Technical Note

Project Title	Mobuoy Remediation Project				
Project No.	787-B030252				
Title	Mobuoy – Controlled Waters Assessment Criteria Review				
Date	02/04/2026	Revision	2	Status	Final
Prepared by	[redacted]	Checked by	[redacted]	Approved by	[redacted]

1.0 Introduction

Tetra Tech Limited (Tetra Tech) were appointed by the Northern Ireland Environment Agency (NIEA), an executive Agency within the Department of Agriculture Environment and Rural Affairs (DAERA) to produce a Technical Note in relation to the reliance on Environmental Quality Standards (EQS) used within the Tetra Tech report titled 'Mobuoy Road Waste Site Remediation - Updated Detailed Quantitative Risk Assessment (DQRA)', dated October 2022.

A site location plan is shown on Figure 1.

1.1 Background

The Mobuoy site lies on the outskirts of the city of Derry/Londonderry on the Mobuoy Road. It encompasses an area of approximately 46ha and currently consists of two distinct parcels of land either side of Mobuoy Road identified as City Industrial Waste (CIW) and Campsie Sand and Gravels (CS&G) as shown on Figure 2.

The site has been subject to extensive investigation and assessment over the years due to the presence of large volumes of illegally deposited waste on the site. In recent years a Draft Remediation Strategy was prepared in June 2023 for the site which was subject to public consultation which opened on 13th June 2025 and closed on 2nd October 2025. Following public consultation on the draft Remediation Strategy, which is an outline of proposed remediation solutions for the site, it is recognised that further detailed design work is planned.

This report focuses on an initial review of EQS versus Drinking Water Standards (DWS) used within the DQRA.

1.2 Legislation

The following table lists the relevant legislation for this report. The list is not exhaustive and does not include secondary legislation or subsequent amendments.

Table 1-1: Relevant Legislation

Acronyms	Title	Description	
LCRM 2020	UK Land Contamination: Risk Management 2020	Framework	Guidance on managing land contamination risk in the UK.
NI WFD 2017	The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017		Implements the European Union Water Framework Directive in Northern Ireland.
NI WFD 2015	The Water Framework Directive (Classification, Priority Substances and Shellfish Waters) Regulations (Northern Ireland) 2015	EQS	Regulations on classification and priority substances under the WFD including the provision of EQS's.
NI DWS 2017	The Water Supply (Water Quality) Regulations (Northern Ireland) 2017	DWS	Northern Ireland regulations setting statutory DWS.
WHO DWS 2022	World Health Organisation Guidelines for Drinking Water Quality, Fourth Edition incorporating the first and second addenda, 2022		World Health Organisation DWS.
WHO DWS 2008	World Health Organisation Petroleum Products in Drinking Water 2008		Incorporates the 4th edition and first and second addenda.
WHO DWS 2011	World Health Organisation Guidelines for Drinking Water Quality, Fourth Edition, WHO, 2011		World Health Organisation DWS guidance specific to petroleum-related contaminants in drinking water.

The table above also indicates which legislation are relevant to the DWS and EQS.

1.3 Aims and Objectives

The aim of this report is to complete a review of controlled water standards (where available), mainly a comparison of EQS and DWS.

The objectives are as follows:

- Review of assessment framework and criteria;
- Review of assessment methodology used within the 2022 DQRA for the Mobuoy site;
- Present and summarise the EQS and DWS in the form of an updated screening sheet;

- Compare the EQS and DWS in relation to the site, highlighting differences between the two standards; and,
- Provide recommendations for future work(s), if required.

1.4 Terms and Conditions

Tetra Tech's Terms and conditions are available within Appendix A.

2.0 Assessment Framework and Criteria

2.1 DQRA Background

The 2022 DQRA compared results from the groundwater, surface water and leachate samples in accordance with criteria set out in NI WFD 2017, NI WFD 2015, NI DWS 2017, WHO DWS 2022other appropriate guidance values. In respect of Petroleum Hydrocarbons, the WHO DWS 2008 have been considered.

As part of the screening within the DQRA, Tetra Tech adopted EQS sourced from the NI WFD 2015 as the primary Threshold Screening Values (TSVs) in the first instance due to the River Faughan and the shallow aquifer system representing critical receptors.

2.2 Assessment Framework

In Northern Ireland, the assessment framework set out in the LCRM 2020 and WFD 2017 defines how to identify, evaluate and manage risks from contaminated land in relation to controlled waters. The WFD 2015 provides the technical standards and EQS's used to screen, quantify and interpret potential impacts from contaminated land on groundwater and surface water quality. The criteria outlines which numeric standards that measured or modelled concentrations can be compared against depending on the receptor identified, which in the case of Mobuoy is freshwater body (River Faughan).

In the case of the Mobuoy site, the River Faughan is the primary receptor given its proximity to the site, groundwater flow direction and sensitivity. The river is considered primarily an ecological receptor which lies immediately adjacent to the west boundary of site. The River Faughan can also be considered a source of drinking water approximately 2.1km downstream of site with an abstraction located at Cloghole used as a potable supply. This supply is pumped to the Northern Ireland Water(NIW), Water Treatment Works (WTW) at Carmoney. Given this, it is considered prudent to consider both DWS and EQS.

The following DWS legislation are available, listed in order of preference:

- NI DWS 2017
- WHO DWS 2022
- WHO DWS 2011
- WHO DWS 2008

Various instances exist where TSVs are not available for certain contaminants within the DWS legislation. The WHO DWS 2022 provide a list of these within Table A3.2 of the standards.

Common rationale for excluding these from DWS are listed below:

- Unlikely to occur in drinking water
- Available data inadequate to permit derivation of health-based guideline value
- Occurs in drinking-water at concentrations well below those of health concern

A full list of the chemicals excluded from guideline value derivation within the WHO DWS 2022 are available to view within Appendix B.

3.0 Review of Assessment Criteria

A review of TSVs in line with the various legislation (listed in Table 1-1) was undertaken as part of this assessment for contaminants assessed within the DQRA 2022. During this assessment TSVs were compared between the EQS and DWS. Where TSVs existed for both the EQS and DWS, an assessment of the conservatism of the values was compared.

The following contaminants have TSVs for both the EQS and available DWS:

- Arsenic
- Benzene
- Benzo(a)pyrene
- Cadmium
- Carbon tetrachloride
- Copper
- Cyanide (Free)
- Cyclodiene pesticides (Sum of aldrin, dieldrin, endrin)
- 1,2-Dichloroethane
- Dichloromethane
- Ethylbenzene
- Hexachlorobutadiene
- Iron
- Lead
- Manganese
- Mercury
- Nickel
- Pentachlorophenol
- Toluene
- TPH EC5-EC7 aromatic (Benzene)
- TPH EC7-EC8 aromatic (Toluene)
- TPH EC8-EC10 aromatic (Xylene/ Ethylbenzene)
- TPH EC10-EC12 aromatic (Naphthalene)
- TPH EC16-EC21 aromatic (inc Benzo(a)pyrene)
- TPH EC21-EC35 aromatic (inc Benzo(g,h,i)perylene)

- Trichloroethene
- Trichloromethane (Chloroform)
- Xylenes

3.1 Environmental Quality Standards (EQS)

Of those listed in section 3.0 above, the following contaminants are considered to have more conservative values within the EQS when compared to the available DWS:

- Benzo(a)pyrene
- Cadmium
- Copper
- Cyanide (Free and Total)
- Cyclodiene pesticides (Sum of aldrin, dieldrin, endrin)
- Ethylbenzene
- Lead
- Mercury
- Nickel
- Pentachlorophenol
- Toluene
- TPH EC7-EC8 aromatic (Toluene)
- TPH EC8-EC10 aromatic (Xylene/ Ethylbenzene)
- TPH EC10-EC12 aromatic (Naphthalene)
- TPH EC16-EC21 aromatic (inc Benzo(a)pyrene)
- TPH EC21-EC35 aromatic (inc Benzo(g,h,i)perylene)
- Trichloromethane (Chloroform)
- Xylenes

3.2 Drinking Water Standards (DWS)

Of those listed in section 3.0 above, the following contaminants are considered to have more conservative values as part of the DWS when compared to the EQS:

- Arsenic
- Benzene
- Carbon tetrachloride
- 1,2-Dichloroethane

- Iron
- Manganese

3.3 Equal Conservatism

Of those listed in section 3.0 above, the following contaminants are considered to have values of equal conservatism as part of the Environmental Quality Standards (EQS) and Drinking Water Standards (DWS):

- Dichloromethane
- Hexachlorobutadiene
- TPH EC5-EC7 aromatic (Benzene)
- Trichloroethene

3.4 Comparison of TSVs

The following contaminants are considered to have been screened against appropriate TSVs within the 2022 DQRA. The justification for this is summarised for each contaminant below:

- Ammonia was compared to the EQS of 300ug/l (90%ile). No DWS is available for Ammonia.
- Antimony was compared to the NI DWS 2017 of 5ug/l which is considered to be more conservative than the WHO DWS 2022 value of 20ug/l.
- Boron was compared to the NI DWS 2017 of 1000ug/l. No EQS is available for Boron.
- Cadmium was compared to the EQS of 0.09ug/l (AA) and 0.6ug/l (MAC). This is considered to be a more conservative approach compared to using the NI DWS 2017 of 5ug/l.
- Chromium III was compared to the EQS of 4.7ug/l (AA). No DWS is available for Chromium VI.
- Chromium VI was compared to the EQS of 3.4ug/l (AA). No DWS is available for Chromium VI.
- Copper was compared to the MBAT PNEC of 34.94ug/l which is considered to be more conservative than the WHO DWS 2022 value of 2000ug/l.
- Lead was compared to the MBAT PNEC of 9.64ug/l which is considered to be more conservative than the NI DWS 2017 of 10ug/l.
- Molybdenum was compared to the WHO DWS 2008 of 70ug/l. No further DWS or EQS is available for Molybdenum.
- Mercury was compared to the EQS of 0.07ug/l (MAC) which is considered to be more conservative than the NI DWS 2017 value of 1/ug/l.

- Nickel was compared to a MBAT PNEC of 14.98ug/l which is considered to be more conservative than the DWS 2022 value of 70ug/l and the DWS 2024 updated value of 20ug/l.
- Nitrate was compared to the NI DWS 2017 of 50,000ug/l. No EQS is available.
- Nitrite was compared to the NI DWS 2017 of 500ug/l. No EQS is available.
- Zinc was compared to a MBAT PNEC of 37.15ug/l. No DWS is available for Zinc.
- Aromatic C5-C7 was compared to the WHO DWS 2008 of 10ug/l (EQS for proxy compound benzene was also 10ug/l)
- Aromatic C10-C12 was compared to the WHO DWS 2008 of 90ug/l (EQS for proxy compound naphthalene was 2ug/l)
- Aromatic C12-C16 was compared to the WHO DWS 2008 of 90ug/l (no EQS available)
- Aromatic C16-C21 was compared to the WHO DWS 2008 of 90ug/l (EQS for proxy compound benzo(a)pyrene was 0.00017ug/l (AA), 0.27ug/l (MAC))
- Aromatic C21-C35 was compared to the WHO DWS 2008 of 90ug/l (EQS for proxy compound benzo(ghi)perylene was 0.0082ug/l (MAC))
- MTBE was compared to the WHO DWS 2011 of 15ug/l. No EQS is available for MTBE.
- Toluene was compared to the EQS of 74ug/l which is considered to be more conservative than the WHO DWS 2022 of 700ug/l.
- Ethylbenzene was compared to the proposed EQS of 20ug/l (AA) and 200ug/l (MAC) which is considered more conservative than the WHO DWS 2022 of 300ug/l.
- Naphthalene was compared to the EQS of 2ug/l (AA). No DWS is available for this contaminant.
- Anthracene was compared to the EQS of 0.1ug/l (AA). No DWS is available for this contaminant.
- Fluoranthene was compared to the EQS of 0.0063ug/l (AA). No DWS is available for this contaminant.
- Ammonia was compared to the EQS of 0.3mg/l. No DWS is available for this contaminant.
- Sulphate was compared to the NI DWS 2017 of 250,000ug/l. No EQS is available for this contaminant.
- Chloride was compared to the NI DWS 2017 of 250,000ug/l. No EQS is available for this contaminant.
- Sodium was compared to the NI DWS 2017 of 200,000ug/l. No EQS is available for this contaminant.
- Benzo(b)fluoranthene was compared to EQS of 0.017ug/l (AA). No DWS is available.

- Benzo(k)fluoranthene was compared to EQS of 0.017ug/l (AA). No DWS is available.
- Benzo(a)pyrene was compared to EQS of 0.00017ug/l (AA) which is considered more conservative than NI DWS 2017 of 0.01ug/l.
- Benzo(ghi)perylene was compared to was compared to EQS of 0.0082ug/l (AA). No DWS is available.

3.5 DWS preferred where more conservative

The following contaminants were screened against EQS within the 2022 DQRA, however DWS are more conservative:

- Iron was compared to the EQS of 1000ug/l compared to NI DWS 2017 values of 200ug/l.
- Arsenic was compared to the EQS of 50ug/l compared to WHO DWS 2022 values of 10ug/l.
- Manganese was compared to the MBAT PNEC of 276.92ug/l compared to NI DWS 2017 values of 50ug/l.
- Benzene was compared to the EQS of 10ug/l compared to the DWS 2017 value of 1ug/l.
- Carbon tetrachloride was compared to the EQS of 12ug/l compared to the WHO DWS 2022 value of 4ug/l.
- 1,2-Dichloroethane was compared to the EQS of 10ug/l compared to the NI DWS 2017 value of 3ug/l.

4.0 Conclusions and Recommendations

Tetra Tech have completed an initial comparison of the EQS versus DWS used within the DQRA. This assessment framework and criteria adopted within the DQRA remain appropriate for screening potential impacts on controlled waters, given the River Faughan's close proximity and its ecological sensitivity.

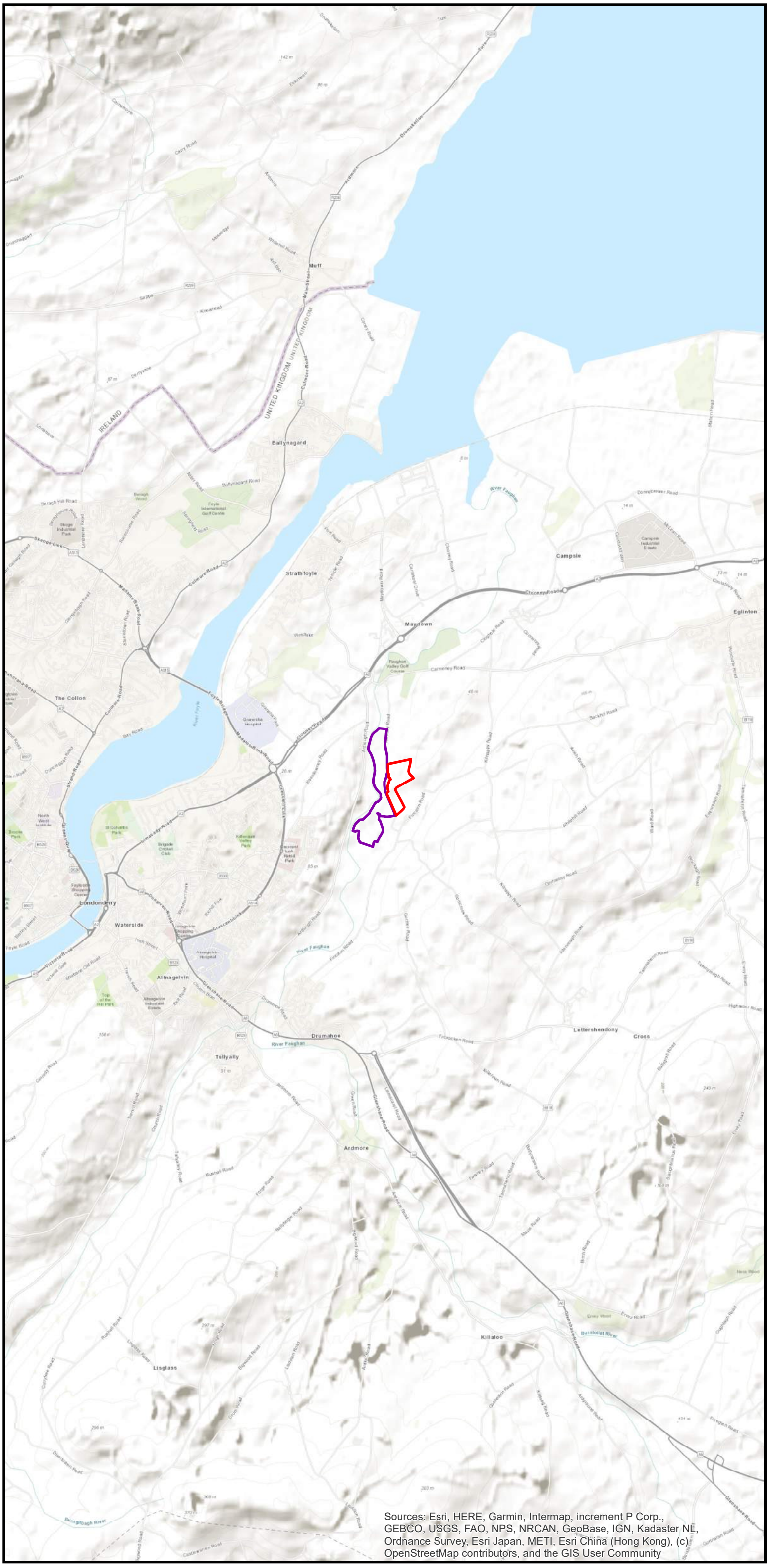
In the vast majority of cases where both EQS and DWS are available, the DQRA has applied the more conservative screening value. This supports the conclusion that the DQRA's screening approach was generally precautionary and appropriate for protecting the primary controlled-water receptor (the River Faughan).

A small number of contaminants (notably arsenic, iron, manganese, benzene, 1,2 dichloroethane and carbon tetrachloride) were screened using EQS in the DQRA while the available DWS are more conservative. For these contaminants, adoption of the more conservative DWS should be considered in the future DQRA updates.

On the basis of this review, no further immediate technical action is required specifically because of the EQS versus DWS comparison. However, the planned updates to the DQRA should incorporate consideration of the more conservative DWS for the contaminants identified above to ensure that both ecological and drinking-water receptors remain fully protected as the project progresses to detailed design and implementation.

Figures

Figure 1. Site Location Plan



Note:

Drawn by: [redacted]

Checked by: [redacted]

Office: Belfast Revision: No.1

Client: NIEA Project: B030252 - Mobuoy Road Remediation

0 850 1,700 3,400 Meters

Date: 30/06/2022

Locksley Business Park
Montgomery Road
Belfast
BT6 9UP
Tel: 028 9070 6000
Email: ireland@tetratech.com

Appendix A – Report Conditions

This report is produced solely for the benefit of NIEA and DAERA and no liability is accepted for any reliance placed on it by any other party unless specifically agreed in writing otherwise.

This report is prepared for the proposed uses stated in the report and should not be used in a different context without reference to TTech. In time improved practices, fresh information or amended legislation may necessitate a re-assessment. Opinions and information provided in this report are on the basis of TTech using due skill and care in the preparation of the report.

This report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections. Environmental conditions can vary, and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times.

This report is limited to those aspects reported on, within the scope and limits agreed with the client under our appointment. It is necessarily restricted, and no liability is accepted for any other aspect. It is based on the information sources indicated in the report. Some of the opinions are based on unconfirmed data and information and are presented as the best obtained within the scope of this report.

Reliance has been placed on the documents and information supplied to TTech by others but no independent verification of these has been made and no warranty is given on them. No liability is accepted, or warranty given in relation to the performance, reliability, standing etc. of any products, services, organisations or companies referred to in this report.

Whilst skill and care have been used, no investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions.

Although care is taken to select monitoring and survey periods that are typical of the environmental conditions being measured, within the overall reporting programme constraints, measured conditions may not be fully representative of the actual conditions. Any predictive or modelling work, undertaken as part of the commission, will be subject to limitations including the representativeness of data used by the model and the assumptions inherent within the approach used. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions.

The potential influence of our assessment and report on other aspects of any development or future planning requires evaluation by other parties involved.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. TTech accept no liability for issues with performance arising from such factors.

Appendix B – Chemicals excluded from Guideline Value Derivation

ANNEX 3

Chemical summary tables

Table A3.1 Chemicals excluded from guideline value derivation

Chemical	Reason for exclusion
Amitraz	Degrades rapidly in the environment and is not expected to occur at measurable concentrations in drinking-water supplies
Chlorobenzilate	Unlikely to occur in drinking-water
Chlorothalonil	Unlikely to occur in drinking-water
Cypermethrin	Unlikely to occur in drinking-water
Deltamethrin	Unlikely to occur in drinking-water
Diazinon	Unlikely to occur in drinking-water
Dinoseb	Unlikely to occur in drinking-water
Ethylene thiourea	Unlikely to occur in drinking-water
Fenamiphos	Unlikely to occur in drinking-water
Formothion	Unlikely to occur in drinking-water
Hexachlorocyclohexanes (mixed isomers)	Unlikely to occur in drinking-water
MCPB[a]	Unlikely to occur in drinking-water
Methamidophos	Unlikely to occur in drinking-water
Methomyl	Unlikely to occur in drinking-water
Mirex	Unlikely to occur in drinking-water
Monocrotophos	Has been withdrawn from use in many countries and is unlikely to occur in drinking-water
Oxamyl	Unlikely to occur in drinking-water
Phorate	Unlikely to occur in drinking-water
Propoxur	Unlikely to occur in drinking-water
Pyridate	Not persistent and only rarely found in drinking-water
Quintozene	Unlikely to occur in drinking-water
Toxaphene	Unlikely to occur in drinking-water
Triazophos	Unlikely to occur in drinking-water
Trichlorfon	Unlikely to occur in drinking-water

[a] 4-(4-chloro-o-tolyloxy)butyric acid.

Table A3.2 Chemicals for which guideline values have not been established[a]

Chemical	Reason for not establishing a guideline value
Aluminium	The health-based value exceeds practicable levels based on optimization of the coagulation process in drinking-water plants using aluminium-based coagulants: 0.1 mg/l or less in large water treatment facilities and 0.2 mg/l or less in small facilities
Ammonia	Occurs in drinking-water at concentrations well below those of health concern
Anatoxins (cyanobacterial toxins)	Available data inadequate to permit derivation of a health-based guideline value
Asbestos	No consistent evidence that ingested asbestos is hazardous to health and available data inadequate to permit derivation of health-based guideline value
Bentazone	Occurs in drinking-water or drinking-water sources at concentrations well below those of health concern
Beryllium	Rarely found in drinking-water at concentrations of health concern
Bromide	Occurs in drinking-water at concentrations well below those of health concern
Bromochloroacetate	Available data inadequate to permit derivation of health-based guideline value
Bromochloroacetonitrile	Available data inadequate to permit derivation of health-based guideline value
Bacillus thuringiensis israelensis (Bti)	Not considered appropriate to set guideline values for pesticides used for vector control in drinking-water
Carbaryl	Occurs in drinking-water at concentrations well below those of health concern
Chloral hydrate	Occurs in drinking-water at concentrations well below those of health concern
Chloride	Not of health concern at levels found in drinking-water[b]
Chlorine dioxide	Reduced primarily to chlorite, chlorate and chloride in drinking-water, and to chlorite and chloride upon ingestion; the provisional guideline values for chlorite and chlorate are protective for potential toxicity from chlorine dioxide
Chloroacetones	Available data inadequate to permit derivation of health-based guideline values for any of the chloroacetones
2-Chlorophenol	Available data inadequate to permit derivation of health-based guideline value
Chloropicrin	Available data inadequate to permit derivation of health-based guideline value
Cyanide	Occurs in drinking-water at concentrations well below those of health concern, except in emergency situations following a spill to a water source
Cyanogen chloride	Occurs in drinking-water at concentrations well below those of health concern
Dibromoacetate	Available data inadequate to permit derivation of health-based guideline value

Table A3.2 (continued)

Chemical	Reason for not establishing a guideline value
Dichloramine	Available data inadequate to permit derivation of health-based guideline value
1,3-Dichlorobenzene	Available data inadequate to permit derivation of health-based guideline value
1,1-Dichloroethane	Available data inadequate to permit derivation of health-based guideline value
1,1-Dichloroethene	Occurs in drinking-water at concentrations well below those of health concern
2,4-Dichlorophenol	Available data inadequate to permit derivation of health-based guideline value
1,3-Dichloropropane	Available data inadequate to permit derivation of health-based guideline value
Dichlorvos	Occurs in drinking-water or drinking-water sources at concentrations well below those of health concern
Dicofol	Unlikely to occur in drinking-water or drinking-water sources[c]
Di(2-ethylhexyl)adipate	Occurs in drinking-water at concentrations well below those of health concern
Diflubenzuron	Not considered appropriate to set guideline values for pesticides used for vector control in drinking-water
Diquat	Occurs in drinking-water or drinking-water sources at concentrations well below those of health concern
Endosulfan	Occurs in drinking-water at concentrations well below those of health concern
Fenitrothion	Occurs in drinking-water at concentrations well below those of health concern
Fluoranthene[d]	Occurs in drinking-water at concentrations well below those of health concern
Formaldehyde	Occurs in drinking-water at concentrations well below those of health concern
Glyphosate and AMPA[e]	Occur in drinking-water at concentrations well below those of health concern
Hardness	Not of health concern at levels found in drinking-water[b]
Heptachlor and heptachlor epoxide	Occur in drinking-water at concentrations well below those of health concern
Hexachlorobenzene	Occurs in drinking-water at concentrations well below those of health concern
Hydrogen sulfide	Not of health concern at levels found in drinking-water[b]
Inorganic tin	Occurs in drinking-water at concentrations well below those of health concern
Iodine	Available data inadequate to permit derivation of health-based guideline value. Additionally, occurrence in drinking-water is usually low. Although higher levels of exposure may occur when iodine is used as a drinking-water disinfectant at the point of use, extended periods of exposure to iodine through water disinfection are unlikely.

Table A3.2 (continued)

Chemical	Reason for not establishing a guideline value
Iron	Not of health concern at levels causing acceptability problems in drinking-water[a]
Malathion	Occurs in drinking-water at concentrations well below those of health concern
MCPA[f]	Occurs in drinking-water or drinking-water sources at concentrations well below those of health concern
Methoprene	Not considered appropriate to set guideline values for pesticides used for vector control in drinking-water
Methyl parathion	Occurs in drinking-water at concentrations well below those of health concern
Methyl *tertiary*-butyl ether (MTBE)	Any guideline that would be derived would be significantly higher than concentrations at which MTBE would be detected by odour
Molybdenum	Occurs in drinking-water at concentrations well below those of health concern
Monobromoacetate	Available data inadequate to permit derivation of health-based guideline value
Monochlorobenzene	Occurs in drinking-water at concentrations well below those of health concern, and health-based value would far exceed lowest reported taste and odour threshold
MX[g]	Occurs in drinking-water at concentrations well below those of health concern
Nitrobenzene	Rarely found in drinking-water at concentrations of health concern
Novaluron	Not considered appropriate to set guideline values for pesticides used for vector control in drinking-water
Organotins	
TBT, TPT, DBT, DOT[h]	Occurs in drinking-water at concentrations well below those of health concern
MMT, DMT, DMTC[i]	Unnecessary since their use as stabilizers in polyvinyl chloride and chlorinated polyvinyl chloride are normally controlled by product specification
Other organotins	Available data inadequate to permit derivation of health-based guideline value
Parathion	Occurs in drinking-water at concentrations well below those of health concern
Permethrin	Not recommended for direct addition to drinking-water as part of WHO's policy to exclude the use of any pyrethroids for larviciding of mosquito vectors of human disease
Petroleum products	Taste and odour will in most cases be detectable at concentrations below those of health concern, particularly with short-term exposure
pH[i]	Not of health concern at levels found in drinking-water[j]
2-Phenylphenol and its sodium salt	Occurs in drinking-water at concentrations well below those of health concern

Table A3.2 (continued)

Chemical	Reason for not establishing a guideline value
Pirimiphos-methyl	Not recommended for direct application to drinking-water unless no other effective and safe treatments are available
Potassium	Occurs in drinking-water at concentrations well below those of health concern
Propanil	Readily transformed into metabolites that are more toxic; a guideline value for the parent compound is considered inappropriate, and there are inadequate data to enable the derivation of guideline values for the metabolites
Pyriproxyfen	Not considered appropriate to set guideline values for pesticides used for vector control in drinking-water
Silver	Available data inadequate to permit derivation of health-based guideline value and usually occurs in drinking water at concentrations well below those of health concern
Sodium	Not of health concern at levels found in drinking-water[b]
Spinosad	Not considered appropriate to set guideline values for pesticides used for vector control in drinking-water
Sulfate	Not of health concern at levels found in drinking-water[b]
Temephos	Not considered appropriate to set guideline values for pesticides used for vector control in drinking-water
Total dissolved solids	Not of health concern at levels found in drinking-water[b]
Trichloramine	Available data inadequate to permit derivation of health-based guideline value
Trichloroacetonitrile	Available data inadequate to permit derivation of health-based guideline value
Trichlorobenzenes (total)	Occurs in drinking-water at concentrations well below those of health concern, and health-based value would exceed lowest reported odour threshold
1,1,1-Trichloroethane	Occurs in drinking-water at concentrations well below those of health concern
Zinc	Not of health concern at levels found in drinking-water[b]

[a] Health-based values have been developed for a number of these chemicals, whereas, for anatoxins and silver, provisional reference values have been established. These values may be useful to guide actions by Member States when there is a reason for local concern. For further information on guideline values, health-based values and provisional reference values, see section 8.2. Where health-based values or provisional reference values have been established, this information can be found in the chemical fact sheets in chapter 12.
[b] May affect acceptability of drinking-water (see chapter 10).
[c] Although dicofol does not fulfil one of the three criteria for evaluation in the Guidelines, a background document has been prepared and a health-based value has been established, in response to a request from Member States for guidance.
[d] See fact sheet on polynuclear aromatic hydrocarbons.
[e] Aminomethylphosphonic acid.
[f] (2-Methyl-4-chlorophenoxy)acetic acid.
[g] 3-Chloro-4-dichloromethyl-5-hydroxy-2(5H)-furanone.
[h] Tributyltin, triphenyltin, dibutyltin, and di-*n*-octyltin respectively.
[i] Monomethyltin dimethyltin and dimethyltin dichloride, respectively.
[j] An important operational water quality parameter.

Appendix C – Screening Assessment

Name of Determinand	River Water EQS		Drinking Water Standards	Which TSV is more conservative?	DWS Origin	
All units µg/l unless otherwise stated						
Electrical Conductivity (µS/cm)			2,500	n/a	NI DWS 2017	Measured at 20 degrees celsius
pH (pH value)[4]	6-9 (5% to 95%ile - good quality)		6.5-9.5	n/a	NI DWS 2017	Note this is at consumer tap.
Dissolved oxygen[4]	75% Saturation (10%ile)	Types 1,2,4,6 and salmonid - 'good'		n/a		
	60% Saturation (10%ile)	Types 3,5 and 7 - 'good'		n/a		
BOD (Biological Oxygen Demand)[4]	4000 (90%ile)	Types 1,2,4 and 6, and Salmonid Waters - 'good'		n/a		
	5000 (90%ile)	Types 3,5 and 7 - 'good'		n/a		
Acrylamide			0.1	n/a	NI DWS 2017	
Alachlor[2]	0.3 (AA), 0.7 (MAC)		20	EQS	WHO DWS 2022	
Aldicarb			10	n/a	WHO DWS 2022	
Aldrin			0.03	n/a	WHO DWS 2022	Note this is at consumer tap.
Aluminium			200	n/a	NI DWS 2017	Note this is at consumer tap.
Ammonium			500	n/a	NI DWS 2017	Note this is at consumer tap.
Total Ammonia as Nitrogen[4]	300 (90%ile)	Types 1,2,4 and 6		n/a		
	600 (90%ile)	Types 3,5 and 7		n/a		
Anthracene[2]	0.1 (AA), 0.1(MAC)			n/a		
Antimony			5	n/a	NI DWS 2017	
Arsenic	50 (AA)(Dissolved As)		10	DWS	NI DWS 2017	
Atrazine[2]	0.6 (AA), 2(MAC)		100	EQS	WHO DWS 2022	
Barium			1300	n/a	WHO DWS 2022	
Benzene[2]	10 (AA), 50(MAC)		1	DWS	NI DWS 2017	
Benzo(a)pyrene[2]	0.00017 (AA), 0.27 (MAC)		0.01	EQS	NI DWS 2017	Note this is at consumer tap.
Benzo(b)fluoranthene	0.017 (MAC)			n/a		
Benzo(k)fluoranthene	0.017 (MAC)			n/a		
Benzo(ghi)perylene	0.0082 (MAC)			n/a		
Benzyl butyl phthalate	7.5 (AA), 51 (95%ile)			n/a		
Boron			1000	n/a	NI DWS 2017	
Bromate			10	n/a	NI DWS 2017	
Brominated diphenyl ether	0.14 (MAC)			n/a		
Bromodichloromethane			60	n/a	WHO DWS 2022	
Bromoform			100	n/a	WHO DWS 2022	
C10-13 chloroalkanes[2]	0.4 (AA), 1.4 (MAC)			n/a		
Cadmium (and its compounds)[1]	≤0.08 (AA), <0.45'ith'[1]	$CaCO_3$ <40 mg/l	5	EQS	NI DWS 2017	
	0.08 (AA), 0.45 (MAC)	$CaCO_3$ 40 - <50 mg/l				
	0.09 (AA), 0.6 (MAC)	$CaCO_3$ 50 - <100 mg/l				
	0.15 (AA), 0.9 (MAC)	$CaCO_3$ 100 - <200 mg/l				
	0.25 (AA), 1.5 (MAC)	$CaCO_3$ >200 mg/l				
Carbendazim	0.15 (AA), 0.7 (95%ile)			n/a		
Carbofuran			7	n/a	WHO DWS 2022	
Carbon tetrachloride[2]	12 (AA)		4	DWS	WHO DWS 2022	
Chlorate			700	n/a	WHO DWS 2022	
Chlordane			0.2	n/a	WHO DWS 2022	
Chloride (water soluble)			250,000	n/a	NI DWS 2017	Supply point
Chlorine	2 (AA), 5 (95%ile)		5,000	EQS	WHO DWS 2022	
Chlortie			700	n/a	WHO DWS 2022	
Chlorfenvinphos[2]	0.1 (AA), 0.3 (MAC)			n/a		
4-Chloro-3-Methyl-Phenol[2,3]	40 (AA)			n/a		
Chloroform (Trichloromethane)	2.5(AA)		300	EQS	WHO DWS 2022	
Chloronitrotoluenes[2,3]	10 (AA)			n/a		
2-Chlorotoluene[2,3]	50 (AA)			n/a		
Chlorpyrifos[2,3]	0.03 (AA), 0.1 (MAC)		30	EQS	WHO DWS 2022	
Chlorothalonil	0.035 (AA), 1.2 (95%ile)			n/a		
Chlortoluron			30	n/a	WHO DWS 2022	
Chromium (Total)			50	n/a	The Water Supply (Water Quality) Regulations (Northern Ireland) 2017	
Chromium III	4.7 (AA), 32 (95%ile)			n/a		
Chromium VI	3.4 (AA)			n/a		
Clostridium perfringens (including spores) (count per 100ml)			0	n/a	NI DWS 2017	Sussiv point
Coliform bacteria (count per 100ml)			0	n/a	NI DWS 2017	Note this is at consumer tap.
Copper[2]	1 (AA) bioavailable		2,000	EQS		
Cyanazine			0.6	n/a	NI DWS 2017	
Cyanide (free)	1 (AA), 5 (95%ile)		50	EQS	WHO DWS 2022	
Cyanogen chloride[6]			70	n/a	NI DWS 2017	From WHO DWS 2022 - As cyanogen chloride is unlikely to be found in drinking-water at concentrations that are of health concern, it is considered unnecessary to develop a formal guideline value for cyanogen chloride. Instead, for guidance purposes, a health-based value is derived based on cyanide
Cyclodiene pesticides (Sum of aldrin, dieldrin, endrin)[2]	0.01 (AA)		0.03	EQS	DWS 2006	
Cylindrospermopsins			0.7	n/a	WHO DWS 2022	
Cypermethrin	0.00008 (AA), 0.0006 (MAC)			n/a	WHO DWS 2022	
2,4-D (2,4-dichlorophenoxyacetic acid)[1]	0.3(AA), 1.3(95%ile)		30	EQS	WHO DWS 2022	
2,4-Dichlorophenoxybutyric acid.			90	n/a	WHO DWS 2022	
DDT and metabolites			1	n/a	WHO DWS 2022	
DDT (Total all 4 isomers)[2]	0.025 (AA)			n/a		
Para- Para- DDT[2]	0.01 (AA)			n/a		
Diazinon[2]	0.01 (AA), 0.02 (95%ile)			n/a		
Dibromoacetonitrile			70	n/a	WHO DWS 2022	
Dibromochloromethane			100	n/a	WHO DWS 2022	
1,2-Dibromo-3-chloropropane			1	n/a	WHO DWS 2022	
1,2-Dibromoethane			0.4	n/a	WHO DWS 2022	
Dichloroacetate			50	n/a	WHO DWS 2022	
Dichloroacetonitrile			20	n/a	WHO DWS 2022	
3,4-Dichloroaniline	0.2 (AA), 5.4 (95%ile)			n/a		
1,2-Dichlorobenzene			1,000	n/a	WHO DWS 2022	
1,4-Dichlorobenzene			300	n/a	WHO DWS 2022	
1,2-Dichloroethane[2]	10 (AA)		1	DWS	NI DWS 2017	
1,2-Dichloroethene			50	n/a	WHO DWS 2022	
Dichloromethane[2]	20 (AA)		20	EQS/DWS	WHO DWS 2022	
2,4-Dichlorophenol[2]	4.2 (AA), 140 (95%ile)			n/a		
2,4-Dichlorophenoxyacetic acid (free acid)	0.3 (AA), 1.3 (95%ile)		30	EQS		
4-(2,4-Dichlorophenoxy)butyric acid (2,4 - DB)			90	n/a	DWS 2011	
1,2-Dichloropropane			40	n/a	WHO DWS 2022	
1,3-Dichloropropene			20	n/a	WHO DWS 2022	
Dichlorprop			100	n/a	WHO DWS 2022	
Di(2-ethylhexyl)phthalate	1.3 (AA)		8	EQS	WHO DWS 2022	
Dichloroacetic acid			50	n/a	WHO DWS 2022	
Dichlorvos	0.0006 (AA), 0.0007 (MAC)		No Guideline Value	n/a	According to WHO DWS 2022	
Dieldrin			0.03	n/a	DWS 2017	Note this is at consumer tap.
Dimethoate	0.48 (AA), 4 (95%ile)		6	EQS	WHO DWS 2022	
1,4-Dioxane			50	n/a	WHO DWS 2022	
Diuron[2]	0.2 (AA), 1.8 (MAC)			n/a		
Ethylenediaminetetraacetic acid (EDTA)			600	n/a	WHO DWS 2022	
Endrin			0.6	n/a	WHO DWS 2022	
Endosulphan[2,4]	0.005 (AA), 0.01 (MAC)			n/a		
Enterococci (count per 100ml)			0	n/a	NI DWS 2017	Note this is at consumer tap.
Epichlorohydrin			0.1	n/a	NI DWS 2017	
Escherichia coli (E. Coli) (count per 100ml			0	n/a	NI DWS 2017	
Ethylbenzene[3]	20(AA), 200 (MAC)		300	EQS	WHO DWS 2022	
Fenbrothion[2,4]	0.01 (AA)			n/a		
Fenpropp			9	n/a	WHO DWS 2022	
Fluoranthene[2]	0.0063 (AA), 0.12 (MAC)			n/a		
Fluoride			1,500	n/a	NI DWS 2017	
Formaldehyde[6]	5 (AA), 50 (MAC)		No Guideline Value	n/a	According to WHO DWS 2022	
Glyphosate	196 (AA), 398 (95%ile)		No Guideline Value	n/a	According to WHO DWS 2022	
Heptachlor			0.03	n/a	NI DWS 2017	Note this is at consumer tap.
Heptachlor epoxide			0.03	n/a	NI DWS 2017	Note this is at consumer tap.
Hexachlorobenzene[2]	0.05 (MAC)		No Guideline Value	n/a	According to WHO DWS 2022	
Hexachlorobutadiene[2]	0.6 (MAC)		0.6	EQS/DWS	WHO DWS 2022	
Hexachlorocyclohexane[2]	0.02 (AA), 0.04 (MAC)			n/a		
Hydroxyatrazine			200	n/a		
Indicative dose (for radioactivity)(mSv)			0.1	n/a	NI DWS 2017	Supply point
Iron (dissolved)	1000 (AA)		200	DWS	NI DWS 2017	Note this is at consumer tap.
Isoproturon [2]	0.3 (AA), 1 (MAC)		9	EQS	WHO DWS 2022	
Lead (and its compounds)[1,7]	1.2 bioavailable (AA), 14 (MAC)		10	EQS - not conclusive	NI DWS 2017	
Lindane			2	n/a	WHO DWS 2022	
Linuron	0.5 (AA), 0.9 (95%ile)			n/a		
Malathion[2,4]	0.01 (AA)		No Guideline Value	n/a	According to WHO DWS 2022	Occurs in drinking-water at concentrations well below those of health concern (WHO DWS 2022)
Manganese[7]	123 (AA) bioavailable		50	DWS	NI DWS 2017	
Mecoprop	18 (AA), 187 (95%ile)		10	DWS	WHO DWS 2022	
Mercury (and its compounds)[1]	0.07 (MAC)		1	EQS	NI DWS 2017	Note this is at consumer tap.
Methiocarb[2]	0.01 (AA), 0.77 (95%ile)			n/a		
Methoxychlor			20	n/a	WHO DWS 2022	
2-Methyl-4-Chlorophenoxyacetic acid (MCPA)			2	n/a	DWS 2011	Occurs in drinking-water at concentrations well below those of health concern (WHO DWS 2022)
Metolachlor			10	n/a	WHO DWS 2022	
Microcystin-LR			1	n/a	WHO DWS 2022	
Molinate			6	n/a	WHO DWS 2022	
Molybdenum			70	n/a	DWS 2008	Occurs in drinking-water at concentrations well below those of health concern (WHO DWS 2022)
Monochloramine			3000	n/a	WHO DWS 2022	
Monochloroacetate (Monochloroacetic Acid)			20	n/a	WHO DWS 2022	
MTBE			15	n/a	DWS 2011	Any guideline that would be derived would be significantly higher than concentrations at which MTBE would be detected by odour (WHO DWS 2022)
Naphthalene[2]	2 (AA), 130 (MAC)			n/a		
Nickel(and its compounds)[1,7]	4 bioavailable (AA), 34 (MAC)		20	EQS - not conclusive	NI DWS 2017	
Nitrate			50,000	n/a	NI DWS 2017	
Nitrilotriacetic acid (NTA)			200	n/a	WHO DWS 2022	
Nitrite (as NO_2^-)			500 (at consumer tap) 100 (at water treatment works)	n/a	NI DWS 2017	
N-Nitrosodimethylamine (NMDA)			0.1	n/a	WHO DWS 2022	
Nonylphenol (4 - Nonylphenol) [3]	0.3 (AA), 2 (MAC)			n/a		
Octylphenol[3]	0.1 (AA)			n/a		
PAH: Sum of benzo(b)fluoranthene,benzo(k)fluoranthene, benzo(g,h,i)perylene and indeno(1,2,3-cd)pyrene[2]			0.1	n/a	NI DWS 2017	
Pendimethalin[2]	0.3 (AA), 0.58(95%ile)		20	EQS	WHO DWS 2022	
Pentachlorobenzene[2,4]	0.007 (AA)			n/a		
Pentachlorophenol [2]	0.4 (AA), 1 (MAC)		9	EQS	WHO DWS 2022	
Perchlorate			70	n/a	WHO DWS 2022	
Perfluorooctane sulfonate (PFOS) and its derivatives	0.000065 (AA), 36(MAC)			n/a		
Permethrin (cis- and trans-)	0.001 (AA), 0.01 (95%ile)		No Guideline Value	n/a	WHO DWS 2022	Not recommended for direct addition to drinking-water as part of WHO's policy to exclude the use of any pyrethroids for larviciding of mosquito vectors of human disease (WHO DWS 2022)
Pesticides: Other individual pesticides			0.1	n/a	DWS 2017	Note this is at consumer tap.
Pesticides: Total			0.5	n/a	NI DWS 2017	
PFOS and PFOA[9]			0.1	n/a	DWI - Guidance on the Water Supply (Water Quality) Regulations 2016 (as amended) for England and Water Supply (Water Quality) Regulations 2018 for Wales specific to PFAS (per- and polyfluoroalkyl substances) in drinking water	
Phenol	7.7 (AA), 46 (95%ile)			n/a		
Phosphorous[4]	12.65 - minimum good annual mean value calculated from Schedule 1, Table 5 of Water Framework Directions 2015.			n/a		
Polynuclear Aromatic Hydrocarbons			0.7	n/a	WHO DWS 2022	
Pyriproxyfen			300	n/a	DWS 2008	Not considered appropriate to set guideline values for pesticides used for vector control in drinking-water (WHO DWS 2022)
Radion (for radioactivity) (Bq/l)			100	n/a	NI DWS 2017	Supply point
Saxitoxins (cyanobacterial toxins)			3	n/a	WHO DWS 2022	
Selenium			10	n/a	NI DWS 2017	
Silver[8]	0.05 (AA), 0.1 (MAC)		No Guideline Value	n/a	According to WHO DWS 2022	Available data inadequate to permit derivation of health-based guideline value, and silver usually occurs in drinking-water at concentrations well below those of health concern (WHO DWS 2022)
Simazine[2]	1 (AA), 4 (MAC)		2	EQS - not conclusive	WHO DWS 2022	
Sodium			200,000	n/a	NI DWS 2017	Not of health concern at levels found in drinking-water (WHO DWS 2022)
Sodium dichloroisocyanurate			50,000	n/a	WHO DWS 2022	
Sodium dichloroisocyanurate (as cyanuric acid)			40,000	n/a	DWS 2011	
Styrene			20	n/a	WHO DWS 2022	
Sulphate			250,000	n/a	NI DWS 2017	Supply point
Terbuthylazine			7	n/a	WHO DWS 2022	
Tetrachloroethane	140 (AA), 1848 (95%ile)			n/a		
Tetrachloroethene[2]			10	n/a	NI DWS 2017	
Tetrachloromethane			3	n/a	NI DWS 2017	Note this is at consumer tap.
Tin[3]	25 (AA)		No Guideline Value	n/a	According to WHO DWS 2022	Occurs in drinking-water at concentrations well below those of health concern (WHO DWS 2022)
Toluene[3]	74 (AA), 380 (95%ile)		700	EQS	WHO DWS 2022	
TPH EC5-EC7 aromatic (Benzene)[3]	10 (AA), 50(MAC)		10	EQS/DWL	WHO Petroleum Products in Drinking Water 2008	
TPH EC7-EC8 aromatic (Toluene)	74 (AA), 380 (95%ile)		700	EQS	WHO DWS 2022	
TPH EC8-EC10 aromatic (Xylene/ Ethylbenzene)	20(AA)		300	EQS	WHO Petroleum Products in Drinking Water 2008	
TPH EC10-EC12 aromatic (Naphthalene)[3]	2(AA)		90	EQS	WHO Petroleum Products in Drinking Water 2008	
TPH EC12-EC16 aromatic			90	n/a	WHO Petroleum Products in Drinking Water 2008	
TPH EC16-EC21 aromatic (inc Benzo(a)pyrene)[2]	0.00017 (AA), 0.27 (MAC)		90	EQS	WHO Petroleum Products in Drinking Water 2008	
TPH EC21-EC35 aromatic (inc Benzo(g,h,i)perylene)[2]	0.0082 (MAC)		90	EQS	WHO Petroleum Products in Drinking Water 2008	
TPH EC5-EC6 aliphatic			15,000	n/a	WHO Petroleum Products in Drinking Water 2008	
TPH EC7-EC8 aliphatic			15,000	n/a	WHO Petroleum Products in Drinking Water 2008	
TPH EC9-EC10 aliphatic			300	n/a	WHO Petroleum Products in Drinking Water 2008	
TPH EC10-EC12 aliphatic			300	n/a	WHO Petroleum Products in Drinking Water 2008	
TPH EC12-EC16 aliphatic			300	n/a	WHO Petroleum Products in Drinking Water 2008	
TPH EC16-EC21 aliphatic			-	n/a		
TPH EC21-EC35 aliphatic			-	n/a		
Tributyltin compounds[2]	0.0002(AA), 0.0015(MAC)			n/a		
Trichloroacetate			200	n/a	WHO DWS 2022	
Trichloroacetic acid			200	n/a	WHO DWS 2022	
Trichlorobenzenes[3]	0.4 (AA)		No Guideline Value	n/a	According to WHO DWS 2022	Occur in drinking-water at concentrations well below those of health concern, and health-based value would exceed lowest reported odour threshold (WHO DWS 2022)
Trichloroethene[2]	10 (AA)		10	EQS/DWL	NI DWS 2017	
1,1,1-Trichloroethane[2,4]	100(AA)		No Guideline Value	n/a	According to WHO DWS 2022	Occur in drinking-water at concentrations well below those of health concern (WHO DWS 2022)
1,1,2-Trichloroethane[2,4]	400 (AA)			n/a		
Trichloromethane[2] (Chloroform)	2.5(AA)		300	EQS	DWS 2011	
2,4,6 Trichlorophenol			200	n/a	WHO DWS 2022	
2,4,5-Trichlorophenoxyacetic acid (2,4,5 - T)			9	n/a	WHO DWS 2022	
Triclosan	0.1 (AA), 0.28 (95%ile)			n/a		
Trifluralin[2]	0.03 (AA)		20	EQS	WHO DWS 2022	
Trihalomethanes (sum of chloform, bromoform, dibromochloromethane and bromodichloromethane)			100	n/a	NI DWS 2017	
Trihexmiltin and its derivatives[2,4]	0.02 (AA)			n/a		
Tritium (for radioactivity) (Bq/l)			100	n/a	NI DWS 2017	Sussiv point
Uranium			30	n/a	WHO DWS 2022	
Vanadium[8]	20(AA)	0-200 mg/l $CaCO_3$		n/a		
	60(AA)	200+ mg/l $CaCO_3$		n/a		
Vinyl Chloride			0.5	n/a	NI DWS 2017	
Xylenes [3]	30 (AA)		500	EQS	WHO DWS 2022	
Zinc (total)[7]	10.9 bioavailable + ABC		No Guideline Value	n/a	WHO DWS 2022	Not of health concern at levels found in drinking-water (WHO DWS 2022)

Use these values for initial assessment of all water and leachate results

AA = Annual Average (Mean), MAC = Maximum allowable, concentration, 5%ile = 5th Percentile Value, 10%ile = 10th Percentile Value, 90%ile = 90th Percentile Value, 95%ile = 95th Percentile Value, ABC = Ambient Background Concentration

An n%ile concentration is the concentration of a determinand calculated with statistics that the determinand exceeds 100-n% of the time in a given sample set.

Notes:

1. For these determinands the EQS given is for Inland Surface Waters. Inland Surface Waters encompass rivers and lakes and related artificial or heavily modified water bodies. The Other Surface Waters EQS given in the the WFD 2015 document is assumed to be applicable to Transitional and Coastal Waters.
2. For these determinands the ISFW EQS given in the the WFD 2015 document is assumed to be applicable to River Water and Freshwater Lakes. The Coastal Waters and Relevant Territorial Waters EQS given in the the WFD 2015 document is assumed to be applicable to Transitional and Coastal Waters.
3. If determinand in brackets has been assessed seperately to TPH band use 10µg/l as the TSV.
4. For these determinands EQS values have been given for a good quality surface water body. If the surface water receptor is particulary sensitive an EQS value for a high quality surface water body may be more appropriate. These values are presented in the WFD 2015 document.
5. Environmental Quality Standard, proposed as part of the implementation of the Dangerous Substances Directive (76/464/EEC)
6. Revoked Water Framework Directive 2011 EQS values and WHO 2008 values used in absence of more up to date standards
7. Updated 2015 Environmental Quality Standard. To determine bioavailable amounts use UKTAG Metal Bioavailability Assessment Tool (PNEC estimator) http://www.wfduk.org/tags/tool/bioavailability
Receptor specific DOC, pH and calcium surface water values required to determine bioavailable fraction. If no data is available assume 100% of Copper, Lead, Manganese, Nickel and Zinc is bioavailable.