	0.4	-	-	-	-	-	-	0.216	0.188	-	-	0.0255	0.0248
	Benzotriazole	0.5	-	-	-	-	-	-	0.516	0.511	-	-	-	-
	Carbamazepine	0.25	-	-	-	-	-	-	-	-	-	-	0.193	-
	5-Methyl-benzotriazole	0.5	-	-	-	-	-	-	0.624	0.703	-	-	-	0.121
	Sulfamethoxazole	0.25	-	-	-	-	-	-	-	-	-	-	-	0.031
Q2	1,2,4-Trimethylbenzene	1.0	-	-	-	-	-	-	n/a	n/a	n/a	n/a	2.00	-
	Benzotriazole	0.5	-	-	-	-	-	-	n/a	n/a	n/a	n/a	-	0.346
Q3	Atenolol	0.4	-	-	-	-	-	-	n/a	n/a	n/a	n/a	0.00920	0.00660
Q4	EDTA (EthylenDiaminoTetracetyc Acid)	1500	-	-	-	-	-	-	2100	3060	-	-	-	-
	Methyl tert-butyl ether (MTBE)	0.3	-	-	-	-	-	-	0.779	0.752	-	-	-	-
	Acesulfame K	0.05	-	-	-	-	-	-	1.76	1.55	-	-	-	-
	Atenolol	0.4	-	-	-	-	-	-	0.138	0.126	-	-	-	-
	Benzotriazole	0.5	-	-	-	-	-	-	3.8	3.82	-	-	-	-
	5-Methyl-benzotriazole	0.5	-	-	-	-	-	-	3.31	3.21	-	-	-	-

Table 11 Water Screening for Tentatively Identified Compounds¹ in Coastal waters²

Compound Name	Amount/Conc	LMS	R.T. Diff(sec)	Purity
d-Limonene	0.0915	81	-1.5	100.0
Benzyl alcohol	0.0148	63	0.8	99.3
1-Ethyl-2-pyrrolidone	0.2650	48	0.2	100.0
N-nitrosopiperidine (1-nitrosopiperidin	0.0107	45	-0.7	99.9
Naphthalene	0.0031	66	2.9	100.0
Suflolane	0.0721	45	0.7	98.9
Amitrole	0.0140	42	12.4	100.0
1-Decanol	0.1759	81	1.7	96.1
2-Methylnaphthalene	0.0017	55	4.2	100.0
Nicotine	0.0566	63	6.6	100.0
Diphenyl ether	0.0089	80	2.5	100.0
2-Methoxynaphthalene	0.0053	67	3.6	100.0
Dimethyl phthalate	0.0842	95	3.9	100.0
2,4-Di-tert-butylphenol	0.2445	98	2.7	100.0
Butylated hydroxytoluene	0.0047	56	3.9	100.0
o-Phenylphenol	0.0039	50	2.7	78.7
N,N-Diethyl-m-toluamide	0.0100	45	5.1	100.0
Hexadecane	0.0470	57	-1.6	100.0
Propylparaben	2.5884	97	4.2	100.0
Benzophenone	0.0914	94	2.7	99.8
Anthracene	0.0041	49	-3.4	98.1
2-Ethylhexyl salicylate	0.0495	57	4.2	100.0
Isopropyl myristate	0.1033	85	3.2	100.0
Oxacyclohexadecan-2-one	0.0993	51	11.6	100.0
Diisobutyl phthalate	0.1840	93	5.3	100.0
Homosalate	0.0143	41	-4.2	100.0
di-n-butyl phthalate	2.3085	91	2.8	100.0
Naproxen	0.0492	41	-0.3	100.0
Tributyl acetylcitrate	0.1148	79	6.2	100.0
Bis(2-ethylhexyl) adipate	0.1443	74	8.6	99.8
2-Ethylhexyl diphenyl phosphate	0.0121	44	6.6	100.0
Fenpiclonil	1.8641	40	16.5	100.0
Squalane	5.1705	73	-16.8	100.0
Cholesterol	21.6153	82	15.3	99.7

1 SCAN GCMS was used to screen for the presence of 1020 compounds that were screened for using SCAN GCMS (listed in Annex 2), listed are the positive results. Screening method detects presence/absence of organic pollutants in water with typical Limit of Detection (LOD) 0.1µg/l. The results does not indicate the Compounds present in the method blanks and with a signal to noise ratio (S/N) < 10. The Amount/Conc is in µg/l. The Library Match Score (LMS) was considered acceptable when >= 40%, a value closer to 100% indicates more probability that the Compound is the one present in the library. Low values may be also due to a low estimated concentration of the Compound in the sample close to LOD or a noise from the Matrix. Peak Purity was considered acceptable when >=50%. A value closer to 100%, indicates lower probability that another Component is present under the same peak of the Compound. 2 Pooled sample

Table 12 Water Screening for Tentatively Identified Compounds¹ in Storm Water

Compound Name	Amount/Conc	LMS	R.T. Diff(sec)	Purity
Tetrachloroethylene	0.0199	83	-7.7	100.0
Ethylbenzene	0.1276	94	1.5	100.0
p-Xylene	0.1588	98	-6.9	100.0
m-Xylene	0.1543	97	-7.2	100.0
Styrene	0.1125	86	-5.9	100.0
o-Xylene	0.1826	96	-5.9	100.0
Isopropylbenzene	0.0157	45	-2.7	100.0
n-Propylbenzene	0.0368	76	-1.7	100.0
1,3,5-Trimethylbenzene	4.5957	93	-8.4	100.0
Aniline	0.0135	44	0.7	99.8
bis(2-chloroethyl) ether	0.0913	42	-10.8	99.8
tert-Butylbenzene	0.0131	45	0.2	100.0
1,2,4-Trimethylbenzene	0.0866	95	-2.0	100.0
4-Methylanisole	0.0198	48	8.0	100.0
p-Isopropyltoluene	0.0252	67	-0.2	96.5
d-Limonene	5.3187	98	-1.6	100.0
Benzyl alcohol	0.7175	43	-5.9	100.0
Indane	0.0092	73	-1.9	100.0
Acetophenone	0.1498	88	0.0	100.0
1-Ethyl-2-pyrrolidone	0.4436	47	-0.3	99.8
N-nitrosopiperidine (1-nitrosopiperidin	0.0244	45	-1.2	99.9
2-Ethylhexanoic acid	0.1739	47	-6.4	100.0
Naphthalene	0.0252	83	2.4	100.0
Neodecanoic acid-ethenyl ester	38.0864	69	1.3	100.0
2-Methylnaphthalene	0.0291	89	3.7	100.0
Triacetin	0.0465	70	2.4	96.5
1(3H)-Isobenzofuranone	0.0559	68	15.3	100.0
Chloroxlenol	0.0236	40	0.7	100.0
Diphenyl ether	0.0114	55	2.1	100.0
2,4,7,9-Tetramethyl-5-decyne-4,7-diol	0.4443	70	2.8	100.0
Coumarin	0.0116	44	5.0	100.0
Butylated hydroxyanisole	0.1533	56	-9.4	100.0
Chloroneb	1.8159	47	2.2	100.0

2,4-Di-tert-butylphenol	0.5070	97	2.1	100.0
Butylated hydroxytoluene	0.0987	81	3.1	100.0
N,N-Diethyl-m-toluamide	0.2601	91	4.6	100.0
1,6-Hexanediol diacrylate	4.8937	62	7.8	100.0
Hexadecane	15.5076	99	3.5	100.0
Ibuprofen	0.0792	66	3.7	100.0
Benzophenone	0.1335	93	2.1	98.7
N,N,N',N'-Tetraacetylenediamine	0.1064	41	0.5	71.7
2(3H)-Benzothiazolone	2.8597	75	1.6	100.0
Promecarb	0.1025	50	6.1	100.0
Tri-(2-chloroethyl) phosphate	0.0794	72	3.3	100.0
Benzenesulfonamide, N-butyl	25.3883	93	3.4	100.0
Oxacyclohexadecan-2-one	0.3329	55	11.3	100.0
2-Octyl-4-isothiazolin-3-one	0.1283	44	10.7	100.0
Diisobutyl phthalate	0.0616	63	4.6	100.0
Metribuzin	0.0326	44	1.5	100.0
di-n-butyl phthalate	0.3175	80	1.9	99.5
Benzenesulfonamide	0.2446	88	5.4	100.0
Benzophenone-3	0.0633	60	4.3	100.0
Sulfur (S8)	0.2451	89	3.3	99.4
Methoprene II	0.0354	46	-10.0	100.0
Pyrene	0.0074	62	4.6	99.8
Bis (4-chlorophenyl) sulfone	0.0162	43	5.5	100.0
Tributyl acetylcitrate	0.2999	66	5.0	100.0
Carbamazepine	0.0660	71	3.2	99.7
Bis(2-ethylhexyl) adipate	0.8776	60	7.3	100.0
Piperonylbutoxide	0.4769	77	7.2	100.0
Piperonyl butoxide	0.3060	77	3.1	100.0
Dicyclohexyl phthalate	1.6789	69	4.4	100.0
bis(2-ethylhexyl)phthalate (DEHP)	2.2584	92	0.8	100.0
Squalane	11.3787	76	9.5	100.0
Octocrylene	0.0424	55	8.7	100.0
Cholesterol	127.3758	93	12.6	99.7

¹ SCAN GCMS was used to screen for the presence of 1020 compounds that were screened for using SCAN GCMS (listed in Annex 2), listed are the positive results. Screening method detects presence/absence of organic pollutants in water with typical Limit of Detection (LOD) 0.1µg/l. The results does not indicate the Compounds present in the method blanks and with a signal to noise ratio (S/N) < 10. The Amount/Conc is in µg/l. The Library Match Score (LMS) was considered acceptable when >= 40%, a value closer to 100% indicates more probability that the Compound is the one present in the library. Low values may be also due to a low estimated concentration of the Compound in the sample close to LOD or a noise from the Matrix. Peak Purity was considered acceptable when >=50%. A value closer to 100%, indicates lower probability that another Component is present under the same peak of the Compound.

Table 13 Water Screening for Tentatively Identified Compounds¹ in Transitional Water

Compound Name	Amount/Conc	LMS	R.T. Diff(sec)	Purity
Ethylbenzene	0.0203	84	-8.5	100.0
p-Xylene	0.0761	96	-8.6	100.0
m-Xylene	0.0761	96	-8.9	100.0
Bromoform	0.0237	77	-7.4	99.6
Styrene	0.0628	76	1.6	100.0
o-Xylene	0.0846	95	-7.2	100.0
n-Propylbenzene	0.0085	73	-2.3	100.0
1,3,5-Trimethylbenzene	2.4993	93	-8.8	100.0
tert-Butylbenzene	0.0060	46	0.1	100.0
1,2,4-Trimethylbenzene	0.0413	92	-2.2	100.0
p-Isopropyltoluene	0.0152	83	0.1	98.8
d-Limonene	2.9099	98	-1.5	100.0
Benzyl alcohol	0.3860	43	-5.8	100.0
Indane	0.0052	61	-1.6	99.9
Acetophenone	0.0549	87	0.0	100.0
1-Ethyl-2-pyrrolidone	0.2320	48	-0.1	99.6
N-nitrosopiperidine (1-nitrosopiperidin	0.0104	44	-1.0	99.9
Naphthalene	0.0129	95	2.6	100.0
2,6-Dimethylaniline	0.0042	41	11.5	96.0
Neodecanoic acid-ethenyl ester	15.4260	69	1.5	100.0
Suflolane	1.0534	40	-5.5	99.9
2-Methylnaphthalene	0.0134	93	3.9	100.0
Propofol	0.0046	57	12.5	100.0
Biphenyl	0.0002	63	1.9	100.0
Diphenyl ether	0.0034	57	2.2	100.0
2,4,7,9-Tetramethyl-5-decyne-4,7-diol	0.0342	50	2.9	100.0
Dimethyl phthalate	0.0301	84	3.6	100.0
Butylated hydroxyanisole	0.0508	56	-9.4	100.0
Butylated hydroxytoluene	0.1291	97	3.1	100.0
N,N-Diethyl-m-toluamide	0.0173	59	4.4	100.0
1,6-Hexanediol diacrylate	2.1705	62	7.8	100.0
Hexadecane	7.2406	99	3.5	100.0
Azobenzene	0.0034	58	8.8	100.0
Benzophenone	0.0122	71	2.3	100.0
Diisobutyl phthalate	0.0334	89	4.3	100.0
Diphenyl sulfone	0.0056	56	4.5	99.9
di-n-butyl phthalate	0.1493	85	1.8	100.0

Sulfur (S8)	0.0147	80	3.1	100.0
Tributyl acetylcitrate	0.0236	49	4.8	100.0
Bis(2-ethylhexyl) adipate	0.3741	44	7.3	100.0
Fenpiclonil	2.1802	40	15.2	100.0
di-n-octyl phthalate	0.0424	47	4.5	100.0

¹ SCAN GCMS was used to screen for the presence of 1020 compounds that were screened for using SCAN GCMS (listed in Annex 2), listed are the positive results. Screening method detects presence/absence of organic pollutants in water with typical Limit of Detection (LOD) 0.1µg/l. The results does not indicate the Compounds present in the method blanks and with a signal to noise ratio (S/N) < 10. The Amount/Conc is in µg/l. The Library Match Score (LMS) was considered acceptable when >= 40%, a value closer to 100% indicates more probability that the Compound is the one present in the library. Low values may be also due to a low estimated concentration of the Compound in the sample close to LOD or a noise from the Matrix. Peak Purity was considered acceptable when >=50%. A value closer to 100%, indicates lower probability that another Component is present under the same peak of the Compound.

Table 14 Water Screening for Tentatively Identified Compounds¹ in New Water

Compound Name	Amount/Conc	LMS	R.T. Diff(sec)	Purity
2-Ethyl-4-methyl-1,3-dioxolane	0.0485	44	1.4	95.0
Tetrachloroethylene	0.0420	87	-6.6	100.0
Ethylbenzene	0.0710	92	2.8	100.0
p-Xylene	0.0843	96	-5.7	100.0
m-Xylene	0.0844	95	-5.9	100.0
Styrene	0.0809	55	3.4	100.0
Cyclohexanone	0.1630	60	-1.4	100.0
o-Xylene	0.0323	81	-4.7	100.0
1,3,5-Trimethylbenzene	0.0154	53	0.4	100.0
Phenol	0.0754	78	0.8	100.0
1,2,4-Trimethylbenzene	0.0491	90	-0.6	100.0
d-Limonene	0.3452	93	-0.3	100.0
Benzyl alcohol	0.0481	87	1.4	97.7
Indane	0.0065	79	-0.5	100.0
Linalool	0.0384	47	2.9	100.0
N-nitrosopiperidine (1-nitrosopiperidin	0.0105	43	-0.3	100.0
3,5-Dimethylphenol	0.0219	44	3.2	100.0
Naphthalene	0.0096	77	3.7	100.0
Neodecanoic acid-ethenyl ester	4.2173	67	2.3	100.0
1-Decanol	0.2736	87	2.5	99.5
Nicotine	0.0331	67	6.3	100.0
Propofol	0.0114	56	13.3	100.0
Biphenyl	0.0004	60	2.9	100.0
Chloroxylenol	0.0367	66	1.6	100.0
Dimethyl phthalate	0.0199	65	4.5	100.0
Butylated hydroxyanisole	0.0914	55	-8.3	100.0
Chloroneb	1.3374	47	3.4	100.0
2,4-Di-tert-butylphenol	0.3734	98	3.3	100.0
Butylated hydroxytoluene	0.0194	69	4.3	100.0
Diethyl phthalate	0.0899	74	4.0	100.0

Propylparaben	4.9071	97	4.9	100.0
Hexyl salicylate	0.0292	73	4.7	100.0
Diallyl phthalate	0.0108	69	4.2	100.0
Benzenesulfonamide, N-butyl	16.9532	91	4.5	100.0
Phenanthrene	0.0031	54	3.7	99.6
Propylamide	0.0951	55	-15.6	100.0
Anthracene	0.0041	54	-3.1	99.6
2-Ethylhexyl salicylate	0.0703	60	4.6	100.0
Isopropyl myristate	0.1483	72	3.6	100.0
Caffeine	0.0097	50	5.2	100.0
Diisobutyl phthalate	0.1051	89	5.7	100.0
di-n-butyl phthalate	2.3677	88	3.2	100.0
Isopropyl palmitate	1.2467	60	4.7	100.0
Methoprene II	0.2597	50	11.4	100.0
Bisphenol A	0.0553	65	0.5	100.0
Bis(2-ethylhexyl) adipate	0.0286	41	2.8	92.8
bis(2-ethylhexyl) phthalate (DEHP)	2.4595	93	2.6	100.0
Dimethomorph	0.4404	47	16.0	100.0
Cholesterol	79.4241	95	16.0	99.8

¹ SCAN GCMS was used to screen for the presence of 1020 compounds that were screened for using SCAN GCMS (listed in Annex 2), listed are the positive results. Screening method detects presence/absence of organic pollutants in water with typical Limit of Detection (LOD) 0.1µg/l. The results does not indicate the Compounds present in the method blanks and with a signal to noise ratio (S/N) < 10. The Amount/Conc is in µg/l. The Library Match Score (LMS) was considered acceptable when >= 40%, a value closer to 100% indicates more probability that the Compound is the one present in the library. Low values may be also due to a low estimated concentration of the Compound in the sample close to LOD or a noise from the Matrix. Peak Purity was considered acceptable when >=50%. A value closer to 100%, indicates lower probability that another Component is present under the same peak of the Compound.

Table 15 Results of Sampling Additional Waters. Samples taken in duplicate (a,b).

A1 Wied Blandun; A2 Wied Incita; A3 Marsa Storm water; A4 Marsalforn Catchment, Gozo; A5 Mielah Catchment, Gozo; A6 Burmarrad, Ghasel catchment; A7 Il-Magħluq. A8 Qoton. Results below LOQ are indicated with a - . Compounds where there was no detection are omitted (see Appx 1 for full list of analysis). Values are in µg/L unless otherwise indicated

Quarter 1

Analysis	LoQ	A1a	A1b	A2a	A2b	A3a	A3b	A4a	A4b	A5a	A5b	A6a	A6b	A7a	A7b	A8a	A8b
Ammonium nitrogen	5	-	-	316.1	162	105.8	80.3	495.2	243.8	27913	28080	19.1	20.5	189.7	174.7	-	-
Sulfates (mg/L)	2.5	20	34	42	42	4700	4500	28	29	45	48	2900	2900	1600	1500	12	12
Arsenic	1.0	1.09	1.07	3.53	3.56	3.91	4.01	1.05	1.06	1.92	1.95	1.49	1.70	3.31	3.04	1.37	1.31
Cadmium	0.1	0.130	0.142	-	-	0.126	0.162	-	-	-	-	0.138	-	0.120	0.129	-	-
Nickel	1.0	3.78	4.01	3.30	3.32	1.79	1.93	3.20	3.19	1.83	1.73	1.99	1.92	6.56	6.23	2.27	2.59
Lead	1.0	8.22	9.29	2.26	2.33	2.84	2.97	-	-	-	-	-	-	-	-	5.60	5.70
17-beta-estradiol (E2)	0.09	-	-	-	-	0.660	0.220	-	-	-	-	0.674	0.668	0.653	0.666	-	-
Hexachlorobutadiene	0.01	-	-	-	-	-	-	0.0129	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloromethane (Chloroform)	0.01	0.0385	0.0324	-	-	0.021	-	0.075	0.0771	0.0959	0.103	0.0432	0.0454	0.0204	0.0212	-	-
Glyphosate	0.3	-	-	-	-	-	-	-	-	2.08	1.93	-	-	-	-	0.425	0.413
Chlordecone	0.010	-	-	-	-	-	1.58	-	-	-	-	-	-	-	-	-	-
Chlorpyrifos methyl	0.03	-	-	-	-	1.39	3.39	-	-	-	-	-	-	-	-	-	-
Cyanazine	0.05	-	-	-	-	-	4.60	-	-	-	-	-	-	-	-	-	-
Tetrachlorvinphos E-isomer	0.010	-	-	-	-	0.883	1.55	-	-	-	-	5.24	2.53	-	-	-	-
Di (2-ethylhexil) phthalate (DEHP)	0.0001	0.000139	-	-	-	-	-	-	-	0.000374	0.000413	-	-	-	-	0.000986	0.000879
DDT-2,4	0.01	-	-	-	-	-	-	-	-	-	-	0.125	0.126	-	-	-	-
Acesulfame K	0.05	3.57	3.11	-	-	1.80	-	0.444	0.420	5.45	6.09	0.444	0.409	-	-	0.287	0.333
Alachlor	0.01	-	-	-	-	0.358	-	-	-	-	-	-	-	-	-	-	-
Aldrin	0.003	-	-	-	-	0.717	-	-	-	-	-	0.512	0.561	-	-	-	-
Atenolol	0.003	0.0345	0.0376	-	-	-	-	-	-	1.84	1.81	-	-	-	-	0.0151	0.0152
Benzotriazole	0.09	0.262	0.343	-	-	-	-	0.151	0.177	2.10	3.73	-	-	-	-	1.36	1.56
Carbamazepine	0.15	0.192	0.192	0.167	-	-	-	-	-	0.402	0.441	-	-	-	-	-	-
Diuron	0.05	0.0690	0.0760	-	-	-	-	-	-	0.316	0.271	-	-	-	-	0.0770	0.0790
5-Methyl-benzotriazole	0.09	0.245	0.306	-	-	-	-	0.209	0.239	1.53	1.56	-	-	-	-	1.12	1.22
Sulfamethoxazole	0.03	-	-	-	-	-	-	-	-	0.235	0.254	-	-	-	-	-	-

Perfluorooctanoic acid (PFOA)	0.002	0.00676	0.0100	0.00254	0.00306	-	-	0.00273	0.00284	0.00988	0.00808	-	-	-	-	0.00696	0.00607
Quarter 4																	
Analysis	LoQ	A1a	A1b	A2a	A2b	A3a	A3b	A4a	A4b	A5a	A5b	A6a	A6b	A7a	A7b	A8a	A8b
Ammonium nitrogen EDTA (EthylenDiaminoTetracetyc Acid)	5	-	-	-	-	-	-	-	-	10.79257	10.32318	-	-	-	-	435	555
Sulfates (mg/L)	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12500	12500
Arsenic	2.5	9	9.1	29	29	1600	1600	3.5	3.6	39	39	240	260	1500	1300	38	29
Cadmium	1.0	-	-	-	1.09	2.9	3.05	3.89	3.98	2.8	2.7	1.07	1.12	3.69	3.31	1.12	1.08
Nickel	0.1	-	-	-	-	-	-	-	-	-	-	-	-	0.335	0.356	-	-
Lead	1.0	1.53	1.52	1.87	1.71	3.07	2.86	3.79	3.65	3.1	3.09	2.3	2.21	12.7	10.1	2.2	2.06
Methyl tert-butyl ether (MTBE)	1.0	3.59	3.64	1.85	1.68	5.01	4.63	1.62	1.42	-	-	2	2.01	1.94	2.37	3.09	2.8
Tetrachloroethylene Trichloromethane (Chloroform)	0.3	0.397	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Glyphosate	0.1	-	-	-	-	-	-	0.615	0.524	0.536	0.381	-	-	-	-	-	-
Benzo(ghi)perylene Di (2-ethylhexil) phthalate (DEHP) (mg/L)	0.01	0.0738	0.0741	0.0282	0.0286	0.0224	0.0219	-	-	-	-	0.0111	0.0106	0.0121	-	0.0108	0.0141
Acesulfame K	0.3	-	-	-	-	-	-	-	-	0.495	0.454	-	-	-	-	-	-
Atenolol	0.002	-	-	-	-	-	-	-	-	-	-	0.0035	0.0033	-	-	-	-
Benzotriazole	0.0001	0.000298	0.000601	0.000105	0.000141	-	-	-	-	0.00019	0.00018	0.0008	0.0006	0.475	-	-	-
Carbamazepine	0.05	0.714	0.706	0.0837	0.0898	0.0908	-	1.08	1.07	-	0.0601	0.211	0.222	-	-	0.511	0.517
Diuron	0.003	0.0253	0.0241	-	-	0.0286	0.0161	-	-	0.0782	0.0576	-	-	-	-	-	-
5-Methyl-benzotriazole	0.09	0.962	0.97	1.31	1.28	1.81	1.75	0.246	0.247	1.42	1.43	4.12	4.27	-	-	2.05	1.94
Sulfamethoxazole	0.15	-	-	-	-	-	-	-	-	0.243	0.231	-	-	-	-	-	-
Perfluorooctanoic acid (PFOA)	0.05	-	-	-	-	-	-	-	-	0.221	0.218	-	-	-	-	0.189	0.184
Perfluorooctanesulfonic acid (PFOS)	0.09	0.68	0.733	1.19	1.2	0.691	0.805	0.244	0.236	0.3	0.308	5.72	5.23	-	-	1.58	1.51
PCDD, PCDF Summation (I-TEQ)	0.03	-	-	-	-	-	-	-	-	0.168	0.188	-	-	-	-	-	-
	0.002	0.00342	0.0036	-	0.00218	-	0.0022	0.00572	0.00448	0.00573	0.00587	0.0043	0.0043	-	-	0.00498	0.00508
	0.002	-	0.0027	-	-	-	-	0.00235	-	-	-	-	-	-	-	0.00389	0.00537
	0.000000694	-	-	-	-	1.29 x 10 ⁻⁰⁶	-	-	-	-	-	-	-	-	-	9.15 x 10 ⁻⁰⁷	9.23 x 10 ⁻⁰⁷

Table 16 Water Screening for Tentatively Identified Compounds¹ in Additional Surface Water sites²

Compound Name	Amount/Conc	LMS	R.T. Diff(sec)	Purity
Tetrachloroethylene	0.0396	84	-9.0	100.0
Furfuryl alcohol	1.1735	58	-3.7	99.8
Ethylbenzene	0.0621	80	0.7	100.0
p-Xylene	0.0767	84	-7.7	100.0
m-Xylene	0.0767	85	-8.0	100.0
Styrene	0.0675	49	2.3	100.0
o-Xylene	0.0838	92	-6.6	100.0
Diethylene glycol	0.2411	57	11.0	99.7
Phenol	0.0809	68	-0.3	100.0
Benzonitrile	0.0025	43	-4.4	100.0
4-Methylanisole	0.0013	47	8.3	100.0
d-Limonene	0.3274	91	-1.3	100.0
Benzyl alcohol	0.0582	81	0.1	99.1
1-Ethyl-2-pyrrolidone	0.3035	45	0.0	99.2
N-nitrosopiperidine (1-nitrosopiperidin	0.0132	42	-0.9	95.8
2-Ethylhexanoic acid	0.1108	42	-6.3	99.3
Naphthalene	0.0068	53	2.8	99.7
Neodecanoic acid-ethenyl ester	9.1757	59	1.5	100.0
Suflolane	0.1111	42	0.8	100.0
1-Decanol	0.3144	76	1.5	96.7
2-Methylnaphthalene	0.0035	57	4.1	100.0
1(3H)-Isobenzofuranone	0.0203	58	2.5	100.0
Chloroxyleneol	0.0521	61	0.9	100.0
Diphenyl ether	0.0057	51	2.5	100.0
2-Methoxynaphthalene	0.0028	50	3.0	100.0
Dimethyl phthalate	0.0349	47	3.9	100.0
acenaphthene	0.0012	40	3.5	100.0
Chloroneb	2.0766	47	2.8	99.9
2,4-Di-tert-butylphenol	0.5803	97	2.7	100.0
1H-Benzotriazole-5-methyl	0.2418	52	-0.7	100.0
N,N-Diethyl-m-toluamide	0.1953	91	5.2	100.0
Hexadecane	0.4073	83	3.9	100.0
Propylparaben	3.7677	96	4.3	100.0
Azobenzene	0.0349	84	9.1	99.1

Benzophenone	0.2348	98	2.7	100.0
N,N,N',N'-Tetraacetylenediamine	0.2798	43	1.2	100.0
2(3H)-Benzothiazolone	0.7701	63	2.0	99.3
Hexyl salicylate	0.0379	57	4.2	100.0
Diallyl phthalate	0.0111	44	3.3	96.9
Tri-(2-chloroethyl) phosphate	0.0538	78	4.0	100.0
Phenanthrene	0.0036	53	3.2	100.0
Propyzamide	0.1130	49	-16.2	99.8
Anthracene	0.0048	53	-3.6	100.0
2-Ethylhexyl salicylate	0.0679	41	4.0	100.0
Isopropyl myristate	0.1037	56	3.3	100.0
Oxacyclohexadecan-2-one	0.1981	60	-0.3	100.0
Caffeine	0.3088	88	4.9	100.0
Diisobutyl phthalate	0.1096	84	5.2	100.0
Flurenol-methylester	0.0845	41	16.7	100.0
di-n-butyl phthalate	2.0302	89	2.8	100.0
9,10-Anthraquinone	0.0043	49	9.3	100.0
Benzenesulfonanilide	0.0553	75	6.3	100.0
Naproxen	0.1175	42	-0.3	100.0
Tributyl acetylcitrate	0.1038	58	6.1	100.0
Tris-(1,3-dichloroisopropyl) phosphate	0.1346	67	5.5	100.0
Carbamazepine	0.0668	74	4.1	99.9
Bis(2-ethylhexyl) adipate	0.1539	59	8.6	99.7
Piperonylbutoxide	0.1033	41	8.6	100.0
Piperonyl butoxide	0.0694	41	4.4	100.0
bis(2-ethylhexyl)phthalate (DEHP)	1.6163	91	2.2	99.8
Squalane	4.2065	65	-16.9	100.0
Octocrylene	0.0174	55	10.4	100.0
Dimethomorph	0.6259	47	15.0	100.0
Cholesterol	142.5091	93	15.2	100.0

1 SCAN GCMS was used to screen for the presence of 1020 compounds that were screened for using SCAN GCMS (listed in Annex 2), listed are the positive results. Screening method detects presence/absence of organic pollutants in water with typical Limit of Detection (LOD) 0.1µg/l. The results does not indicate the Compounds present in the method blanks and with a signal to noise ratio (S/N) < 10. The Amount/Conc is in µg/l. The Library Match Score (LMS) was considered acceptable when >= 40%, a value closer to 100% indicates more probability that the Compound is the one present in the library. Low values may be also due to a low estimated concentration of the Compound in the sample close to LOD or a noise from the Matrix. Peak Purity was considered acceptable when >=50%. A value closer to 100%, indicates lower probability that another Component is present under the same peak of the Compound. 2 Pooled sample

Table 17 Compounds detected at least once in year 1 of sampling

Compound	Additional sites	Coastal	Ground-water	Inland water	New water	Storm-water	Transitional
Ammonium nitrogen	/			/			
Sulphates	/			/			
Arsenic	/			/			
Cadmium	/			/			
Mercury							
Nickel	/			/			
Lead	/			/			
Methyl tert-butyl ether (MTBE)	/						
Dichloromethane	/			/			
Hexachlorobutadiene	/						
Trichloromethane (Chloroform)	/			/			
Di-ethylphthalate (DEP)	/						
Glyphosate	/			/		/	
Anthracene	/						
Benzo(a)pyrene	/			/			
Benzo(b)fluoranthene	/			/			
Benzo(ghi)perylene	/			/			
Benzo(k)fluoranthene	/			/			
Fluoranthene	/						
Indeno(1,2,3-c,d)pyrene	/			/			
Naphtalene	/						
Di (2-ethylhexil) phthalate (DEHP)	/			/			
Acesulpham k	/		/	/		/	/
Benzotriazole	/		/	/	/	/	
Carbamazepine	/		/			/	
Methylbenzotriazole	/		/	/	/	/	/
Sulfamethoxazole	/		/	/		/	
Perfluorooctanesulfonic acid (PFOS)	/			/			
Diuron	/			/			
Perfluorooctanoic acid (PFOA)				/			
Aniline				/			
Triisobutylphosphate		/		/		/	/
Atenolol				/	/	/	

Table 18 Compounds detected at least once in year 2 of sampling

Compound	Additio- nal sites	Coastal	Ground- water	Inland water	New water	Storm- water	Transit- ional
1,2,4-Trimethylbenzene					/		
17-beta-estradiol (E2)	/						
5-Methyl-benzotriazole	/		/	/	/	/	
Acesulfame K	/		/	/		/	
Alachlor	/						
Aldrin	/						
Ammonium nitrogen	/			/			
Arsenic	/			/			
Atenolol	/			/	/	/	
Benzo(ghi)perylene	/						
Benzotriazole	/		/	/	/	/	
Cadmium	/			/			
Carbamazepine	/		/		/	/	
Chlordecone	/						
Chlorpyrifos methyl	/						
Cyanazine	/						
DDT-2,4	/						
Di (2-ethylhexil) phthalate (DEHP)	/			/			
Diuron	/			/			
EDTA (EthyleneDiaminoTetracetic Acid)	/		/	/		/	
Glyphosate	/			/		/	
Hexachlorobutadiene	/						
Lead	/			/			
Mercury				/			
Methyl tert-butyl ether (MTBE)	/					/	
Nickel	/			/			
PCDD, PCDF Summation (I-TEQ)	/						
Perfluorooctanesulfonic acid (PFOS)	/			/			
Perfluorooctanesulfonic acid (PFOS)							
Perfluorooctanoic acid (PFOA)	/			/			
Sulfamethoxazole	/		/	/	/		
Sulfates	/			/			
Tetrachloroethylene	/						
Tetrachlorvinphos E-isomer	/						
Trichloromethane (Chloroform)	/			/			
Triisobutylphosphate						/	

Table 19 Sampling schedule in year 1 and 2 of monitoring

	Months	M1	M2	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18
	Date	Jul	Aug	Jan 23	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Activity 2						G,I,T,S ,C,N			G,C,N			G,C,N			G,I,T,S ,C,N
	First year in-situ monitoring*														
	Annual monitoring report														
	First year shipments ‡														

	Months	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30
	Date	Jan 24	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Activity 2			G,I,T,S ,C,N				G,C,N			G,C,N			G,I,T,S ,C,N
	Second year in-situ monitoring*												
	Second year shipments ‡												

<i>Legend:</i>
Shipment
Fieldwork

‡ Samples are sent by courier the same day as sampling and are scheduled to arrive within 24h

* G: Groundwater; I: Inland surface water (depending on availability); T: Transitional water;

S: Stormwater; C: Coastal water; N: New water

Table 20 EQS of recorded contaminants

Compound	Environmental quality standard or similar	Comments	Reference
<i>Ammonium nitrogen</i>	1. 0.015mg/L (Freshwater) / 0.021mg/L (saltwater) 2. <0.04 (salmonid water) <0.2 (cyprinid water)	2. OECD DIRECTIVE 78/659/EEC and EA 2007	1. https://support.esdat.net/Environmental%20Standards/uk/landfill%20directive%20appendix%20%20selected%20water%20quality%20standards.pdf 2. https://www.oecd.org/env/outreach/38205662.pdf
EDTA (EthylenDiaminoTetracetic Acid)	600 ug/L	In drinking waters	World Health Organization. WHO/SDE/WSH/03.04/58 Edetic Acid (EDTA) in Drinking-Water; WHO: Geneva, Switzerland, 1998
Sulphates	Average conc 116 ug/L in 6 rivers		Zak, D., Hupfer, M., Cabezas, A., Jurasinski, G., Audet, J., Kleeberg, A., ... & Goldhammer, T. (2021). Sulphate in freshwater ecosystems: A review of sources, biogeochemical cycles, ecotoxicological effects and bioremediation. Earth-Science Reviews, 212, 103446.
Arsenic	50ug FW / 25ug/L SW		https://www.wfduk.org/sites/default/files/Media/arsenic.pdf
Cadmium	Avg limit: 0.2 µg/l; Max limit: 1.5 µg/l	EQS varies with water hardness	https://echa.europa.eu/environmental-quality-standards/-/legislationlist/details/EU-EQS_WATER-ANX_I-100.318.702-VSK-G076O3
Dichloromethane	Average limit 20 µg/l	Surface waters other than inland surface waters	https://echa.europa.eu/environmental-quality-standards/-/legislationlist/details/EU-EQS_WATER-ANX_I-100.000.763-VSK-G076MR
Dichloromethane	Average limit 20 µg/l	Inland surface waters	https://echa.europa.eu/environmental-quality-standards/-/legislationlist/details/EU-EQS_WATER-ANX_I-100.000.763-VSK-G076MR
nickel	34 ug/l	freshwater and seawater	file:///C:/Users/e4b/Downloads/Nickel%20EQS%20dossier%202011.pdf
Trichloromethane (Chloroform)	2.5ug/L (AAEQS)	fresh and seawater	https://www.umweltbundesamt.de/sites/default/files/medien/376/dokumente/environmental_quality_standards_eqs_for_priority_substances_and_other_substances_relating_to_chemical_status.pdf
Glyphosate	0.1 ug/l	fresh water used for drinking	https://health.ec.europa.eu/document/download/7ace1a87-dd0a-4a78-809e-5454aacce2a8_en?filename=scheer_o_049.pdf
Lead	1.2 um/l fresh w 1.3/l seaw, or 7.2	fresh and seawater	https://www.monitooolproject.eu/images/Publications/Action_1_EQS_adaptation_for_priority_metals_Pb_Ni_Cd.pdf / https://www.oekotoxzentrum.ch/media/195618/0_dehp_june2022.pdf
Aniline	0.8 um/l	fresh water	https://www.umweltbundesamt.de/sites/default/files/medien/376/dokumente/environmental_quality_standards_eqs_for_river_basin-specific_pollutants_to_determine_ecological_status.pdf
Benzo(a)pyrene	0.1 um/l	fresh and sea water	https://www.umweltbundesamt.de/sites/default/files/medien/376/dokumente/environmental_quality_standards_eqs_for_priority_substances_and_other_substances_relating_to_chemical_status.pdf

Benzo(b)fluoranthene	N.a.	fresh and sea water	https://www.umweltbundesamt.de/sites/default/files/medien/376/dokumente/environmental_quality_standards_eqs_for_priority_substances_and_other_substances_relating_to_chemical_status.pdf
Benzo(ghi)perylene	N.a.	fresh and sea water	https://www.umweltbundesamt.de/sites/default/files/medien/376/dokumente/environmental_quality_standards_eqs_for_priority_substances_and_other_substances_relating_to_chemical_status.pdf
Benzo(k)fluoranthene	N.a.	fresh and sea water	https://www.umweltbundesamt.de/sites/default/files/medien/376/dokumente/environmental_quality_standards_eqs_for_priority_substances_and_other_substances_relating_to_chemical_status.pdf
Fluoranthene	1 µm/l	fresh and sea water	https://www.umweltbundesamt.de/sites/default/files/medien/376/dokumente/environmental_quality_standards_eqs_for_priority_substances_and_other_substances_relating_to_chemical_status.pdf
Indeno(1,2,3-c,d)pyrene	N.a.	fresh and sea water	https://www.umweltbundesamt.de/sites/default/files/medien/376/dokumente/environmental_quality_standards_eqs_for_priority_substances_and_other_substances_relating_to_chemical_status.pdf
Triisobutylphosphate	11 µm/l	fresh and sea water	https://circabc.europa.eu/sd/a/7fe29322-946a-4ead-b3b9-e3b156d0c318/Monitoring-based%20Exercise%20Report_FINAL%20DRAFT_25nov2016.pdf
* Di (2-ethylhexyl) phthalate (DEHP)	1.3	fresh and sea water	https://circabc.europa.eu/sd/a/337d62ba-6a8f-49ce-9c0e-591bb248e560/12_DEHP_EQS_Final%20Data%20Sheet.pdf
* Benzotriazole	120 µg/L	fresh water	https://www.ecotoxcentre.ch/media/2263/2011_kase_intech.pdf
* β-Estradiol	0.18ng/L AA	fresh and sea water	https://health.ec.europa.eu/document/download/a64bc6a9-eeef-4055-803a-674d2502857a_en?filename=scheer_o_023.pdf
* Carbamazepine	1.6 mg L ⁻¹ fresh water 0.16 mg L ⁻¹ sea water	fresh and seawater	https://health.ec.europa.eu/document/download/795b2c49-ac57-4a15-bdb8-f21d2d193534_en?filename=scheer_o_036.pdf
* Acesulpham k	N/A		
* Methylbenzotriazole	200 µg/L	fresh water	https://www.ecotoxcentre.ch/media/2263/2011_kase_intech.pdf
* Perfluorooctanesulfonic acid (PFOS)	36µg/L fresh w 7.2µg/l for other water	fresh and sea water	https://consult.environment-agency.gov.uk/environment-and-business/challenges-and-choices/user_uploads/perfluorooctane-sulfonate-and-related-substances-pressure-rbmp-2021.pdf
* Perfluorooctanoic acid (PFOA)	MAC-EQSfw [freshwater] [ug L ⁻¹] 2220 MAC-EQSsw [marine waters] [ug L ⁻¹] 450	fresh and marine water	https://www.sivempveneto.it/wp-content/uploads/2017/09/EQS-PFOA.pdf

Sulfamethoxazole	Proposed MAC-EQS for freshwater [µg.L-1] 2.7 Proposed MAC-EQS for saltwater [µg.L-1] 0.27		https://webetox.uba.de/webETOX/public/basics/literatur/download.do;jsessionid=48F6D4D6544A9B563A54D72199CDE5EF?id=34
2-ethylhexanoic acid	Surface waters other than inland surface waters 8.6ug/L, Inland surface waters, 4.0ug		https://echa.europa.eu/substance-information/-/substanceinfo/100.028.619
naphthalene	EQS for naphthalene is 2.4 µg/l as an annual average for inland surface waters and 1.2 µg/l as an annual average for other surface waters		https://www.echa.europa.eu/documents/10162/5f0beb6c-575f-4a1b-aff5-b37f06eb3852
Dimethyl phthalate	8µg/L		https://assets.publishing.service.gov.uk/media/60e85aa08fa8f50c75b6ad32/Estuaries_and_coastal_waters_specific_pollutants_and_operational_environmental_quality_standards.ods
diethyl-m-toluamide	NOEC for daphnids and green algae range from approximately 0.5 to 24 mg/L.		https://setac.onlinelibrary.wiley.com/doi/abs/10.1002/ieam.1246
Atenolol	150 µg/L		https://www.ecotoxcentre.ch/expert-service/quality-criteria/quality-criteria-for-surface-waters
Diuron	AQK (MAC-EQS): 0.27 µg/L		https://health.ec.europa.eu/publications/scheer-scientific-opinion-draft-environmental-quality-standards-priority-substances-under-water-4_en
MTBE	AA-EQS for MTBE is 10 µg/L while MAC-EQS is 90 µg/L		https://www2.mst.dk/Udgiv/publications/2014/01/978-87-93026-94-0.pdf
Diethyl phthalate	200 (AAEQS)		https://assets.publishing.service.gov.uk/media/60e85aa08fa8f50c75b6ad32/Estuaries_and_coastal_waters_specific_pollutants_and_operational_environmental_quality_standards.ods
Anthracene	0.1 AAEQS		https://circabc.europa.eu/sd/d/60c3c0c0-ea7b-4aa6-81ca-91241a251a79/Anthracene%20EQS%20dossier%202011.pdf
mercury	AA-EQSaltwater = AA-EQSFreshwater = 0.01 µg Hg L-1		https://health.ec.europa.eu/document/download/6c9acce1-1e08-496f-858b-cc084071206a_en?filename=scheer_o_053.pdf
a-HCH (a-Hexachlorocyclohexane)	AA-QS inland surface waters, 0.02ug/l; AA-QS other surface waters covered by the WFD 0.002		https://circabc.europa.eu/sd/a/e7304cd5-1a9b-49a9-9a22-54bcc8e5510a/18_HCHs-combined_EQSdatasheet_310705.pdf
Tributyl phosphate	River water 10ug		/www.umweltbundesamt.de/sites/default/files/medien/376/dokumente/environmental_quality_standards_eqs_for_river_basin-specific_pollutants_to_determine_ecological_status.pdf
Bisphenol-A	MAC-QSfw,eco of 129 µg L-1 to be derived with a		https://health.ec.europa.eu/publications/scheer-scientific-opinion-draft-environmental-quality-standards-priority-substances-under-water-3_en

	separate marine SSD able to generate a MAC-QS _{sw,eco} of 31 µg L ⁻¹		
isopropylbenzene	River water 10ug		/www.umweltbundesamt.de/sites/default/files/medien/376/dokumente/environmental_quality_standards_eqs_for_river_basin-specific_pollutants_to_determine_ecological_status.pdf
Styrene	50		https://echa.europa.eu/documents/10162/17228/trd_uk_styrene_en.pdf/b2244ec9-74e6-4450-9556-9c1556e7e16e
Hexachlorobutadiene	0.59ug/L		https://health.ec.europa.eu/publications/scheer-scientific-opinion-draft-environmental-quality-standards-priority-substances-under-water-11_en
tetrachloroethane	140ug/L	EQS not available, value is PNEC (FW) - SW is 14	https://wfduk.org/sites/default/files/Media/TCE%20-%20UKTAG.pdf
chlorpyrifos-methyl.	.03ug/L		https://assets.publishing.service.gov.uk/media/65e5bc623f69457ff1036008/Chlorpyrifos_RME_Additional_information_26_Feb_2024.pdf
Cyanazine	2ug/L		https://www.alsenvironmental.co.uk/media-uk/pdf/brochures/als-europe-brochures-datasheets/pesticides-at-als---technical-publication.pdf
Tetrachlorvinphos	1000	Environmental quality guideline (EQG)	
DDT	0.025		https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:348:0084:0097:EN:PDF
alachlor	0.3		https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:348:0084:0097:EN:PDF

aldrin	sum 0.1		https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:348:0084:0097:EN:PDF
Butyl phthalate	20ug/L	Annual average, freshwater	https://www.wfduk.org/sites/default/files/Media/EA_BBP_EQS_%20UKTAG.pdf
MTBE	MAC = 90 ug/L		https://www2.mst.dk/Udgiv/publications/2014/01/978-87-93026-94-0.pdf