Ferry Road Landfill

Hydrogeological Risk Assessment

December 2021

Mott MacDonald
22 Station Road
Cambridge CB1 2JD
United Kingdom

T +44 (0)1223 463500
mottmac.com

County Council of the City
and County of Cardiff

Ferry Road Landfill

Hydrogeological Risk Assessment

December 2021

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	17/12/2021	SB	LB DD	JD CP	First issue

Document reference: 100103133 | HRA | A 001

Information class: Standard

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

Contents

Executive summary 1

1 Introduction 4
1.1 Objectives 4
1.2 Methodology 4
1.3 Previous Reports and Data Supplied 5
1.4 Legislative Background 5
1.5 Assumptions and Limitations 5

2 Site Description 7
2.1 Site Location and Topography 7
2.2 Geology 8
2.3 Hydrogeology 10
2.4 Hydrology 11
2.5 Sensitive Sites 11
2.6 Site History 11
2.7 Landfill Engineering 14

3 Conceptual Model 17
3.1 Key Site Characteristics 17
3.2 Sources 18
3.3 Pathways 18
3.4 Receptors 19
3.5 Diagrammatic CSM 19

4 Monitoring Data 21
4.1 Monitoring Network 21
4.2 Compliance Criteria 21
4.3 Determinand Review 22
4.4 Controlled Waters Review and Preliminary Risk Assessment 29
4.5 Risk Assessment Summary 30

5 Assessment of accidents and failure scenarios 32

6 Review of monitoring, management plans and requirement for further work 33
6.1 Current monitoring and management arrangements 33
6.2 Proposed changes to monitoring and management 33

6.3 Requirement for further work 34
6.4 Requirements to support closure of the waste management licence. 34

7 Conclusions and Recommendations 35
7.1 Summary and Conclusions 35
7.2 Recommendations 36

A. Plans and figures 38
A.1 Plan of all monitoring points 38
A.2 Engineering layout of all wells 39

B. Monitoring point details 41
B.1 Leachate 41
B.2 Groundwater 42
B.3 Surface water 42

C. Sampling results 43
C.1 Leachate 43
C.2 Groundwater 44
C.3 Surface water 45

D. Graphical surface water monitoring results 46

Tables

Table 2-1. Site surroundings 8
Table 2-2. Summary of encountered ground conditions in vicinity of Ferry Road Landfill 9
Table 4-1: Determinands above detection in leachate 22
Table 4-2: Determinands assessed during longer term effluent monitoring 23
Table 4-3: Determinands above detection in upgradient groundwater 24
Table 4-4: Determinands assessed during longer term groundwater monitoring 24
Table 4-5: Determinands above detection limits in surface water 26
Table 4-6: Summary of contaminants of concern 28
Table 5-1: Assessment of potential accidents and short and long term failure scenarios 32

Figures

Figure 2.1: Site boundary 7
Figure 2.2: Geological profile of the site and surrounding area 10
Figure 2.3: Plan showing historical tipping, pre-dating disposal at Ferry Road Landfill 13
Figure 3.1: Conceptual Site Model for Ferry Road Landfill site 20

Executive summary

The area surrounding the Ferry Road Landfill, located within the Grangetown area of Cardiff, was the subject of significant historical tipping over the last 80 years. In the 1970s, waste was used to infill the old meandering channel of the River Ely that became redundant after the course of the river had been straightened to aid navigation. Wastes accepted on site comprised municipal waste, including household, commercial, industrial, civic amenity wastes, street sweepings and litter, and later contaminated general wastes, contaminated soil and subsoil.

An engineered landfill cell was formed in the 1990s when waste materials, excavated as part of the adjacent site redevelopment, were deposited on an area of the landfill. The cell was engineered to provide containment above the historical tipping and wastes received included contaminated soils, hardcore, municipal refuse (including asbestos) and construction spoil arisings. The entire landfill, including the waste placed in the 1970s, was covered, restored and developed to create Grangemoor Park, which was completed in 2000. During the restoration of the entire landfill in the 1990s, a network of wells was installed for leachate and gas management. The leachate management system comprised 19 leachate abstraction wells in the historical waste, which were designed to provide hydraulic containment of the leachate by pumping excess leachate from the site to nearby foul sewers. The active leachate abstraction was designed to maintain the leachate levels at just below the piezometric level of the underlying groundwater within the gravels, reducing outward flow of leachate into groundwater and to adjacent surface water.

Reference to the “landfill” reflects all the tipping in the area from the 1970s and thereafter. When discussing the “engineered cell” this reflects the part of the landfill that was specifically designed, constructed and used in the 1990s. The whole site area is understood to be under an operational waste management licence.

The original waste tipping at the site pre-dates landfill regulations and therefore no basal liner was used in the construction of the landfill. Instead, the waste was deposited directly onto the Tidal Flat Deposits associated with the estuarine deposits. From the borehole logs in the area, it is known that the Tidal Flat Deposits comprise a silty clay which confines groundwater in the underlying sands and gravels, and therefore it has a relatively low permeability where present. However, it is also understood that the Tidal Flat Deposits are absent in the old channels of the river, and at these locations, waste directly overlies the Glaciofluvial Sheet Deposits, resulting in no protection to the underlying hydrogeology.

The leachate management system was found to not be fully operational during 2021 and therefore samples of leachate, surface water and groundwater were collected and analysed to better understand the impacts of any leachate migration from the landfill.

No wells have been installed in the engineered cell, and as a result it is not possible to determine the concentrations of contaminants in the leachate in that cell. However, it is assumed that the basal liner and capping layers in this cell are complete and therefore significant migration of leachate from this cell into the environment is considered unlikely.

Although sample results indicate that there is some consistency between CoC identified in leachate and in surface water samples, many of these contaminants were also commonly detected in upstream samples of surface water. It is unlikely that the upstream samples would have been influenced by contamination from the landfill. This indicates that the water in the River Ely is impacted with multiple contaminants before it reaches the vicinity of the landfill. Concentrations recorded in ‘River sample under Bypass’ which is located in the River Ely downstream of the landfill (as shown in Figure A.1 in Appendix A) are similar to the concentrations seen in the upstream sample (River sample Rail Bridge) and therefore it is considered that the landfill is not causing significant additional pollution of the River Ely.

Limited species were also detected in upgradient shallow groundwater, indicating that the aquifer in the wider area is impacted by inorganic contaminants from other sources prior to reaching the landfill. Numerous other sources of contamination exist in the area, including the historical widespread deposition of waste as well as commercial/industrial units. It is likely that these are contributing to the quality of the water around the landfill, including groundwater where elevated concentrations of some metals are seen in the upgradient sample. The condition of the groundwater in the vicinity of the landfill is not well defined and therefore conclusions on impacts to the underlying aquifer are not possible with available data.

The conceptual site model (CSM) identified potential pathways through which the leachate is migrating from the landfill:

- Failure of the leachate collection system leading to increased piezometric head of the leachate within the landfill.
  - As the base of the landfill is not sealed, and there is connectivity to the underlying groundwater in the Tidal Flat Deposits, an increased pressure head of leachate will likely result in direct entry to the groundwater, and lateral migration away from the landfill in the absence of the designed hydraulic containment. Impacts to groundwater from the landfill are currently unknown based on limited groundwater monitoring data. The only location sampled to date as part of the landfill investigation is hydraulically upgradient of the landfill and therefore is unlikely to show the full extent of any impacts to groundwater.
  - Increased head of leachate may also result in percolation of leachate through the clay cap at the sides where direct contact occurs, resulting in breakouts on the surface of the landfill, which were referred to by Geotechnology in 2021, although it was unclear when these were observed.
- Overflowing perimeter drains leading to leachate breakouts on the landfill sides and leakage to a surface water culvert to the east of the site.
  - The perimeter drains were engineered to collect infiltrating rainfall, which would be removed by pumping stations. However, failure of the pumping stations has led to the drains becoming surcharged and discharging to the surface water drainage channels, where leachate is able to then enter surface water culverts, as seen during the site walkover. This may also result in breakouts on the surface of the landfill.
  - The sampling from Ferry Court outfall indicates that the water in this pipe is impacted by leachate. Despite this, from the information known about the concentration of the CoC in the effluent and the enormous quantity of water in Cardiff Bay, dilution is considered to significantly reduce the concentrations of the contaminants that enter the Bay and therefore any impact is not extensive or significant. It must also be noted that the inputs to this pipe are not fully understood at the time of writing and therefore could be sourced from outside of the Ferry Road site. Investigations into this are ongoing.
- The direct discharge of leachate into the River Ely via two concrete outfalls to the north end of the landfill site.
  - Although these outfalls were observed by Geotechnology to be discharging water with a strong orange discolouration directly into the river, the sampling results were not conclusive that this is leachate and therefore it is considered that there may be a contribution from other sources.

Following the risk assessment, recommendations with respect to hydrogeological impacts are outlined below to manage any significant risks and move the site towards closure:

- If not already completed, the pipework leading into the surface water culvert that discharges into the Cardiff Bay at Ferry Court should be sealed so that leachate can no longer enter the surface water system.
- The pumping system for leachate management should be reinstated so that the piezometric head of leachate inside the landfill and in the perimeter drains is reduced. By maintaining the design level of +4mAOD leachate within the landfill, the release of leachate into the underlying aquifer will significantly reduce.
- A sufficient number and distribution of leachate monitoring wells are considered to exist across the landfill, and therefore no further wells are considered to be required. However, there is a current lack of groundwater data on which to base conclusions about impacts to underlying aquifers, therefore it would be prudent to increase the groundwater monitoring network. A minimum of three new downgradient groundwater monitoring wells is recommended if appropriate locations can be identified and accessed. If this is not possible, more intensive monitoring (additional locations/ increased frequency) of the surface water may be required as the surface water is the key receptor for controlled waters.
- Once the above points are actioned, it is recommended that the future monitoring programme for the landfill comprises quarterly monitoring of key locations until permit surrender is agreed and the landfill is closed. It is recommended that the key locations for the quarterly monitoring comprise:
  - Six locations across the landfill for leachate level monitoring and sampling, including three in the old river channel (LW or OW wells) and three within the wider waste deposits;
  - Pumping stations B, C, D and T1;
  - Existing surface water monitoring locations including Ferry Court outfall;
  - Two locations in Cardiff Bay; within 20m of the Ferry Court outfall and in the wider area, along with observations recorded at the outfall at the time of sampling;
  - At least three downgradient groundwater monitoring wells in addition to the upgradient monitoring point (B&M car park [FR1]) if suitable locations can be identified and accessed.

  The monitoring suite should comprise: ammoniacal nitrogen, nitrate, nitrite, pH, chloride, sulphate, TOC, metals (arsenic, barium, boron, cadmium, chromium III, chromium VI, copper, iron, lead, manganese, total mercury, nickel, potassium, zinc), total TPH, PAH (USEPA 16 speciated) and mecoprop.

1 Introduction

This report has been prepared on the behalf of the County Council of the City and County of Cardiff (Council). The report comprises a Hydrogeological Risk Assessment (HRA) of the landfill at Ferry Road, in Cardiff.

The structure of the report is as follows:

- Chapter 1: Introduction – background and objectives, methodology applied, data supplied and the legislative framework.
- Chapter 2: Site description – hydrology, geology, hydrogeology, history and engineering aspects of the landfill site.
- Chapter 3: Conceptual model – conceptual model in terms of identified sources, pathways and receptors, and the source-pathway-receptor linkages.
- Chapter 4: Monitoring data – presentation and review of the data on leachate and groundwater quality and levels, the extent of potential contamination, and Preliminary Risk Assessment.
- Chapter 5: Assessment of accident and failure scenarios
- Chapter 6: Conclusions and recommendations

1.1 Objectives

A risk assessment has been carried out to assess current compliance with the Groundwater provisions of the Environmental Permitting (England and Wales) Regulations 2016 (as amended)[1]. The objectives of the assessment are to:

1. Establish whether there is any discharge of Hazardous substances to surface water and groundwater in the vicinity of the Ferry Road landfill.
2. Establish whether any Non-hazardous pollutants are causing pollution to receptors near the Ferry Road landfill.
3. Create a conceptual site model to determine potentially active pollutant linkages associated with leachate migration from the landfill.
4. Assess the potential level of risk of the Ferry Road landfill to the identified receptors,
5. Assess accident and failure scenarios and their consequences.
6. Make recommendations based upon the findings.

1.2 Methodology

To establish a firm understanding of the landfill area and its surroundings based upon the available data, a desk study was conducted, including a review of previous reports, maps, monitoring data and the waste management licence for the Ferry Land Landfill.

Data on groundwater and leachate quality and levels and surface water quality, from 2019 to 2021, were reviewed. The data review included establishing trends in groundwater and leachate levels and an assessment of the groundwater, leachate and surface water chemical composition, to determine if the site complies with the Regulations. A conceptual model was produced for the site and a generic quantitative risk assessment based upon the monitoring

[1] Environmental Permitting (England and Wales) (Amendment) (EU Exit) Regulations 2019

data was undertaken. An assessment of the requirement for more complex hydrogeological modelling was also undertaken.

The findings of the HRA are summarised in this report, together with a summary of the monitoring data and their implications. Recommendations regarding the future monitoring of the site are also provided.

1.3 Previous Reports and Data Supplied

The Ferry Road Landfill has been the subject of a number of studies which have been used in the production of this report. They are:

- Plan: Layout of Leachate, gas and observation wells, Arup, January 1997[2].
- Contaminated Land Desk Study, Mott MacDonald Ltd, September 2021[3].
- Site Inspection Report, Geotechnology Ltd, March 2021[4].
- Aftercare Plan, Mott MacDonald Ltd, April 2021[5].
- Gas Risk Assessment, Mott MacDonald Ltd, October 2021[6].

Additionally, sample analysis data collected in 2019-2021 for groundwater and in 2021 for leachate, surface water and groundwater, has been supplied by the County Council of the City and County of Cardiff and assessed to form conclusions on the migration of leachate from the landfill into the surrounding environment.

A technical note[7] was also prepared by Mott MacDonald as an interim update to the Council, whilst this report was being progressed. However, this report supersedes the conclusions and recommendations of the technical note following the inclusion of more monitoring data and assessment.

1.4 Legislative Background

The relevant legislation for the Ferry Road Landfill is considered to be:

- Water Framework Directive (2000/60/EC) and Groundwater Daughter Directive (2006/118/EC) require Member States to prevent inputs of hazardous substances into groundwater subject to various exemptions.
- Part IIA (2000) of the Environmental Protection Act (1990), which defines contaminated land.
- Environmental Permitting (England and Wales) Regulations 2016 (as amended).

1.5 Assumptions and Limitations

To the extent that this document is based on information supplied by other parties, Mott MacDonald Ltd accepts no liability for any loss or damage suffered by the client stemming from any conclusions based on data supplied by parties other than Mott MacDonald Ltd and used by Mott MacDonald Ltd in preparing this report. The findings and opinions of this report are based on information obtained from a variety of sources as detailed in this report, and which Mott MacDonald Ltd have assumed to be reliable. Nevertheless, Mott MacDonald Ltd cannot and does not guarantee the authenticity or reliability of the information provided to it from others. To the extent that this document is based on information obtained from ground investigations,

---

[2] Ove Arup and Partners, January 1997, Ferry Road Licenced Tip Restoration, Civil Engineering Works: Layout of Leachate, Gas and Observation Wells. Ref: WSK125.

[3] Mott MacDonald, September 2021, Ferry Road Landfill - Contaminated Land Desk Study.

[4] Geotechnology, March 2021, Ferry Road Landfill Cardiff: Site Inspection Report, Ref: 2140r1v1d0321.

[5] Mott MacDonald, 2021, Ferry Road Landfill Aftercare Plan. Ref 100103133|1|B.

[6] Mott MacDonald, October 2021, Ferry Road Landfill: Qualitative Gas Risk Assessment. Ref: 100103133 | GRA | A.

[7] Mott MacDonald, 2021, Ferry Road Landfill Geo-environmental Technical Note. Ref: 100103133/ENS/TN001.

persons using or relying on it should recognise that any such investigations can examine only a fraction of the subsurface conditions.

Where Mott MacDonald Ltd has been responsible for the design of a ground investigation, and preparation of the Contamination Risk Assessment and Remediation Strategy Mott MacDonald Ltd has used reasonable skill and care. However, in any ground investigation there remains a risk that pockets or “hot-spots” of contamination may not be identified, because investigations are necessarily based on sampling at localised points. Certain indicators or evidence of hazardous substances or conditions may have been outside the portion of the subsurface investigated or monitored and thus may not have been identified or their full significance appreciated. Such risks can be mitigated to a degree by carrying out further ground investigation, or during construction works by on-site visual observation and verification testing.

Mott MacDonald is not insured for, and therefore will not undertake surveys to identify asbestos or provide any guidance on the treatment of asbestos, or similarly for toxic mould. Should the presence of asbestos or toxic mould be suspected during the course of the study, Mott MacDonald would recommend the appointment of a specialist contractor to address the issue and would not provide advice on the risk or remedial measures.

2 Site Description

This section summarises information presented within a desk study[3] produced for the site.

2.1 Site Location and Topography

The Ferry Road Landfill site (non-engineered and engineered parts) comprises an area of approximately 18ha (45 acres) owned by Cardiff City Council, located within the Grangetown area of Cardiff, centred at NGR 317420, 173790 and lies between Ferry Road Retail Park to the east and the River Ely to the west. The engineered part of the site is an oval shaped hill that sits within the wider landfill. The site is currently used as public open space (Grangemoor Park), with public footpaths circling the site.

Reference to the "landfill" reflects all the tipping in the area from the 1970s and thereafter. When discussing the "engineered cell", this reflects the part of the landfill that was specifically designed, constructed and used in the 1990s. Further detail on the history of the site is presented in Section 2.6. The whole site area is understood to be under an operational waste management licence.

The site location is presented in Figure 2.1. The approximate site boundary of the landfill (both the tipping from the 1970s and the engineered cell) is represented by the yellow line.

Figure 2.1: Site boundary

Source: Ordnance Survey © Crown copyright (2021). All rights reserved. Licence number 100026791

The site is vegetated and grassed, with areas of dense vegetation particularly in the northern and eastern boundaries. The main observed site surroundings are summarised in Table 2-1.

Table 2-1. Site surroundings

Area	Site Use
North	Disused Grangetown Gasworks is located immediately to the north, with IKEA and residential properties to the northeast and Leckwith Industrial Estate to the northwest.
East	Ferry Road Retail Park is located immediately to the east of the site, with Ferry Road and residential properties further east.
South	Dunleavy Drive is located along the southern perimeter of the site, with Dunleavy Drive Retail Park to the southeast. The A4232 Grangetown Link Road runs in an east-west orientation, with residential and commercial properties further south.
West	River Ely forms the western boundary of the site. Leckwith Industrial Estate and Westpoint Industrial Estate are located further west.

The landfill itself has a 'domed' topography with the highest elevation at approximately 31m above Ordnance Datum (AOD), in the northern central portion of the site. The ground slopes down to the north, east, south and west to approximately 18mAOD. The lowest point lies at 9mAOD in the south east. Grangemoor Park occupies the site itself, which comprises undeveloped grassed areas crossed by tracks / paths and a concentric network of drains broadly following the contours of the dome. Peripheral woodland is present and a pond is located on the eastern boundary at the lowest point of the site.

2.2 Geology

2.2.1 Artificial Geology

British Geological Survey (BGS) GeoIndex[8] (1:50,000) does not record the presence of Made Ground on site, however Made Ground presence is expected from the landfilling activities and infilling of historical river channels on-site. Immediately surrounding the site are artificial deposits of undivided Made Ground. BGS Lexicon[9] describes this as *"Made Ground is an area where the pre-existing (natural or artificial) land surface is raised by artificial deposits. The purpose of Made Ground is unspecified. Variable composition".*

2.2.2 Superficial Geology

BGS GeoIndex (1:50,000) indicates that the superficial geology below the site is Tidal Flat Deposits comprising clay, silt and sand. BGS Lexicon describes this as *"Tidal flat deposits, including mud flat and sand flat deposits, are deposited on extensive nearly horizontal marshy land in the intertidal zone that is alternately covered and uncovered by the rise and fall of the tide. They consist of unconsolidated sediment, mainly mud and/or sand. Normally a consolidated soft silty clay, with layers of sand, gravel and peat. Characteristically low relief."*

Underlying the Tidal Flat Deposits, Glaciofluvial Sheet Deposits may be present, although the extent of these is not clear due to the coverage of Tidal Flat Deposits. BGS Lexicon describes these deposits as "*Sand and gravel, locally with lenses of silt, clay or organic material*".

2.2.3 Bedrock Geology

According to BGS GeoIndex and BGS paper mapping[10] (1:50,000) the bedrock geology of the site and surrounding area is the Mercia Mudstone Group. BGS Lexicon describes this as *"Dominantly red, less commonly green-grey, mudstones and subordinate siltstones with thick*

[8] BGS GeoIndex. Available at: GeoIndex - British Geological Survey (bgs.ac.uk).

[9] BGS Lexicon [online]. Available from: BGS Lexicon of Named Rock Units - Result Details

[10] BGS 1986. Cardiff England and Wales Sheet 263 Solid Geology, 1:50000 Series.

halite-bearing units in some basinal areas. Thin beds of gypsum/anhydrite widespread; sandstones are also present".

2.2.4 Geological Structure

According to BGS GeoIndex and BGS paper mapping (1:50,000), there are a series of five normal 'step' faults trending northeast-southwest located approximately 600m southwest of the site. Another normal fault trending northwest southeast is located approximately 800m southwest of the site.

2.2.5 Encountered Geology

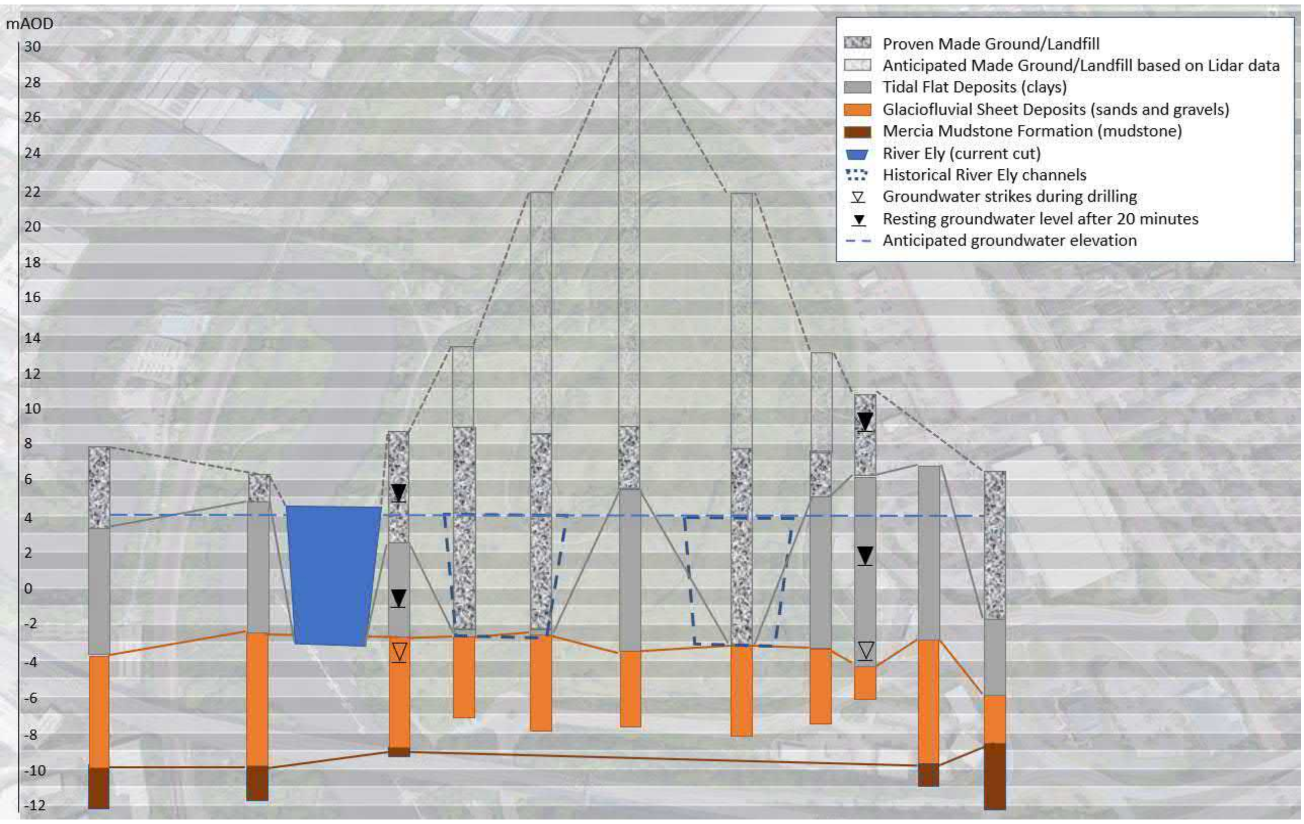
From logs of boreholes identified from the BGS GeoIndex, it has been identified that the geological sequence of the area is as presented in Table 2-2.

Table 2-2. Summary of encountered ground conditions in vicinity of Ferry Road Landfill

Strata	Description	Elevation of top (mAOD)	Thickness (m)	Comment
Made Ground	Topsoil / Made Ground	6.5-11	2.50-11.00	Firm brown silty clay with gravel and roots Variable domestic waste: Clayey silty sand and gravel with brick fragments, rubble, concrete, ash, rags etc.
Superficial - Tidal Flat Deposits	Clay	Highly variable 6 to -2.75 (average 3.0)	0.75 to 10.3 (average ~7.5)	Very soft to soft black and dark brown mottled silty clay with some black organic rich veining and bands of very clayey silt with some plant roots. Absent in the location of the original and diverted River Ely channels.
Superficial – Glaciofluvial Sheet Deposits	Sand and gravel	-3.5 to -5.5	2.9 to 7.6 (average ~5)	Dense to very dense, slightly silty fine medium coarse sand and medium coarse gravel with cobbles. Gravel consists of sandstone, weathered marl, siltstone and quartzite.
Bedrock – Mercia Mudstone Group	Mudstone / Siltstone	-8.5 to -9.8 (dipping to southwest)	Unproven	Weak to moderately weak, highly weathered, red brown.
General comments: Water found at in landfill deposits / Made Ground, and confined in the Glaciofluvial Sheet Deposits (rising into the Tidal Flat Deposits with encountered) The full thickness (estimated to be ~25m) and elevation (~30mAOD) of Made Ground in the landfill is not included in this table as BGS boreholes do not show the full landfill profile.				

Based on the logs reviewed, and additional knowledge of the site from Lidar topographic data, the following geological profile has been developed, as shown in Figure 2.2.

Figure 2.2: Geological profile of the site and surrounding area



2.3 Hydrogeology

2.3.1 Aquifers

Aquifer designations for the site have been identified using the Groundsure GeoInsight Report[11] and BGS GeoIndex interactive maps.

The Tidal Flat Deposits are designated as a Secondary (undifferentiated) aquifer, assigned where it is not possible to attribute either category A or B to the rock type. Secondary A aquifers are *'permeable layers capable of supporting water supplies at a local rather than strategic scale'*, while Secondary B aquifers are *'predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering'*. It is also noted that this is a medium vulnerability superficial aquifer.

The Glaciofluvial Sheet Deposits are designated as a Secondary A aquifer.

The bedrock (Mercia Mudstone Group) is designated as a Secondary B aquifer with medium vulnerability.

2.3.2 Groundwater Levels and Flow

From logs of boreholes identified from the BGS GeoIndex, groundwater was encountered in the Glaciofluvial Sheet Deposits at around -4mAOD but rose to between -1mAOD and +2mAOD after 20 minutes, indicating that the groundwater in the Glaciofluvial Sheet Deposits is confined by the Tidal Flat Deposits. Based on the geological profile developed from the logs (as seen in Figure 2.2), the upper boundary of the Glaciofluvial Sheet Deposits is relatively flat, and

[11] Groundsure GeoInsight Report, No. 8068388.

therefore the main control on groundwater movement is likely to be the River Ely. It is therefore anticipated that groundwater migration in the granular deposits is towards the west. The presence of the cement-bentonite slurry wall along the eastern boundary of the site (see Section 2.7.1 for additional detail) is likely to impact local hydrogeological conditions and groundwater flow by reducing and diverting groundwater coming on to the site from the east and north east.

No groundwater was recorded to have been encountered in the Mercia Mudstone Group on borehole logs in the area, however, it is considered likely that any groundwater would be migrating towards Cardiff Bay to the east/southeast.

2.3.3 Groundwater Abstractions

The site is not located within a Groundwater Source Protection Zone[11]. There is one recorded groundwater abstraction point within 1km of the site, which is an abstraction located 730m northeast of the site, where up to 108m^3 of water is abstracted daily for use as a groundwater source heat pump (Licence Number: WA/057/0025/013, NGR: 318104, 174494). No records for drinking water abstractions have been identified within 1km of the site.

2.4 Hydrology

Using Ordnance Survey (OS) Mapping, to the immediate west and southwest of the site is the River Ely. There is a small unnamed tributary to the River Ely originating to the north of the site and running parallel to the railway line. At the eastern boundary of the site, there is a pond located adjacent to the Ferry Road Retail Park. On site, there are three circular ditches that follow the approximate perimeter shape of the landfill. One of these ditches is located at the base of the landfill following the 10m contour, another follows the 20m contour, and the third follows the 25m contour. No discharge features for these ditches were visible during the site walkover.

According to Natural Resources Wales (NRW)[12] the site is not at risk from flooding by the sea but the surrounding coastal area and the urban area of Grangetown are at low risk of flooding from the sea. There is medium risk of river flooding along the River Ely's banks. There are several pockets of low to high-risk areas of flooding from surface water and small watercourses, located generally around the site boundary.

The NRW overall Water Framework Directive Waterbodies Cycle 2 Interim 2018 classification for the River Ely is 'bad' ('bad' for ecological and 'fail' for chemical quality)[13].

2.5 Sensitive Sites

There are no statutory protected areas (Ramsar, SSSI, SPA or SAC) within 250m of the site.

Historic Wales shows that a gasholder of 1881 (NGR: ST 17374 74129) as part of the gasworks 120m NW of the site boundary is listed under the National Monuments Record of Wales (NMRW). There are no other listed buildings within 250m of the site.

2.6 Site History

A full site history, making reference to historic mapping is included within the Ferry Road Landfill Desk Study[3].

The extent of waste disposal tipping operations within the vicinity of the landfill pre-dated the disposal operations at the site. The area surrounding the site had apparently already been the

[12] Natural Resources Wales Flood Risk Map Viewer [online]. Available from: Geocortex Viewer for HTML5 (cyfoethnaturiolcymru.gov.uk) (Accessed 15th July 2021)

[13] Natural Resources Wales Water Watch Wales map Viewer [online]. Available from: Water Watch Wales (naturalresourceswales.gov.uk) (Accessed on 4th October 2021)

subject of significant historical tipping before large scale tipping was undertaken in the 1970s up to the end of the 1990s. Historical mapping dating from 1900 includes references to several clay pits associated with brick manufacture, in areas that were developed by the 1940s. In 1915-1920, refuse heaps were shown to occur 45m north west of the site, with a further area of filled marshland 100m north west as part of a gasworks site. Between 1972 and 1976 there was a refuse site to the north of the site. Figure 2.3 shows the extent of waste disposal tipping operations within the vicinity of the landfill that pre-dated the disposal operations at the site. It shows that much of the area within this location was tipped with approximately 6m depth of municipal and industrial wastes.

It was reported that the wider site first began accepting waste in 1971. Prior to the start of tipping, the site comprised the meandering River Ely and associated flood plains. In 1969, an Act of Parliament was passed to enable construction of a new cut across the meanders of the River Ely. The cut forms the present-day line of the river. Cardiff City Council used the old riverbed to dispose of builders' rubble, commercial waste and municipal refuse. This original landfill is unlined and achieves a height of around 20m above the surrounding area.

Between 1982 and 1986 there was extensive tipping around the area. There were six refuse tips labelled in and around the site comprising two on the northern limit, one on the eastern limit, two on the southern limit and a final site to the south. Two of these are described as public sites and there was a weighbridge at the site. Former refuse disposal was also identified at two locations 80m southeast of the site and another 150m to the south of the site.

The meander was filled together with much of the adjacent land, with tipping continuing up above the surrounding ground level. Historical aerial photographs indicate the refuse site was developed, at least in part, in individual cells. Wastes accepted on site comprised municipal waste, including household, commercial, industrial, civic amenity wastes, street sweepings and litter, and later contaminated general wastes, contaminated soil and subsoil, and bonded asbestos associated with the redevelopment of the Cardiff Bay area. It is understood that approximately 4 million cubic metres of waste were buried onsite.

Landfilling with commercial and household waste continued until 1994. In 1994 the tip was closed and the land entered into Cardiff Bay Development Corporation (CBDC) ownership. The CBDC created a new retail park on the old industrial site to the east.

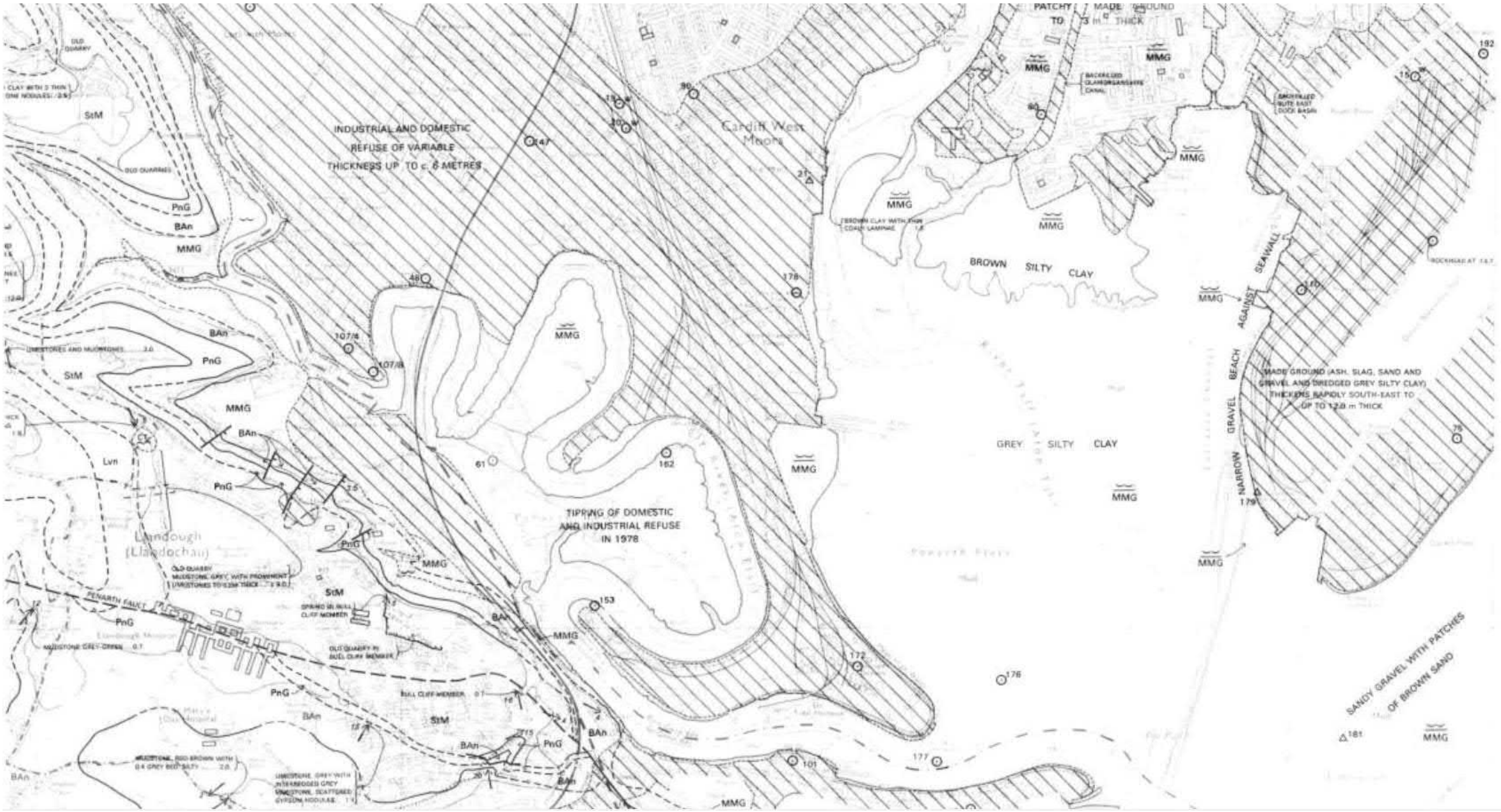
The CBDC undertook the following preparatory work for the development:

- For the Cardiff Bay Retail Park, ground with unacceptably high levels of contamination, together with refuse deposits associated with the municipal tip along the site's boundary with the tip, were removed.
- For the Ely Fields site, the refuse deposits associated with the municipal tip down to the level of the underlying estuarine mud flats, were removed and replaced with imported fill.

The excavated material was deposited on an area of the landfill. The site was, therefore, reactivated under a new Waste Management Licence, and received wastes scraped from the surrounding areas, including contaminated soils, hardcore, municipal refuse (including asbestos) and construction spoil arisings. The constructed cell was engineered to provide containment above the historical tipping in a separate cell.

The entire landfill, including both the tipping dating from the 1970s and the engineered cell, was covered, restored and developed to create Grangemoor Park, which was completed in 2000.

Figure 2.3: Plan showing historical tipping, pre-dating disposal at Ferry Road Landfill



Source: Mott MacDonald (2021) Contaminated Land Desk Study[3]

2.7 Landfill Engineering

Information in this section is taken from the following documents:

- Mott MacDonald Ltd, September 2021, Ferry Road Landfill - Contaminated Land Desk Study[3].
- Geotechnology, March 2021, Ferry Road Landfill Site Inspection Report[4].
- Mott MacDonald Ltd, April 2021, Ferry Road Landfill Aftercare Plan[5].

2.7.1 Basal Liner

The waste tipping at the site pre-dates landfill regulations and therefore no basal liner was used in the construction of the landfill. Instead, the waste was deposited directly onto the Tidal Flat Deposits associated with the estuarine flats and used to infill the old meandering channel of the River Ely that became redundant after the straightening of the river. From the borehole logs in the area, it is known that the Tidal Flat Deposits comprise a silty clay which confines groundwater in the underlying sands and gravels, and therefore it is of low permeability where present. However, it is also understood that the Tidal Flat Deposits are absent in the old channels of the river, and at these locations, waste directly overlies the Glaciofluvial Sheet Deposits, resulting in no protection to the underlying aquifer.

Following the completion of tipping at the site, a 600mm wide cement-bentonite slurry wall containing a centrally placed HDPE geomembrane was constructed from ground level down to the Tidal Flat Deposits along the eastern edge of the landfill. The aim of the barrier was to restrict leachate and landfill gas movement towards the Cardiff Bay Retail Park.

The engineered cell for wastes deposited in the 1990s was constructed with containment comprising a 300gm/m^2 geotextile (Terram or equivalent) being laid over the prepared surface of historical wastes, further overlain in sequence by: 300mm gas drainage blanket of 20mm single sized stones, a 1,500gm/m^2 10mm thick geotextile, a 1.5mm HDPE layer with welded laps, a further 1,500gm/m^2 10mm thick geotextile, then a 300mm thick leachate drainage blanket of 20mm uniformly graded stone. Deposited wastes were then placed over this.

2.7.2 Capping System

The whole site, including the waste deposited in the 1970s, was capped with an 800mm low permeability clay layer overlain by a 350mm thick soil layer, in 1998. It is also understood that a 200mm clay capping was left *in-situ* underlying this for the areas of waste deposited in the 1970s.

A construction quality assurance process was in place with Ove Arup acting as Construction Quality Assurance (CQA) Engineer for the works in 1998. However, few records exist of the CQA except for formation surface acceptance forms. The CQA plan and report have not been obtained. The specification for the preparation and placement of the low permeability clay layer has been provided and demonstrates that the material was to be placed in accordance with the “Manual of Contract Documents for Highways Works, Volume 1: Specification for Highways Works”, Department of Transport HMSO 1993. The Highways Works specification identified the thickness of each layer and the number of passes required with a vibrating roller dependent on the material type placed, to achieve 95% compaction. The master specification also identified the testing required to demonstrate that the material fell with acceptable thresholds for moisture content, Atterberg limits, in-situ density and thickness. The anticipated permeability of the clay cap was 1x10^{-8}m/s. The geotechnical parameters selected required the use of low plasticity soil which has a lower potential for desiccation cracking than higher plasticity materials often specified. The overall design strategy accepted a slight infiltration of rainwater, permitting modest degradation of the refuse until it reached a state which no longer threatened to pollute or endanger health.

2.7.3 Drainage and Leachate Control

No drainage systems are known to exist for the historical waste deposits, and all environmental management and monitoring infrastructure instead have been following the completion of tipping at the site in the 1990s.

A network of herringbone drains was installed directly under the cap to take any perched leachate produced by infiltrating water into the perimeter drainage pipework at the toe of the landfill. These discharged to eastern and western perimeter gravity drains at an elevation of around 6.0 to 6.5mAOD. Pumping stations were constructed to allow for discharge to foul sewer for onward treatment prior to discharge.

Nineteen leachate abstraction wells were installed at approximately 50m centres along the alignment of the original river channel, which were designed to maintain the leachate levels to just below piezometric level of the underlying groundwater within the gravels (approximately 4.5mAOD based on the level of the River Ely and Cardiff Bay). This would result in groundwater being drawn into the wells within the old river channel, significantly reducing outward flow of leachate into groundwater. This hydraulic containment also reduces risks to surface water receptors including the River Ely and Cardiff Bay. Between the buried river channels, leachate levels were expected to form a mound at a level of approximately 6-7mAOD. The wells are connected to gravity drains that take leachate to one of the three pumping stations around the site, where it is then taken to Western District Pumping Station for onward disposal to treatment.

Nineteen observation wells and 41 gas wells were also installed across the landfill. The boreholes were all drilled into waste deposits and none reached the natural ground. A plan showing the layout of these wells is presented in Appendix A. None of the wells were installed into the engineered cell from the 1990s so it is not possible to determine leachate quality in this part of the site.

2.7.3.1 Leachate Levels

During an inspection of the leachate management system, reported by Geotechnology in 2021, it was noted that the chamber close to McDonalds (within the adjacent business park) was found to contain leachate at a very high level, although it was not flowing out of the chamber. Nearby, Pumping Station T1 (a key pumping station which receives all the leachate draining under gravity from the eastern part of the site, including the leachate pumping wells and the eastern perimeter gravity drain) was found to be out of operation, resulting in leachate backing-up into the drainage system.

The on-site leachate abstraction system was found not to have been operated for an extended period, leading to leachate build up within the site to the levels originally observed (approximately 6-7mAOD). Therefore, the hydraulic containment is no longer active with likely migration of leachate from the site in the environment occurring. Leachate staining has also been observed on the sides of the landfill. In addition, it was found that “leachate from the site was flowing away from the landfill through one of the original gravity drainage pipes to a surface water culvert on Ferry Road near the Watermark building”.

2.7.3.2 Surface Water Management

During the inspection of the leachate management system, Geotechnology examined a surface water discharge point into the River Ely and assessed the current leachate levels within the landfill.

The discharge of water directly into the Ely from a pair of concrete pipes at the northern end of the landfill close to Pumping Station D was noted along with a strong orange discolouration of the water flowing from the pipes. Geotechnology considered it highly likely that this was a direct discharge of leachate contaminated water into the River.

Additionally, leachate is understood to enter a surface water culvert (originally designed to be a foul sewer and the connection was never discontinued) which leads away from the landfill to the south-east and discharges directly into Cardiff Bay.

3 Conceptual Model

A Conceptual Site Model (CSM) was developed for the site in the desk study report[3] and identified moderate risks to groundwater and surface water from leachate release, as well as moderate risks to off-site developments from ground gas. Other risks to construction materials, flora and fauna and site users were considered not to be active linkages, to have a low or very low risk, or mitigated by the use of personal protective equipment.

This report further explores the risks to groundwater and surface water from the presence of the landfill. A gas risk assessment[6] to further assess risks from gases has been prepared separately. This section presents an overview of the key characteristics of the site as well as sources, pathways and receptors that were considered be present to form “contaminant linkages” at the site. Where active contaminant linkages exist, risks to human health or the environment may exist.

3.1 Key Site Characteristics

Ferry Road landfill has an operational waste management licence, however the majority of the waste was deposited prior to the introduction of waste licensing legislation. There was, therefore, no requirement to install any basal engineering. The site is underlain by Tidal Flat Deposits which, where present, provide a natural low permeability barrier to the underlying geology. However, the Tidal Flat Deposits are absent in areas of the historical channels of the River Ely, which meandered through the site until around 1970 when the channel was straightened and a new cut made to the west of the site, forming the river’s current alignment. In these locations, the waste was placed directly onto the granular Glaciofluvial Sheet Deposits, which contain groundwater that supplies the River Ely.

The waste placed in the 1970s was capped with a thin layer of clay, and leachate controls were described as the flushing of the lower levels of the waste with tidal waters from the Cardiff Bay, using a dilute and disperse concept for any produced leachate.

An engineered cell was formed on top of existing waste in the 1990s to place waste from surrounding developments. This was completed in the late 1990s and the whole landfill, including wastes deposited from the 1970s onwards, was covered, restored and developed to create Grangemoor Park in 2000. Leachate control measures were introduced at this point, which included:

- The whole site, including the waste deposited from the 1970s onwards, was capped with an 800mm low permeability clay layer overlain by a 350mm thick soil layer.
- A network of herringbone drains was installed directly under the cap to take any perched leachate produced by infiltrating water into the perimeter drainage pipework at the toe of the landfill. These discharged to perimeter gravity drains and pumping stations were constructed to allow for onward discharge to foul sewer. The perimeter drains were designed to drain leachate if levels became excessive.
- A 600mm wide cement-bentonite slurry wall containing a centrally placed HDPE geomembrane was constructed from ground level down to the Tidal Flat Deposits on the eastern boundary of the site to reduce the potential for leachate migration out from the landfill. This man made barrier is also likely to limit groundwater flow onto the site from the east/ north east thus disrupting local groundwater patterns.
- Nineteen leachate abstraction wells were installed at approximately 50m centres along the alignment of the original river channel. These were designed to maintain the leachate levels to just below piezometric level of the underlying groundwater within the gravels (around

4mAOD), which would result in groundwater being drawn into the wells within the old river channel, significantly reducing outward flow of leachate into groundwater by hydraulic containment. The wells are connected to gravity drains that take leachate to one of the three pumping stations around the site, where it is then taken to Western District Pumping Station for onward disposal to treatment.

In 2021, during a site inspection by Geotechnology, the on-site leachate abstraction system, which was designed to draw groundwater slowly into the pumping wells to reduce outward advective flow of leachate into groundwater, was found not to have operated for an extended period. The implications of this and other key findings from the site visit are:

- The leachate collection wells following the alignment of the original river channel were not in use at the time of inspection. Subsequently, leachate was not pumped from the landfill into the gravity drain and the pumping stations were not receiving leachate from the site. Well dipping recorded high leachate levels between 7mAOD and 15mAOD. It was likely that the additional head of leachate resulted in the migration of leachate from the site, into the underlying groundwater.
- The network of herringbone drains directly underlying the cap was designed to take water into the perimeter drainage pipework and was found not to be functioning as intended. Geotechnology noted three breakouts on the surface of the landfill in the south of the site.
- The eastern perimeter drain was found to be surcharged, and the pumping station T1 was not in use. This was also expected to be the case at the western perimeter drain. Without pumping, surcharging has continued until leachate overflows into other pipework or the ground, including notably into a surface water culvert to the east of the site. The presence of leachate within the surface water system beneath the retail park may be as a result of the lack of pumping.
- It was considered likely that leachate contaminated water was directly discharging into the River Ely. Two concrete outfalls at the north end of the landfill site were recorded to be discharging water with a strong orange discolouration directly into the river.

3.2 Sources

It is known that the area surrounding the landfill is tipped (see Section 2.6) and may be a source of contamination. However for the purposes of this assessment, the source is considered to be limited to within the footprint of the Ferry Road landfill. Specifically the leachate generated by the site is considered to be a potential source of contaminants to the environment.

For this study, hazardous substances are considered to be non-compliant if a concentration exceeds the Method Detection Limit (MDL) at the receptors (see below). In the absence of data, especially from groundwater in the area, the assessment will be undertaken against the leachate data, however, it should be noted that this is a highly conservative approach as this does not consider dilution in the underlying groundwater or receiving surface waters.

Non-hazardous pollutants are considered to be potentially non-compliant if concentrations exceed the Environmental Quality Standard (EQS)[14] or Drinking Water Standard (DWS)[15] where no EQS is available.

3.3 Pathways

As the base of the landfill is unlined and where the tidal flat deposits are absent, the landfill material is considered to be in continuity with groundwater in the underlying Glaciofluvial Sheet

[14] The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015, Schedule 3, Part 2.
[15] The Water Supply (Water Quality) Regulations 2018.

Deposits, leachate is able to migrate vertically into groundwater followed by lateral migration in groundwater to surface water receptors including the River Ely.

Leachate potentially enters surface water (River Ely) through direct discharge of water from a pair of concrete pipes at the northern end of the landfill close to Pumping Station D. During a site inspection by Geotechnology, a strong orange discolouration of the water flowing from the pipes and foaming when it entered the river was noted, and they considered it highly likely that this was a direct discharge of leachate contaminated water into the river. Additionally, the groundwater in the Glaciofluvial Sheet Deposits is thought to be in hydraulic continuity with the river, therefore any contamination entering the superficial aquifer through the base of the landfill may migrate through the saturated zone into the River Ely.

Although no groundwater was encountered in the Mercia Mudstone Group during investigations, the stratum is designated as a Secondary (undifferentiated) aquifer and therefore there is the potential for the downward migration of contamination into the bedrock aquifer. Significant vertical migration is considered to be unlikely as migration will be limited by the low permeability of the strata.

3.4 Receptors

3.4.1 Hazardous substances

The compliance point for hazardous substances is the water table below the landfill site. For Ferry Road landfill, this is considered to be the piezometric surface of the groundwater in the Glaciofluvial Sheet Deposits beneath the site.

3.4.2 Non-hazardous substances

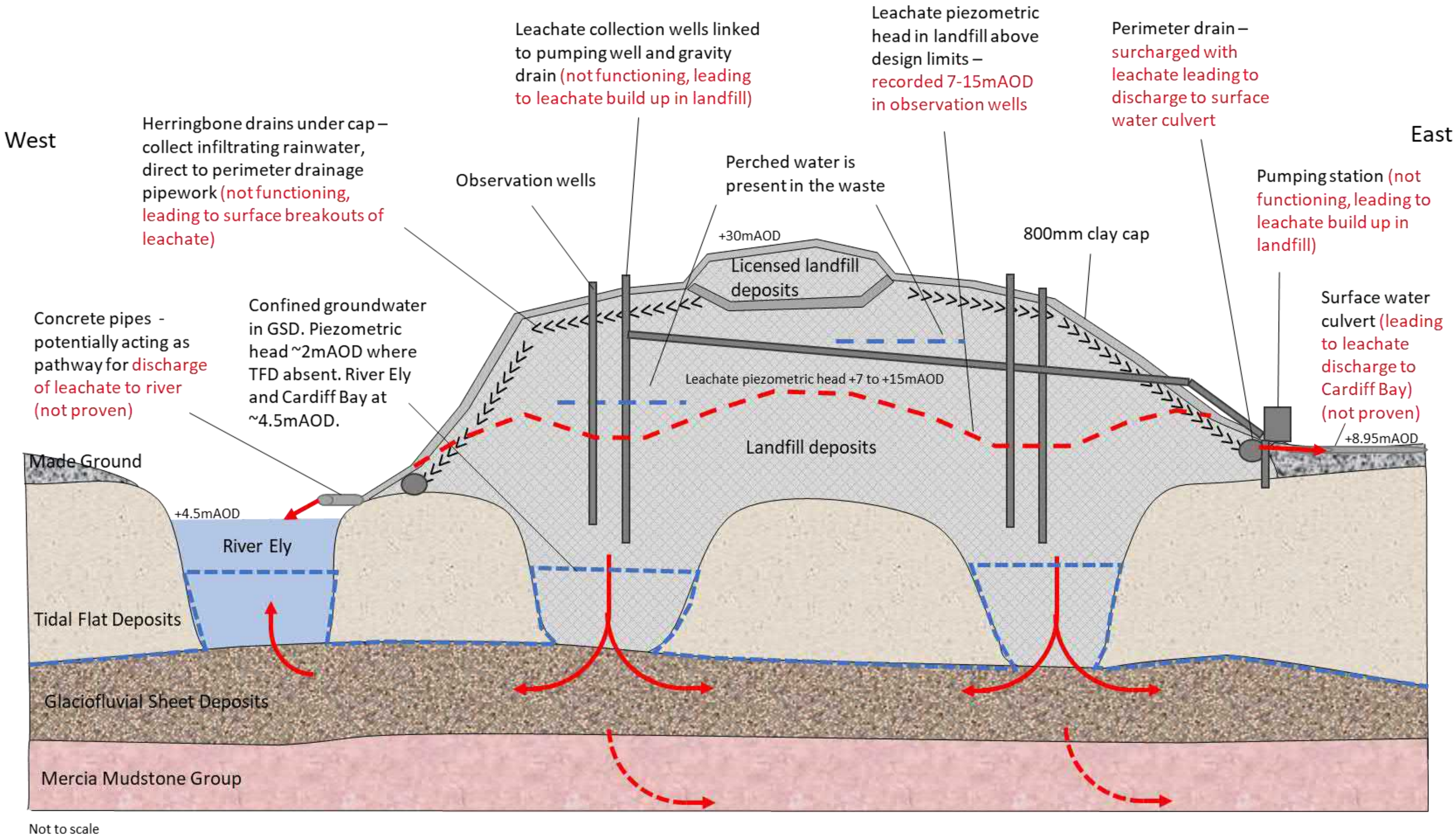
For non-hazardous pollutants, the groundwater in the Glaciofluvial Sheet Deposits is considered a pathway, rather than receptor, as it is not considered to be a resource for drinking water. No drinking water abstractions from the aquifer or SPZ have been identified within 1km of the site. Saline intrusion into the aquifer from the coast is also possible, reducing the likelihood that the aquifer would be used for drinking water. The groundwater does however act as a pathway by which contaminants can reach the River Ely, which is located adjacent to the west of the site.

As the aquifer is unlikely to be used for drinking water and direct contact of human health receptors with groundwater at the site is considered unlikely, no human health receptors have been identified.

3.5 Diagrammatic CSM

A diagrammatic hydrogeological CSM has been prepared to highlight key site details as shown in Figure 3.1. Note that this does not show human health or built environment receptors unless applicable to the hydrogeological assessment.

Figure 3.1: Conceptual Site Model for Ferry Road Landfill site



4 Monitoring Data

4.1 Monitoring Network

The landfill has a network of 19 leachate abstraction wells (LW) and a further 19 observation wells (OW), all of which are screened within the waste, and collect leachate. Additionally, pumping stations which were designed to pump the leachate to sewer and chambers from which the perimeter drains could be inspected are accessible for sampling of leachate. In addition to the leachate monitoring, a groundwater monitoring point and five surface water sampling locations are present around the landfill to monitor the quality of the surrounding environment for potential leachate impacts.

Between May and October 2021, an investigation into the potential migration of leachate was undertaken. This involved monthly sampling of 33 leachate monitoring locations including: 4 of the LW, 13 of the OW, 11 other locations within the waste and 5 of the pumping station/chambers, as well as one groundwater monitoring location upgradient of the landfill and 5 surface water monitoring locations (4 on the River Ely, both upgradient and downgradient of the landfill, and 1 location in Cardiff Bay[16]).

Longer term monitoring of groundwater has also been undertaken at one location (B&M car park, for ammonia and ammoniacal nitrogen only) and of effluent at three locations (Grangemoor, D Drive and Watkins Way) on a monthly basis since January 2019. The effluent was tested for limited parameters that are indicator species for leachate (ammonia as NH_4, ammoniacal nitrogen as N, chloride, nickel, cadmium, mecoprop and xylene).

The locations of all monitoring points are shown on a plan in Appendix A, and the known details of the points presented in Appendix B. The monitoring data itself is presented in Appendix C.

4.2 Compliance Criteria

As discussed in Section 3.4, to establish if the landfill complies with the Regulations, the concentrations of contaminants found in controlled waters are compared to available compliance criteria.

Concentrations found in controlled waters are referred to as ‘elevated’ if they exceed the criteria.

- Hazardous substances

  The compliance point for hazardous substances is the water table below or adjacent to the landfill site. A hazardous substance is considered to be non-compliant if a concentration exceeds the minimum reporting value (MRV), or the laboratory method detection level (MDL) where the MRV has not been met by analysis techniques, is found in groundwater. It should be noted however that the regulation of these substances was not in place at the time the landfill was formed and therefore the discharge of these substances remains likely.
- Non-hazardous pollutants

  Non-hazardous pollutants can be discharged to groundwater, but must not cause pollution. From the CSM, controlled water receptors were identified as surface waters (the River Ely and Cardiff Bay), whereas aquifers underlying the site were discounted as drinking water sources. The lowest EQS (of coastal and transitional waters, and freshwater) are therefore

[16] Leachate drainage built during the municipal tip operation discharged to foul sewer beneath Ferry Road. The pipework was originally planned to be discontinued when the T1 pumping station was constructed. Cardiff County Council investigated the pipe runs around the landfill and had concluded that the pipe was still active and continuing to transmit leachate, although the foul sewer it originally connected into has been re-purposed as a surface water system. The pipe then discharges into Cardiff Bay near the Watermark building. The outfall of this pipe was sampled to understand if it is providing a direct pathway for the leachate to the Bay.

used as compliance criteria in the assessment of risks to controlled water receptors and a non-hazardous pollutant is considered to be non-compliant if the concentration exceeds the EQS.

For some metals, the value of the EQS depends on the hardness of the groundwater. As hardness was not assessed as a parameter in the analysis suite, the most conservative EQS has been used in each case.

Where no EQS is available for a substance (coastal or inland waters), the DWS has been used instead.

For the nitrogen species ammoniacal nitrogen and ammonia, there are a range of naming conventions used in both the laboratory reports and the guidance values. It has been assumed that where 'total' is used in the contaminant description, irrespective of ammonia/ ammoniacal nitrogen/ ammonium, the unit description (mg/l as N or mg/l as NH_4) reflects both the unionised and ionised species in aqueous equilibrium. Therefore the EQS for 'Total ammonia as N' (0.3mg/l N for 'good quality in rivers) has been converted using the molar fraction to derive an equivalent EQS for the ammonia and ammonium as NH_4 of 0.38mg/l. It must be noted that these values are used as an initial screening tool and any exceedance does not necessarily equate to environmental harm.

4.3 Determinand Review

This section reviews the sampling between May and October 2021, with a comprehensive analysis suite undertaken on samples of leachate and surface water surrounding the Ferry Road landfill as well as one groundwater monitoring location.

4.3.1 Leachate

As an initial stage of the risk assessment process, a screening exercise has been undertaken to determine which substances are present in the leachate which may be causing impacts to groundwater and surface water in the area surrounding the landfill. Table 4-1 lists the substances that were detectable in the leachate, and the maximum concentration recorded. All non-detectable determinands have been removed from further assessment. A determinand is identified as a contaminant of concern (CoC) if more than 5% of the sample results exceed the compliance criteria (see Section 4.2 for more information on the criteria).

Table 4-1: Determinands above detection in leachate

Determinand	Units	Classification[17]	MRV / (MDL)	EQS (^DWS)	Max. result	Comment (CoC[#])
pH	pH units		-	6-9	6.9 - 8.2	Within EQS range (N)
TOC	$mg.l^{-1}$		-	-	492	No water quality criteria (N)
Ammoniacal N	$mg.l^{-1}$ as N	Non-hazardous	-	0.3	408	174 of 181 exceeding EQS (Y)
Nitrate	$mg.l^{-1}$ as NO_3		-	50^	381	8 of 181 exceeding DWS (N)
Nitrite	$mg.l^{-1}$ as NO_3		-	0.5^	67.2	56 of 181 exceeding DWS (Y)
Chloride	$mg.l^{-1}$		-	250^	2620	90 of 181 exceeding DWS (Y)
Sulphate	$mg.l^{-1}$		-	250^	872	4 of 181 exceeding DWS (N)
Arsenic	$\mu g.l^{-1}$	Hazardous	(0.2)	25	40	176 of 181 above MDL (Y)
Barium	$\mu g.l^{-1}$	Non-hazardous	-	1000^	1420	8 of 181 exceeding DWS (N)
Boron	$\mu g.l^{-1}$	Non-hazardous	-	1000^	16100	153 of 181 exceeding DWS (Y)

[17] Substances confirmed as hazardous according to Groundwater Directive 2006/118/EC, issued 2018 (Groundwater hazardous substances standards | wfd uktag). Classification is left blank where substance is not included in the list although these are considered as non-hazardous for the purposes of this assessment.

Determinand	Units	Classification[17]	MRV / (MDL)	EQS (^DWS)	Max. result	Comment (CoC#)
Cadmium	$\mu g.l^{-1}$	Non-hazardous	-	0.2	1.3	9 of 181 exceeding EQS (N)
Chromium	$\mu g.l^{-1}$	Non-hazardous	-	4.7	12.4	78 of 181 exceeding EQS (Y)
Copper	$\mu g.l^{-1}$	Non-hazardous	-	1	40	49 of 181 exceeding EQS (Y)
Iron	$\mu g.l^{-1}$		-	1000	21100	22 of 181 exceeding EQS (Y)
Lead	$\mu g.l^{-1}$	Hazardous	(4.1)	1.3	29.7	94 of 181 above MDL (Y)
Manganese	$\mu g.l^{-1}$		-	123	6250	156 of 181 exceeding EQS (Y)
Mercury	$\mu g.l^{-1}$	Hazardous	0.01	0.05	0.17	16 of 181 above MRV (Y)
Nickel	$\mu g.l^{-1}$	Non-hazardous	-	8.6	38.6	36 of 181 exceeding EQS (Y)
Potassium	$mg.l^{-1}$		-	12^	258	173 of 181 exceeding DWS (Y)
Zinc	$\mu g.l^{-1}$	Non-hazardous	-	6.8	516	64 of 181 exceeding EQS (Y)
TPH	$mg.l^{-1}$	Hazardous	(0.2)	0.01^	17.8	107 of 181 above MDL (Y)
Naphthalene	$\mu g.l^{-1}$	Hazardous	(0.05)	2	2.7	18 of 181 above MDL (Y)
Acenaphthene	$\mu g.l^{-1}$	Hazardous	(0.05)	-	5.3	29 of 181 above MDL (Y)
Fluorene	$\mu g.l^{-1}$	Hazardous	(0.05)	-	4.4	26 of 181 above MDL (Y)
Phenanthrene	$\mu g.l^{-1}$	Hazardous	(0.05)	-	5.8	26 of 181 above MDL (Y)
Anthracene	$\mu g.l^{-1}$	Hazardous	(0.05)	0.1	3.3	8 of 181 above MDL (N)
Fluoranthene	$\mu g.l^{-1}$	Hazardous	(0.05)	0.0063	4.4	23 of 181 above MDL (Y)
Pyrene	$\mu g.l^{-1}$		-	-	3.4	No water quality criteria (N)
Benzo(b)fluoranthene	$\mu g.l^{-1}$	Hazardous	(0.05)	0.00017	1.4	1 of 181 above MDL (N)
Indeno(123-cd)pyrene	$\mu g.l^{-1}$	Hazardous	(0.05)	0.00017	2.1	1 of 181 above MDL (N)
Mecoprop	$\mu g.l^{-1}$	Non-hazardous	-	18	102	16 of 181 exceeding EQS (Y)
Total Phenol	$mg.l^{-1}$	Non-hazardous	-	7.7	0.8	No EQS exceedances (N)
2-chlorophenol	$\mu g.l^{-1}$	Hazardous	0.1	50	3.6	5 of 181 above MDL (N)
2-methylphenol	$\mu g.l^{-1}$		-	-	9.7	No water quality criteria (N)
4-methylphenol	$\mu g.l^{-1}$		-	-	31	No water quality criteria (N)
2,4-dichlorophenol	$\mu g.l^{-1}$	Hazardous	0.1	0.42	4.4	2 of 181 above MDL (N)
4-chloro,3-methylphenol	$\mu g.l^{-1}$	Hazardous	0.1	-	11.9	9 of 181 above MDL (N)
2,4,5-trichlorophenol	$\mu g.l^{-1}$	Hazardous	(0.5)	-	3.3	6 of 181 above MDL (N)

CoC when >5% samples exceed compliance criteria

Limited compounds indicative of leachate have been monitored in longer term effluent monitoring (2019-2021) from three locations around the landfill: Grangemoor to the north-west of the landfill near Pumping Station D, D Drive (Dunleavy Drive) to the south of the landfill near the river, and Watkins Way approximately 650m to the south-east, towards Cardiff Bay. A summary of these results is provided in Table 4-4.

Table 4-2: Determinands assessed during longer term effluent monitoring

Determinand	Units	Classification[17]	MRV / (MDL)	EQS (^DWS)	Max. result	Comment (CoC#)
Ammonia	$mg.l^{-1}$ as NH_4	Non-hazardous	-	0.38	481	67 of 75 exceeding DWS (Y)
Chloride	$mg.l^{-1}$		-	250^	866	18 of 75 exceeding DWS (Y)
Nickel	$\mu g.l^{-1}$	Non-hazardous	-	8.6	32	13 of 75 exceeding EQS (Y)
Cadmium	$\mu g.l^{-1}$	Non-hazardous	-	0.2	0.4	2 of 75 exceeding EQS (N)
Mecoprop	$\mu g.l^{-1}$	Non-hazardous	-	18	27.8	2 of 75 exceeding EQS (N)
Ammoniacal Nitrogen	$mg.l^{-1}$ as N		-	0.3	370	67 of 75 exceeding EQS (Y)

Determinand	Units	Classification[17]	MRV / (MDL)	EQS (^DWS)	Max. result	Comment (CoC[#])
Xylene	µg.l^{-1}	Hazardous	3	30	32.9	2 of 75 exceeding MRV (N)

The results of all leachate monitoring were considered by the location which recorded the maximum concentration of each of the analysed contaminants. No specific trends were seen which indicate flow direction or areas of concern within the landfill that consistently recorded the highest results.

4.3.2 Groundwater

Table 4-3 summarises the substances which were detectable in groundwater samples from an upgradient monitoring point, located in the B&M car park. The analysis suite was the same as for the leachate samples.

Table 4-3: Determinands above detection in upgradient groundwater

Determinand	Units	Classification[17]	MRV / (MDL)	EQS (^DWS)	Max. result	Comment (CoC)
pH	pH units		-	6-9	7.7 – 8.1	Within EQS range
TOC	mg.l^{-1}		-	-	77.1	No water quality criteria
Ammoniacal nitrogen	mg.l^{-1} as N	Non-hazardous	-	0.3	0.085	No EQS exceedances
Nitrate	mg.l^{-1} as NO_3		-	50^	18.0	No DWS exceedances
Nitrite	mg.l^{-1} as NO_3		-	0.5^	0.017	No DWS exceedances
Chloride	mg.l^{-1}		-	250^	204	No DWS exceedances
Sulphate	mg.l^{-1}		-	250^	86.4	No DWS exceedances
Arsenic	µg.l^{-1}	Hazardous	(0.2)	25	2.4	5 of 5 above MDL (Y)
Barium	µg.l^{-1}	Non-hazardous	-	1000^	20.1	No DWS exceedances
Boron	µg.l^{-1}	Non-hazardous	-	1000^	830	No DWS exceedances
Chromium	µg.l^{-1}	Non-hazardous	-	4.7	7.7	5 of 7 exceeding EQS (Y)
Copper	µg.l^{-1}	Non-hazardous	-	1	3.6	6 of 7 exceeding EQS (Y)
Iron	µg.l^{-1}		-	1000	159	No EQS exceedances
Lead	µg.l^{-1}	Hazardous	(4.1)	1.3	14.7	4 of 7 above MDL (Y)
Manganese	µg.l^{-1}		-	123	9.9	No EQS exceedances
Mercury	µg.l^{-1}	Hazardous	0.01	0.05	0.13	1 of 5 above MDL (Y)
Nickel	µg.l^{-1}	Non-hazardous	-	8.6	2.3	No EQS exceedances
Potassium	mg.l^{-1}		-	12^	33.1	7 of 7 exceeding DWS (Y)

Ammonia and ammoniacal nitrogen have been monitored in longer term groundwater monitoring (2019-2021) also to the north-east of the landfill in the B&M car park. A summary of these results is provided in Table 4-4.

Table 4-4: Determinands assessed during longer term groundwater monitoring

Determinand	Units	Classification[17]	EQS (^DWS)	Max. result	Comment (CoC[#])
Ammonia	mg.l^{-1} as NH_4	Non-hazardous	0.38	234	9 of 25 exceeding EQS (Y)
Ammoniacal Nitrogen	mg.l^{-1} as N		0.3	180	9 of 25 exceeding EQS (Y)

The concentrations of ammonia and ammoniacal nitrogen observed at the groundwater monitoring point are indicative of the dilute leachate being occasionally present in the samples. As not all samples were found to be impacted, it is likely that any leachate release from the landfill occurs in discrete events (potentially related to meteorological events) rather than continuously. This may explain why the concentrations of ammoniacal nitrogen of the same order of magnitude were not recorded during the more recent (May to October 2021) monitoring.

4.3.3 Surface Water

Table 4-5 summarises the substances which were detectable in surface water samples from the monitoring, split into Ferry Court outfall (Cardiff Bay), Outfall A (River Ely) and samples from the River Ely due to the potential ingress of leachate into the outfall. This is to identify where other leachate influences may be being seen, that would otherwise be masked.

Plots showing concentrations of key contaminants through time at the different monitoring points are presented in Appendix D.

Table 4-5: Determinands above detection limits in surface water

Determinand	Units	Classification[17]	MRV / (MDL)	EQS (^DWS)	Ferry Court Outfall (Cardiff Bay) Max. result	Ferry Court Outfall (Cardiff Bay) Comment (CoC#)	Outfall A (River Ely) Max. result	Outfall A (River Ely) Comment (CoC#)	River Ely samples Max. result	River Ely samples Comment (CoC#)
pH	pH units		-	6-9	7.3 - 7.8	Within EQS range (N)	7.6 - 8.2	Within EQS range (N)	7.6 - 8.2	Within EQS range (N)
TOC	$mg.l^{-1}$		-	-	157	No water quality criteria (N)	44.9	No water quality criteria (N)	54.3	No water quality criteria (N)
Ammoniacal nitrogen	$mg.l^{-1}$ as N	Non-hazardous	-	0.3	44.9	7 of 7 exceeding EQS (Y)	0.64	4 of 7 exceeding EQS (Y)	0.72	4 of 21 exceeding EQS including in upstream sample (Y)
Nitrate	$mg.l^{-1}$ as NO_3		-	50^	7.2	No DWS exceedances (N)	11.6	No DWS exceedances (N)	16.5	No DWS exceedances (N)
Nitrite	$mg.l^{-1}$ as NO_3		-	0.5^	0.51	1 of 7 exceeding DWS (Y)	0.29	No DWS exceedances (N)	0.26	No DWS exceedances (N)
Chloride	$mg.l^{-1}$		-	250^	522	1 of 7 exceeding DWS (Y)	33.8	No DWS exceedances (N)	36.7	No DWS exceedances (N)
Sulphate	$mg.l^{-1}$		-	250^	28.1	No DWS exceedances (N)	29.4	No DWS exceedances (N)	29.3	No DWS exceedances (N)
Arsenic	$\mu g.l^{-1}$	Hazardous	(0.2)	25	1.0	6 of 7 above MDL (Y)	1.4	7 of 7 above MDL (Y)	2.5	18 of 21 above MDL, including in upstream sample (Y)
Barium	$\mu g.l^{-1}$	Non-hazardous	-	1000^	907	No DWS exceedances (N)	107	No DWS exceedances (N)	107	No DWS exceedances (N)
Boron	$\mu g.l^{-1}$	Non-hazardous	-	1000^	2820	2 of 7 exceeding DWS (Y)	96.2	No DWS exceedances (N)	169	No DWS exceedances (N)
Chromium	$\mu g.l^{-1}$	Non-hazardous	-	4.7	3.2	No EQS exceedances (N)	7.7	5 of 7 exceeding EQS (Y)	10.2	13 of 21 exceeding EQS, including in upstream sample (Y)
Copper	$\mu g.l^{-1}$	Non-hazardous	-	1	5.5	7 of 7 exceeding EQS (Y)	17.4	7 of 7 exceeding EQS (Y)	4.4	21 of 21 exceeding EQS, including in upstream sample (Y)
Iron	$\mu g.l^{-1}$		-	1000	1200	1 of 7 exceeding EQS (Y)	312	No EQS exceedances (N)	183	No EQS exceedances (N)
Lead	$\mu g.l^{-1}$	Hazardous	(4.1)	1.3	18	1 of 7 above MDL (Y)	18.7	4 of 7 above MDL (Y)	8.2	8 of 21 above MDL, including in upstream sample (Y)
Manganese	$\mu g.l^{-1}$		-	123	1260	3 of 7 exceeding EQS (Y)	8.3	No EQS exceedances (N)	15.9	No EQS exceedances (N)
Mercury	$\mu g.l^{-1}$	Hazardous	0.01	0.05	BDL	No MDL exceedances (N)	0.13	1 of 7 above MDL (Y)	0.13	4 of 21 above MDL, including in upstream sample (Y)
Nickel	$\mu g.l^{-1}$	Non-hazardous	-	8.6	3.4	No EQS exceedances (N)	2.1	No EQS exceedances (N)	3.0	No EQS exceedances (N)
Potassium	$mg.l^{-1}$		-	12^	37.2	6 of 7 exceeding DWS (Y)	6.5	No DWS exceedances (N)	6.7	No DWS exceedances (N)
Zinc	$\mu g.l^{-1}$	Non-hazardous	-	6.8	16.3	3 of 7 exceeding EQS (Y)	4.3	No EQS exceedances (N)	21.4	4 of 21 exceeding EQS, including in upstream sample (Y)

Determinand	Units	Classification[17]	MRV / (MDL)	EQS (^DWS)	Ferry Court Outfall (Cardiff Bay)		Outfall A (River Ely)		River Ely samples	
					Max. result	Comment (CoC#)	Max. result	Comment (CoC#)	Max. result	Comment (CoC#)
TPH	$mg.l^{-1}$	Hazardous	(0.2)	0.01^	0.6	2 of 7 above MDL (Y)	0.2	1 of 7 above MDL (Y)	1.4	4 of 21 above MDL, including in upstream sample (Y)
Acenaphthene	$\mu g.l^{-1}$	Hazardous	(0.05)	-	1.6	1 of 7 above MDL (Y)	BDL	No MDL exceedances (N)	1.1	1 of 28 above MDL (N)
Phenanthrene	$\mu g.l^{-1}$	Hazardous	(0.05)	-	1.1	2 of 7 above MDL (Y)	BDL	No MDL exceedances (N)	0.14	1 of 28 above MDL (N)
Benzo(a)anthracene	$\mu g.l^{-1}$	Non-hazardous	-	-	BDL	No MDL exceedances (N)	BDL	No MDL exceedances (N)	0.8	Recorded in upstream sample. No water quality criteria (N)
Fluoranthene	$\mu g.l^{-1}$	Hazardous	(0.05)	0.0063	BDL	No MDL exceedances (N)	BDL	No MDL exceedances (N)	0.7	2 of 28 above MDL, both in upstream sample (Y)
Mecoprop	$\mu g.l^{-1}$	Non-hazardous	-	18	1.4	No EQS exceedances (N)	BDL	No MDL exceedances (N)	1.1	No EQS exceedances (N)
Total Phenol	$mg.l^{-1}$	Non-hazardous	-	7.7	0.26	No EQS exceedances (N)	0.21	No EQS exceedances (N)	0.22	No EQS exceedances (N)
2,4,5-trichlorophenol	$\mu g.l^{-1}$	Hazardous	(0.5)	-	BDL	No MDL exceedances (N)	BDL	No MDL exceedances (N)	2.0	1 of 28 above MDL, in upstream sample (N)

CoC when >5% samples exceed compliance criteria

BDL = Below laboratory method detection limit

4.3.4 Summary

Table 4-6 summarises the CoC based on the analysis of samples as presented in Table 4-1, Table 4-3 and Table 4-5. As groundwater sampling was only undertaken up-hydraulic gradient of the site, the identified CoC from this are likely to show background contamination in the area, rather than contamination sourced from the landfill.

Table 4-6: Summary of contaminants of concern

Determinand	Classification	CoC in leachate	CoC in Ferry Court outfall (Cardiff Bay)	CoC in Outfall A (River Ely)	CoC in River Ely	CoC in upgradient groundwater
pH		N	N	N	N	N
TOC		N	N	N	N	N
Ammonia	Non-hazardous	Y	Y	Y	Y	N
Nitrate		N	N	N	N	N
Nitrite		Y	Y	N	N	N
Chloride		Y	Y	N	N	N
Sulphate		N	N	N	N	N
Arsenic	Hazardous	Y	Y	Y	Y#	Y
Barium	Non-hazardous	N	N	N	N	N
Boron	Non-hazardous	Y	Y	N	N	N
Cadmium	Non-hazardous	N	N	N	N	N
Chromium	Non-hazardous	Y	Y	Y	Y#	Y
Copper	Non-hazardous	Y	Y	Y	Y#	Y
Iron		N	Y^	N	N	N
Lead	Hazardous	Y	Y	Y	Y#	Y
Manganese		Y	Y	N	N	N
Mercury	Hazardous	Y	N	Y	Y#	Y
Nickel	Non-hazardous	Y	N	N	N	N
Potassium		Y	Y	N	N	Y
Zinc	Non-hazardous	Y	Y	N	Y#	N
TPH	Hazardous	Y	Y	Y	Y#	N
Naphthalene	Hazardous	Y	N	N	N	N
Acenaphthene	Hazardous	Y	Y	N	N	N
Fluorene	Hazardous	Y	N	N	N	N
Phenanthrene	Hazardous	Y	Y	N	N	N
Anthracene	Hazardous	N	N	N	N	N
Fluoranthene	Hazardous	Y	N	N	Y#	N
Pyrene		N	N	N	N	N
Benzo(a)anthracene	Hazardous	N	N	N	N	N
Benzo(b)fluoranthene	Hazardous	N	N	N	N	N
Indeno(123-cd)pyrene	Hazardous	N	N	N	N	N
Mecoprop	Non-hazardous	Y	N	N	N	N
Total Phenol	Non-hazardous	N	N	N	N	N
2-chlorophenol	Hazardous	N	N	N	N	N
2-methylphenol		N	N	N	N	N
4-methylphenol		N	N	N	N	N

Determinand	Classification	CoC in leachate	CoC in Ferry Court outfall (Cardiff Bay)	CoC in Outfall A (River Ely)	CoC in River Ely	CoC in upgradient groundwater
2,4-dichlorophenol	Hazardous	N	N	N	N	N
2,4,5-trichlorophenol	Hazardous	N	N	N	N	N
4-chloro,3-methylphenol	Hazardous	N	N	N	N	N

Note that these determinands were also recorded above criteria in the upstream sample.

^ If the pipe through which the drainage travels to the outfall is iron, this may explain the elevated concentration of iron in these samples.

Those determinands that are not considered to be a CoC in either leachate or surface waters have been greyed out.

4.4 Controlled Waters Review and Preliminary Risk Assessment

4.4.1 Contaminant concentrations

It can be seen from Table 4-6 that numerous CoC are present in the leachate samples, with some of these also being detected in surface water samples. However, concentrations of the CoC were recorded above the assessment criteria at the upstream location for the majority of the contaminants of concern. This indicates that the water in the River Ely is impacted by multiple contaminants before it reaches the vicinity of the landfill. Some inorganic species were also noted in groundwater in the upgradient samples, which also indicates that impacts are present in the shallow aquifer prior to groundwater reaching the landfill. Numerous other sources of contamination exist in the area, including the historical widespread deposition of waste as well as commercial/industrial units, and it is likely that these are contributing to the quality of the water around the landfill.

Only limited PAH species were detectable in samples adjacent to and downstream of the landfill, and at the outfall in Cardiff Bay, rather than in upstream samples as discussed in the paragraph above. The River Ely is used by motorised vessels, which could provide a source of these contaminants. Additional consideration should also be given to other potential sources of contamination in the area, which may include the significant deposits of waste that cover the area, as shown on Figure 2.3, and the many industrial uses which have historically existed in the area and may continue impact the area.

Concentrations recorded in Outfall A are not significantly raised above the upstream sample results. When considering the high concentrations of the other CoCs in the leachate, the chemical signature of the Outfall A samples is not indicative of leachate being present.

Concentrations recorded in ‘River sample under Bypass’ which is located in the River Ely downstream of the landfill (as shown in Figure A.1 in Appendix A) are similar to the concentrations seen in the upstream sample (River sample Rail Bridge) and therefore it is considered that the landfill is not causing significant additional pollution of the River Ely.

Unlike Outfall A, the samples collected from the Ferry Court Outfall do show elevated concentrations of many of the CoC, including ammoniacal nitrogen which is commonly present in landfill leachate. It is, therefore, considered likely that diluted leachate is present in the effluent leaving the outfall and entering Cardiff Bay. Vegetation in the vicinity of this outfall does not show any signs of distress which indicates that although present, the recorded concentrations of contaminants in the effluent are not causing significant harm to flora at this location.

Limited sampling of the groundwater has been undertaken, not including any samples downgradient of the landfill. It is therefore not possible to provide an assessment of impacts to groundwater in the vicinity of the landfill.

4.4.2 Dilution calculation

From the assessment, it is considered likely that leachate is present in the effluent from Ferry Court Outfall and it is entering Cardiff Bay. However, due to the size of the Bay, it is considered likely that the effluent will very quickly and significantly dilute.

Based on the maximum concentrations recorded during the monitoring, ammoniacal nitrogen was seen to exceed the assessment criteria most significantly (maximum concentration of 408mg/l in leachate compared to 0.3mg/l). Based on the mean concentration entering Cardiff Bay at Ferry Court outfall[18], 54 litres of clean water would be required to dilute it to below the WQS. Based on an estimated depth of the bay of 1.0m near the outfall, this would require an area of water of 0.054m^2 to dilute the concentration to below the WQS. The most impacted leachate would need 1,360L of clean water to dilute it, which equates to an area of just over 1.0m^2 assuming a typical depth of 1.0m close to the shore. As the total area of Cardiff Bay is around 1.5km^2, any impacts would be insignificant and extremely localised due to rapid dilution . It must be noted that these calculations are approximate and as background concentrations of ammoniacal nitrogen in Cardiff Bay are not available at the time of writing, these have not been taken into consideration.

The exact volume of effluent entering the bay from the Outfalls is unknown, however the outfalls mainly discharge surface water drainage, thus the higher flow rates are also likely to be associated with increased dilution of the effluent within the pipes.

Overall, from the information known about the concentration of the CoC in the effluent and the enormous quantity of water in Cardiff Bay, dilution is considered to significantly reduce the concentrations of the contaminants that enter the Bay and therefore any impact is not extensive.

4.4.3 Pollution events

Pollution events are categorised by NRW based on the degree of impact and response required. It is understood that NRW has not categorised the incidents related to the potential leachate release into the River Ely or Cardiff Bay. From the sample results, there is not considered to be a significant input of leachate into the River Ely and therefore only Cardiff Bay will be considered here.

Based on the definitions provided in the NRW Incident Categorisation Guidance Note 102[3], it is likely that any incidents associated with leachate release into Cardiff Bay would be Low (minor impact) to water and water with reference to human health, on the basis of the significant dilution that would occur within the bay and that the concentrations within the waters would not give rise to risks to human health. It is also likely that the impact would be Low (minor impact) on public health and nature conservation/biodiversity as the recorded concentrations of the CoC present a minimal risk to health and are unlikely to affect the status or objectives of a WFD water body (due to the known other impacts from other industrial uses and landfilling in the area).

4.5 Risk Assessment Summary

Although sample results indicate that there is some consistency between CoC identified in leachate and in surface water samples, many of these contaminants were also commonly detected in upstream samples, where present in surface water. This indicates that the water in the River Ely is impacted with multiple contaminants before it reaches the vicinity of the landfill and therefore the landfill is not causing significant additional pollution of the River Ely. Limited species were also detected in upgradient shallow groundwater, indicating that the

[18] The mean result from the seven monitoring rounds has been calculated to be 16.3mg/l.

aquifer in the wider area is impacted by inorganics prior to it reaching the landfill. Numerous other sources of contamination exist in the area, including the historical widespread deposition of waste as well as commercial/industrial units, and it is likely that these are contributing to the quality of the water around the landfill, including groundwater where elevated concentrations of some metals are seen in the upgradient sample. The condition of the groundwater in the vicinity of the landfill is not well defined and therefore conclusions on impacts to the underlying aquifer is not possible with available data.

The CSM presented in Section 3 describes the potential pathways through which the leachate is migrating from the landfill. Based on the available data, the key potential pollutant linkages are discussed below:

- Failure of the leachate collection system leading to increased piezometric head of the leachate within the landfill.
  - As the base of the landfill is not sealed, and there is connectivity to the underlying groundwater in the Tidal Flat Deposits, an increased pressure head of leachate will likely result in direct entry to the groundwater, and lateral migration away from the landfill in the absence of the designed hydraulic containment. Impacts to groundwater from the landfill are currently unknown based on limited groundwater monitoring data. The only location sampled to date as part of the landfill investigation is hydraulically upgradient of the landfill and therefore is unlikely to show the full extent of any impacts to groundwater.
  - Increased head of leachate may also result in permeation of leachate through the clay cap at the sides where direct contact is occurring, resulting in breakouts on the surface of the landfill, which were seen during a site walkover in 2021 by Geotechnology.
- Overflowing perimeter drains leading to leachate breakouts on the landfill sides and leakage to a surface water culvert to the east of the site.
  - The perimeter drains were engineered to collect infiltrating rainfall, which would be removed by pumping stations. However, failure of the pumping stations has led to the drains becoming surcharged and discharging to the surface, where leachate is able to enter surface water culverts, as seen during the site walkover. This may also result in breakouts on the surface of the landfill.
  - The sampling from Ferry Court outfall indicates that the water in this pipe is impacted with leachate. Despite this, from the information known about the concentration of the CoC in the effluent and the enormous quantity of water in Cardiff Bay, dilution is considered to significantly reduce the concentrations of the contaminants that enter the Bay and therefore any impact is not extensive. It must also be noted that the inputs to this pipe are not fully understood at the time of writing and therefore could be sourced from outside of the Ferry Road site. Investigations into this are ongoing.
- The direct discharging of leachate into the River Ely via two concrete outfalls to the north end of the landfill site.
  - Although these were observed by Geotechnology to be discharging water with a strong orange discolouration directly into the river, the sampling results do not indicate that this is leachate.

5 Assessment of accidents and failure scenarios

In accordance with the Environment Agency's guide on Hydrogeological Risk Assessment for landfill operators[19], also adopted by NRW[20], an assessment of the risk and consequences of short and long term failure scenarios has been undertaken.

The assessment incorporates information from the conceptual model in order to identify feasible accident scenarios specific to Ferry Road landfill site. The classification of probability and consequence is based upon the guidance in CIRIA C552[21]. The assessment is presented in Table 5-1.

Table 5-1: Assessment of potential accidents and short and long term failure scenarios

Accident	Resulting incident	Probability	Consequence	Risk	Mitigation measure
Failure of leachate management system / pipework integrity	Release of leachate to environment through increasing levels within the landfill	High likelihood	Medium	High	This is assessed to be occurring. Further actions required to restart system or implement another management technique.
Stability failure/ subsidence/ landslide / differential settlement	Damage to capping/ surface water management system / leachate management system	Unlikely	Severe	Moderate/low	Landfill completed, majority of wastes non-compressible/degradable and deposited in 1970s so unlikely to undergo significant further settlement.
Fire	Damage to internal leachate management system. Cause stability failure	Unlikely	Medium	Low	Landfill completed so very low probability of occurrence. Waste materials deposited are typically non-flammable.
Flooding	Damage to internal leachate management system. Release of leachate to the environment. Cause stability failure	Low	Medium	Moderate/low	There is the potential for flooding from the River Ely to occur, however leachate release to the environment would be mitigated by significant dilution in surface waters.

[19] Environment Agency, 2021, Landfill operators: Environmental permits. Available online at: What to include in your hydrogeological risk assessment - Landfill operators: environmental permits - Guidance - GOV.UK (www.gov.uk)

[20] Natural Resources Wales, 2021. Guidance on water discharges. Available online at: https://naturalresourceswales.gov.uk/permits-and-permissions/water-discharges-and-septic-tanks/discharges-to-surface-water-and-groundwater/guidance/?lang=en

[21] Ciria, 2001, Contaminated land risk assessment. A guide to good practice (C552)

6 Review of monitoring, management plans and requirement for further work

6.1 Current monitoring and management arrangements

The current monitoring regime at the site comprises monthly monitoring of one groundwater and three leachate locations since 2019 for a limited range of determinands. More recent monitoring (May to October 2021) has also been undertaken for a comprehensive suite of contaminants at 33 leachate locations and five surface water locations.

The current leachate and surface water management system comprises 19 leachate abstraction wells and a network of herringbone drains installed directly under the cap, which both feed into gravity drains where the leachate is taken to one of the three pumping stations around the site for onward discharge to foul sewer. However, it is known that this has not been functioning for some time causing an increase in leachate head and loss of hydraulic containment, thus resulting in migration of leachate to controlled waters and subsequent pollution of controlled waters.

6.2 Proposed changes to monitoring and management

The monitoring network is considered adequate at present for leachate and surface water, and therefore installation of additional monitoring points is not recommended at this stage. However, based upon the findings of this report, it is recommended that the groundwater monitoring regime is expanded to include additional wells surrounding the landfill. A minimum of three new downgradient groundwater monitoring wells is recommended if appropriate locations can be identified and accessed (areas where waste is not present between the site and surface waters). If this is not possible, more intensive monitoring (additional locations/ increased frequency) of the surface water may be required as the surface water is the key receptor for controlled waters.

In order to reduce the pollution from the site to controlled waters, it is recommended that the pumping system for leachate management is restarted as soon as possible, and regular maintenance and review of the system’s performance is undertaken. The piezometric head of leachate inside the landfill and in the perimeter drains must be reduced. By maintaining the design level of 4mAOD leachate within the landfill, the release of leachate into the underlying aquifer is expected to significantly reduce. It is understood that the client is already investigating the physical infrastructure at the site with the aim of restarting the system as soon as practicable and it is understood that some pumps have been reactivated.

If not already completed, the pipework leading into the surface water culvert that discharges into the Cardiff Bay at Ferry Court should be sealed so that leachate can no longer enter the surface water system.

Once these management measures are reinstated, and proven to be working, it is considered suitable to reduce the current monitoring regime to quarterly monitoring, with fewer monitoring locations and a reduced contaminant suite (based on the CoC identified within this report). It is recommended that the key locations for the quarterly monitoring comprise:

- Six locations across the landfill for leachate level monitoring and sampling, including three in the old river channel (LW or OW wells) and three within the wider waste deposits.
- Pumping stations B, C, D and T1.
- Existing surface water monitoring locations including Ferry Court outfall.

- Two locations in Cardiff Bay; within 20m of the Ferry Court outfall and in the wider area, along with observations recorded at the outfall at the time of sampling.
- At least three downgradient groundwater monitoring wells in addition to the upgradient monitoring point (B&M car park [FR1]) if suitable locations can be identified and accessed.

The monitoring suite should comprise: ammoniacal nitrogen, nitrate, nitrite, pH, chloride, sulphate, TOC, metals (arsenic, barium, boron, cadmium, chromium III, chromium VI, copper, iron, lead, manganese, total mercury, nickel, potassium, zinc), total TPH, PAH (USEPA 16 speciated) and mecoprop.

6.3 Requirement for further work

A detailed quantitative risk assessment (DQRA) using modelling software to assess the degradation of the contaminants from the leachate is not considered appropriate for this site. This is based on the proximity of the landfill to the River Ely, and the short distance and timeframe through which contaminants would degrade or be lost from solution through sorption to aquifer materials, and therefore the results would likely show that the input standards used (the compliance criteria) are appropriate for the site.

6.4 Requirements to support closure of the waste management licence.

Based on the available data, it is assumed that the engineered cell is suitably constructed to support adequate containment and management of any leachate produced by the cell. At this time based on the current monitoring network, it is not possible to differentiate the source of any leachate being produced (engineered cell or historical deposits). However, there is a significant risk of puncturing the basal liner in the engineered cell during drilling of additional wells in order to gain this information, and it is therefore not recommended.

Instead, it is considered that re-instatement of the pumping system should control the external migration of any leachate from the engineered cell, although significant leachate emissions from the cell are considered unlikely, and therefore any environmental impacts from the engineered cell are likely to be minimal.

Full requirements to support the closure of the licence for Ferry Road landfill should be discussed with Natural Resources Wales.

7 Conclusions and Recommendations

7.1 Summary and Conclusions

The area surrounding the Ferry Road Landfill, located within the Grangetown area of Cardiff, was the subject of significant historical tipping prior to 1940. In the 1970s, waste was used to infill the old meandering channel of the River Ely that became redundant after the river was straightened. Wastes accepted on site comprised municipal waste, including household, commercial, industrial, civic amenity wastes, street sweepings and litter, and later contaminated general wastes, contaminated soil and subsoil. An engineered cell was formed in the 1990s when waste materials excavated as part of the adjacent site re-development was deposited on an area of the landfill. The site was engineered to provide containment above the historical tipping and wastes received included contaminated soils, hardcore, municipal refuse (including asbestos) and construction spoil arisings. The entire landfill was covered, restored and developed to create Grangemoor Park, which was completed in 2000. A network of wells was installed during the restoration for leachate and gas management. It is understood that the whole site is under an operational waste management licence.

The original waste tipping at the site pre-dates landfill licensing regulations and therefore there was no requirement for basal engineering. Instead, the waste was deposited directly onto the Tidal Flat Deposits associated with the estuarine flats. From the borehole logs in the area, it is known that the Tidal Flat Deposits comprise a silty clay which confines groundwater in the underlying sands and gravels, and therefore it is of low permeability where present. However, it is also understood that the Tidal Flat Deposits is absent in the old channels of the river, and at these locations, waste directly overlies the Glaciofluvial Sheet Deposits, resulting in no protection to the underlying hydrogeology.

The leachate management system was found not to be operational during 2021 and therefore samples of leachate, surface water and groundwater were collected and analysed to better understand the impacts of any leachate migration from the landfill.

Although sample results indicate that there is some consistency between CoC identified in leachate and in surface water samples, many of these contaminants were also commonly detected in upstream samples, where present in surface water, which are unlikely to be influenced by contamination from the landfill. This indicates that the water in the River Ely is impacted with multiple contaminants before it reaches the vicinity of the landfill. Concentrations recorded in ‘River sample under Bypass’ which is located in the River Ely downstream of the landfill (as shown in Figure A.1 in Appendix A) are similar to the concentrations seen in the upstream sample (River sample Rail Bridge) and therefore it is considered that the landfill is not causing significant additional pollution of the River Ely.

Limited species were also detected in upgradient shallow groundwater, indicating that the aquifer in the wider area is impacted by inorganics prior to reaching the landfill. Numerous other sources of contamination exist in the area, including the historical widespread deposition of waste as well as commercial/industrial units, and it is likely that these are contributing to the quality of the water around the landfill, including groundwater where elevated concentrations of some metals are seen in the upgradient sample. The condition of the groundwater in the vicinity of the landfill is not well defined and therefore conclusions on impacts to the underlying aquifer is not possible with available data.

The CSM identified potential pathways through which the leachate is migrating from the landfill:

- Failure of the leachate collection system leading to increased piezometric head of the leachate within the landfill.
  - As the base of the landfill is not sealed, and there is connectivity to the underlying groundwater in the Tidal Flat Deposits, an increased pressure head of leachate will likely result in direct entry to the groundwater, and lateral migration away from the landfill in the absence of the designed hydraulic containment. Impacts to groundwater from the landfill are currently unknown based on limited groundwater monitoring data. The only location sampled to date as part of the landfill investigation is hydraulically upgradient of the landfill and therefore is unlikely to show the full extent of any impacts to groundwater.
  - Increased head of leachate may also result in permeation of leachate through the clay cap at the sides where direct contact is occurring, resulting in breakouts on the surface of the landfill, which were seen during a site walkover in 2021 by Geotechnology.
- Overflowing perimeter drains leading to leachate breakouts on the landfill sides and leakage to a surface water culvert to the east of the site.
  - The perimeter drains were engineered to collect infiltrating rainfall, which would be removed by pumping stations. However, failure of the pumping stations has led to the drains becoming surcharged and discharging to the surface water drainage system, where leachate is then able to enter surface water culverts, as seen during the site walkover. This may also result in breakouts on the surface of the landfill.
  - The sampling from Ferry Court outfall indicates that the water in this pipe is impacted with leachate. Despite this, from the information known about the concentration of the CoC in the effluent and the enormous quantity of water in Cardiff Bay, dilution is considered to significantly reduce the concentrations of the contaminants that enter the Bay and therefore any impact is not extensive. It must also be noted that the inputs to this pipe are not fully understood at the time of writing and therefore could be sourced from outside of the Ferry Road site. Investigations into this are ongoing.
- The direct discharging of leachate into the River Ely via two concrete outfalls to the north end of the landfill site.
  - Although these were observed by Geotechnology to be discharging water with a strong orange discolouration directly into the river, the sampling results were not conclusive that this is leachate.

Pollution events are categorised by NRW based on the degree of impact and response required. Based on the available data, it is considered that the discharge from the Ferry Court outfall would be categorised as a Low (minor impact) pollution incident.

A detailed quantitative risk assessment (DQRA) using modelling software to assess the degradation of the contaminants from the leachate is not considered appropriate for this site. This is based on the proximity of the landfill to the River Ely, and the short distance and timeframe through which contaminants would degrade or be lost from solution through sorption to aquifer materials, and therefore the results would likely show that the input standards used (the compliance criteria) are appropriate for the site.

7.2 Recommendations

Following the risk assessment, recommendations with respect to hydrogeological impacts, are outlined below to manage any significant risks and move the site towards closure:

- If not already completed, the pipework leading into the surface water culvert that discharges into the Cardiff Bay at Ferry Court should be sealed so that leachate can no longer enter the surface water system.
- The pumping system for leachate management should be re-instated so that the piezometric head of leachate inside the landfill and in the perimeter drains is reduced. By maintaining the

designed level of 4mAOD leachate within the landfill, the release of leachate into the underlying aquifer should significantly reduce.

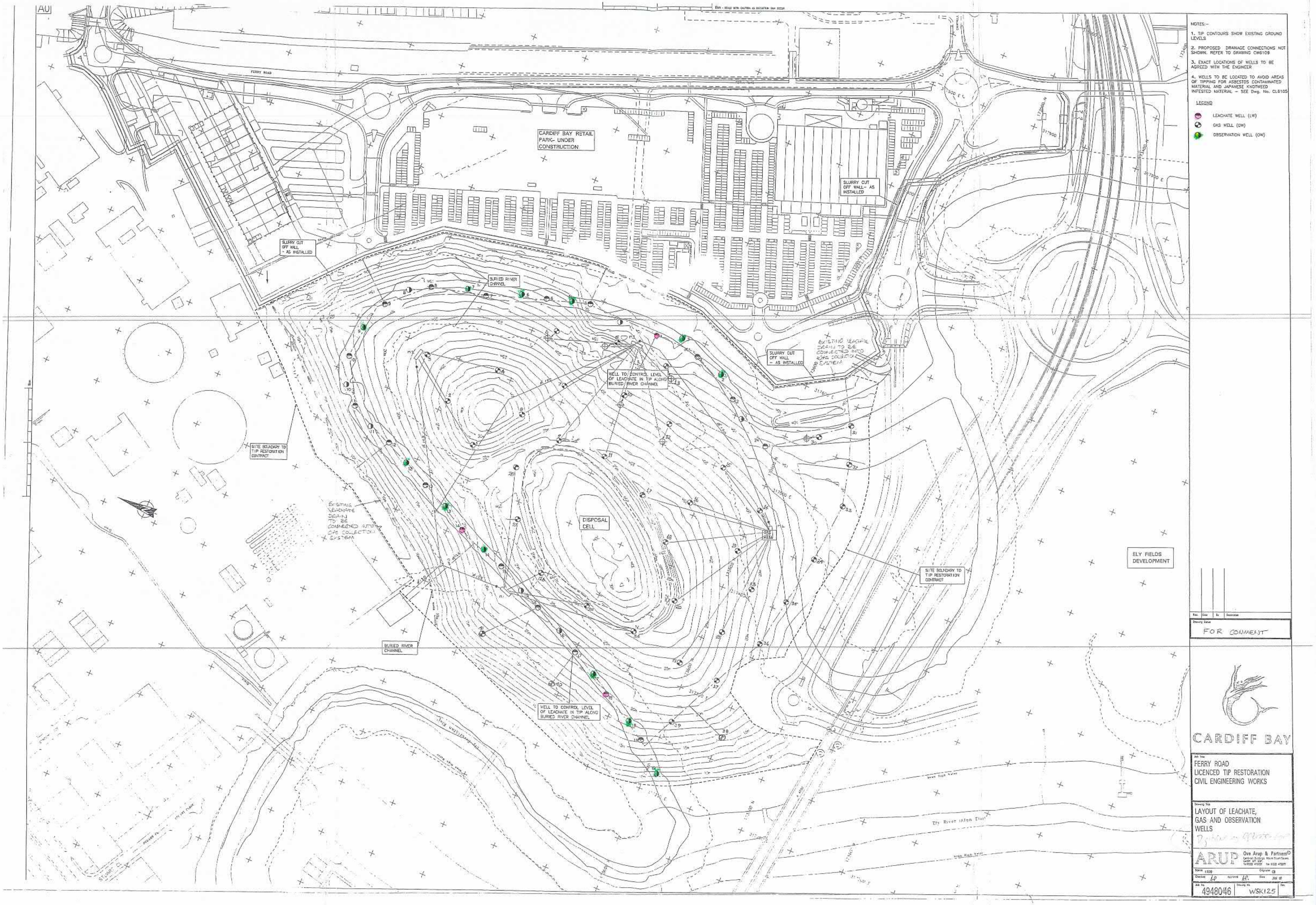
- A sufficient number and distribution of leachate monitoring wells are considered to exist across the landfill, and therefore no further wells are considered to be required. However, there is a current lack of groundwater data on which to base conclusions about impacts to underlying aquifers, therefore it would be prudent to increase the groundwater monitoring network. A minimum of three new downgradient groundwater monitoring wells is recommended if appropriate locations can be identified and accessed. If this is not possible, more intensive monitoring (additional locations/ increased frequency) of the surface water may be required as the surface water is the key receptor for controlled waters.
- Once the above points are actioned, it is recommended that the future monitoring programme for the landfill comprises quarterly monitoring of key locations until permit surrender is agreed and the landfill is closed. The permit surrender process will determine the monitoring programme beyond this point. It is recommended that the key locations for the quarterly monitoring comprise:
  - Six locations across the landfill for leachate level monitoring and sampling, including three in the old river channel (LW or OW wells) and three within the wider waste deposits.
  - Pumping stations B, C, D and T1.
  - Existing surface water monitoring locations including Ferry Court outfall.
  - Two locations in Cardiff Bay; within 20m of the Ferry Court outfall and in the wider area, along with observations recorded at the outfall at the time of sampling;
  - At least three downgradient groundwater monitoring wells in addition to the upgradient monitoring point (B&M car park [FR1]) if suitable locations can be identified and accessed.

  The monitoring suite should comprise: ammoniacal nitrogen, nitrate, nitrite, pH, chloride, sulphate, TOC, metals (arsenic, barium, boron, cadmium, chromium III, chromium VI, copper, iron, lead, manganese, total mercury, nickel, potassium, zinc), total TPH, PAH (USEPA 16 speciated) and mecoprop.

A. Plans and figures

A.1 Plan of all monitoring points

A.2 Engineering layout of all wells



NOTES:-
1. TIP CONTOURS SHOW EXISTING GROUND LEVELS
2. PROPOSED DRAINAGE CONNECTIONS NOT SHOWN. REFER TO DRAWING CW6109
3. EXACT LOCATIONS OF WELLS TO BE AGREED WITH THE ENGINEER
4. WELLS TO BE LOCATED TO AVOID AREAS OF TIPPING FOR ASBESTOS CONTAMINATED MATERIAL AND JAPANESE KNOTWEED INFESTED MATERIAL - SEE Dwg. No. CL6105
LEGEND
LEACHATE WELL (LW)
GAS WELL (GW)
OBSERVATION WELL (OW)
CARDIFF BAY RETAIL PARK- UNDER CONSTRUCTION
SLURRY CUT OFF WALL- AS INSTALLED
SLURRY CUT OFF WALL - AS INSTALLED
SLURRY CUT OFF WALL - AS INSTALLED
BURIED RIVER CHANNEL
EXISTING LEACHATE DRAIN TO BE CONNECTED INTO AUTO COLLECTION SYSTEM
WELL TO CONTROL LEVEL OF LEACHATE IN TIP ALONG BURIED RIVER CHANNEL
SITE BOUNDARY TO TIP RESTORATION CONTRACT
EXISTING LEACHATE DRAIN TO BE CONNECTED INTO OPS COLLECTION SYSTEM
DISPOSAL CELL
SITE BOUNDARY TO TIP RESTORATION CONTRACT
ELY FIELDS DEVELOPMENT
BURIED RIVER CHANNEL
WELL TO CONTROL LEVEL OF LEACHATE IN TIP ALONG BURIED RIVER CHANNEL
FERRY ROAD
Ely River (Afon Elai)
Rev. Date By Description
Drawing Status
FOR COMMENT
CARDIFF BAY
Job Title
FERRY ROAD
LICENCED TIP RESTORATION
CIVIL ENGINEERING WORKS
Drawing Title
LAYOUT OF LEACHATE,
GAS AND OBSERVATION
WELLS
ARUP
Ove Arup & Partners©
Scale 1:1000
Checked
Approved
Date
Job No.
4948046
Drawing No.
WSK125
Rev.

B. Monitoring point details

Information known about the monitoring points discussed in this report is summarised below.

B.1 Leachate

Location ID	Easting	Northing	Ground level (mAOD)	Comments
LW4	317593	173752	12.7	2.75m plain pipe, 9.10m slotted
LW14	317348	173840	20.2	4.75m plain pipe, 16.05m slotted
LW16	317317	173747	23.0	5.75m plain pipe, 18.25m slotted
LW18	317267	173659	20.9	4.75m plain pipe, 16.70m slotted
OW2	317579	173669	12.2	4.00m plain pipe, 7.85m slotted
OW3	317595	173722	9.9	4.00m plain pipe, 7.10m slotted
OW5	317585	173816	13.3	4.00m plain pipe, 9.95m slotted
OW6	317582	173843	15.4	4.00m plain pipe, 12.35m slotted
OW7	317565	173915	16.5	4.00m plain pipe, 13.35m slotted
OW9	317466	173994	18.6	4.00m plain pipe, 15.55m slotted
OW11	317414	173953	17.0	4.00m plain pipe, 13.30m slotted
OW12	317406	173929	18.7	4.00m plain pipe, 15.55m slotted
OW13	317387	173879	19.6	4.00m plain pipe, 16.25m slotted
OW14	317347	173810	21.1	4.00m plain pipe, 18.30m slotted
OW17	317281	173677	21.6	4.00m plain pipe, 16.88m slotted
OW18	317269	173596	19.6	4.00m plain pipe, 16.27m slotted
OW19	317214	173573	13.6	4.00m plain pipe, 8.50m slotted
Pumping Station B (Watkins Way)	317755	172908	Unknown	
Pumping Station C (D Drive)	317308	173425	Unknown	
Pumping Station D (Grangemoor)	317254	173875	Unknown	
Pumping Station T1	317591	173666	6.80	
Chamber 3	317235	173758	Unknown	
FR5	317632	173560	Unknown	Installation details unknown
W01	317426	173860	Unknown	Installation details unknown
W02	317469	173883	Unknown	Installation details unknown
W07	Unknown	Unknown	Unknown	Installation details unknown
W16	317459	173650	Unknown	Installation details unknown
W17	Unknown	Unknown	Unknown	Installation details unknown
W18	317429	173653	Unknown	Installation details unknown
W20	317377	173633	Unknown	Installation details unknown
W24	317323	173604	Unknown	Installation details unknown
W28	317434	173815	Unknown	Installation details unknown
W88	317482	173808	Unknown	Installation details unknown
Unknown A	317518	173793	Unknown	Installation details unknown

B.2 Groundwater

Location ID	Easting	Northing	Ground level (mAOD)	Comments
B&M Car Park (FR1)	317552	174039	Unknown	Installation details unknown

B.3 Surface water

Location ID	Easting	Northing	Comments
River sample Rail Bridge	317109	173923	Upstream sample
River Sample Mid A	317155	173637	Adjacent to landfill
River sample under Bypass	317251	173442	Downstream sample
River Sample – Outfall A	317224	173821	Concrete pipes
Outfall A – Ferry Court	318099	173302	Heavy metal outfall cover

C. Sampling results

C.1 Leachate

Ferry Road Landfill

LEACHATE MONITORING

		Date				05/05/2021	21/05/2021	30/06/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	10/09/2021	19/10/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	05/05/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021
Sample ID	Units	Acc	MRV	DWS	EQS	Chamber 3	Chamber 3	Chamber 3	FR5	FR5	FR5	FR5	FR5	FR5	LW14	LW14	LW14	LW14	LW14	LW16	LW16	LW18	LW18	LW18	LW18	LW4	LW4	LW4	LW4	LW4	OW 17	OW 17	OW 17	OW 17	OW 17	OW02	OW02	OW02	OW02	OW02	OW02
Ammonia	mg.l^{-1} as NH_4	A		0.5	0.38	0.03	0.07	0.03	115	124	116	126	115	80.1	243	116	66.6	85	15.4	235	228	251	321	129	87.9	15.4	78.5	27.3	32.3	14.8	484	1.3	494	503	65.7	70.1	2	30.1	38.2	45.4	35.9
Nitrate	mg.l^{-1} as NO_3	A		50	-	12.8	1.1	0.86	<0.3	1.7	<0.3	1.8	0.71	0.44	8.2	9.5	8.2	32	32.5	0.97	<0.3	<0.3	<0.3	20.1	33.3	2.9	<0.3	5.2	0.75	<0.3	<0.3	<0.3	2	0.71	37.4	<0.3	1.5	1.4	<0.3	0.62	1.9
Nitrite	mg.l^{-1} as NO_3	A		0.5	-	<0.003	<0.003	<0.003	0.15	0.11	<0.003	0.13	0.18	0.01	3.31	1.9	1.4	3.1	4.5	0.5	<0.003	0.17	45.7	4	2.2	0.03	0.013	0.036	0.01	<0.003	1	0.61	3.1	0.34	0.12	<0.003	0.02	<0.003	<0.003	<0.003	<0.003
Arsenic	µg.l^{-1}	S-A		10	25	2	1.6	1.5	3.5	2.1	1.7	1.5	2	2.2	3.2	5.2	40	4	6.6	2.3	1.4	0.92	0.39	1.2	1.1	0.49	0.56	0.53	0.26	0.32	4.3	2.8	2.1	3.5	0.3	1.2	0.95	0.96	1.8	1.3	0.42
Mercury	µg.l^{-1}	S-A	0.01	1	0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	<0.05	<0.05	<0.05	<0.05	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.14	<0.05	<0.05	<0.05
Barium	µg.l^{-1}	A		1000	-	74.1	95.9	92.3	170	316	375	380	384	301	368	339	316	371	238	651	490	461	523	599	442	307	413	449	620	373	508	542	531	881	586	816	114	660	707	848	994
Boron	µg.l^{-1}	A		1000	-	44.3	<6.5	<6.5	1,560	1,810	1,800	1,900	2,550	2,550	2,480	1,900	2,300	2,760	2,420	2,010	3,960	2,800	2,600	3,230	2,560	485	894	927	1,190	800	9,820	9,900	9,700	10,600	8,960	3,280	5.4	1,410	1,170	2,100	1,680
Cadmium	µg.l^{-1}	A	0.1	5	0.08*	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	1.1	<0.9	<0.9	<0.9	<0.9	<0.9
Chromium	µg.l^{-1}	A		50	4.7*	1.5	<1.0	<1.0	2.5	3.1	3.8	6.3	5.4	6.6	9.1	6.5	6.1	8.2	8.8	6.9	6.5	4.2	4.3	7.9	4.9	3.4	2.9	1.4	7.8	3.5	8.8	5.3	6.2	9	7.5	4.6	<1.0	1.2	<1.0	<1.0	2.7
Copper	µg.l^{-1}	A		2000	1* (MBAT)	3.8	3.3	2.2	2.2	13.2	<0.8	1.1	4.5	<0.8	15	10.6	18.5	14.9	22.4	9.1	<0.8	<0.8	8.7	11.7	12.1	5.9	<0.8	0.8	2.8	<0.8	4.2	3.5	5.6	3.4	18.2	2.1	1.4	<0.8	<0.8	<0.8	1.3
Iron	µg.l^{-1}	A		200	1000	11.4	20.8	137	231	230	377	380	118	279	367	130	48.8	78.8	24.5	2,560	388	254	73.8	56.1	28.8	217	96	304	166	132	7,900	938	797	3,730	72.4	116	12.9	697	201	51.1	6,390
Lead	µg.l^{-1}	A		10	1.2*	4.6	<4.1	<4.1	<4.1	<4.1	<4.1	4.4	<4.1	7.1	<4.1	6.9	<4.1	12.6	9	10.9	9.2	6.8	<4.1	19.9	<4.1	<4.1	<4.1	7.4	7.7	<4.1	<4.1	4.6	4.2	17.3	<4.1	4.9	<4.1	<4.1	<4.1	5.7	6.3
Manganese	µg.l^{-1}	A		50	123* (MBAT)	2.4	3.1	<1.0	30	375	236	377	181	177	234	72.6	45	81.8	56.3	268	838	651	343	294	327	1,980	1,500	1,400	1,740	1,380	1,160	592	581	666	561	993	13.3	1,920	1,400	1,400	1,700
Nickel	µg.l^{-1}	A		20	4* (MBAT)	6	4.5	2.6	2.5	2.3	<1.5	<1.5	<1.5	<1.5	12.6	11.3	12.4	13	12.6	17.2	2.6	7.7	11.4	21.5	12.4	<1.5	<1.5	<1.5	<1.5	<1.5	12.4	11.3	13.5	18.7	38.6	2.9	2	<1.5	<1.5	<1.5	<1.5
Zinc	µg.l^{-1}	A		5000	6.8	150	96.8	64.8	<1.1	8.3	2.7	<1.1	<1.1	<1.1	26.1	14.1	62.4	31.4	52.8	23.1	1.4	<1.1	28	54.7	41.4	11.5	32.4	9.4	7.5	<1.1	4.4	5.2	4.4	<1.1	347	<1.1	<1.1	1.5	<1.1	<1.1	<1.1
Potassium	mg.l^{-1}	A		12	-	22.4	22.5	22.7	85.1	80.3	76.9	95.2	87.7	76.1	197	191	224	194	192	153	120	110	148	121	130	12.9	14.5	19.7	20.7	14.1	170	169	258	224	203	41	5.4	18.9	17.4	31.3	21.3
Hexavalent Chromium	mg.l^{-1}	N		-	0.0006	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50
Free Cyanide	mg.l^{-1}	S-A		0.05	0.001	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Cyanide	mg.l^{-1}	S-A		0.05	0.001	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
pH	pH units	A				7.9	8.1	8.2	7.6	7.6	7.7	7.7	7.8	7.8	7.7	8	7.7	7.9	8	8	7.4	7.9	7.6	8	7.9	7.2	7.6	7.3	7.6	7.6	7.2	7.5	7.6	7.9	6.9	7.1	7.1	7	7.1	7	7.2
Chloride	mg.l^{-1}	A		250	-	14.5	10.7	12.5	2,620	2,420	2,250	2,500	2,412	2,430	332	353	383	398	399	355	252	199	205	214	215	337	488	915	1,188	697	755	953	1,020	935	930	162	6.9	74.7	62.4	112	101
TOC	mg.l^{-1}	A				26.5	38.9	31.6	175	170	165	125	112	125	36.6	42.8	45.7	41.1	27.5	52.5	51.1	28.5	70.3	70.4	60.5	35.8	37.8	31.2	33.4	22.1	46.7	41.2	47.9	46.7	40.8	208	57.2	60.7	70.6	32.9	35.6
Total Phenol	mg.l^{-1}	A			7.7	0.02	0.09	<0.01	0.19	0.17	0.09	0.11	0.13	0.33	0.8	0.55	0.29	0.77	0.15	0.21	0.54	0.24	0.43	0.81	0.72	0.15	0.28	0.11	0.17	0.62	0.52	0.34	0.27	0.45	0.44	0.12	0.07	0.05	0.06	0.08	0.13
Sulphate	mg.l^{-1}	A		250	-	160	204	176	6.7	10.4	7.7	16.8	20	54.1	10	22.5	36.8	29.6	35.3	4.7	7.5	4	9.6	36.8	55.1	13.6	13.8	29.7	16.4	18.2	10.1	7	14.8	7.1	39	3.1	4.1	3.9	1.6	0.8	<0.4
Mecoprop	µg.l^{-1}	A	0.04	10	18	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7	<0.1	2.6	<0.1	<0.1	<0.1	4.4	38.1	17.2	22.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TPH	mg.l^{-1}	N		0.01		<0.2	<0.2	<0.2	0.4	1	1.4	0.5	0.5	<0.2	<0.2	<0.2	0.6	<0.2	0.6	0.9	0.6	0.4	0.3	1	1.2	<0.2	0.2	0.5	<0.2	0.4	0.3	<0.2	0.5	<0.2	0.5	<0.2	<0.2	<0.2	<0.2	0.2	<0.2
Dimethylphthalate	µg.l^{-1}	S-N				<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Diethyl Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Bytul Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Butylbenzyl Phthalate	µg.l^{-1}	S-N		-	0.75	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bis(2-Ethylhexyl) Phthalate	µg.l^{-1}	S-N		8	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Octyl Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Naphthalene	µg.l^{-1}	A		-	2	<0.05	0.18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.21	<0.05	<0.05	<0.05	<0.05	<0.05	0.7	0.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.4	1.6	1.7	<0.05	<0.05	3.2	<0.05	<0.05	0.47	0.97	<0.05	<0.05	<0.05	<0.05	<0.05
4-nitrophenol	µg.l^{-1}	A				<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.50	<0.50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.50	<0.50	<0.05	<0.05	<0.05	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.5	<0.50	<0.50	<0.05	<0.05
2,3,4,6-tetrachlorophenol	µg.l^{-1}	A				<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.50	<0.50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.50	<0.50	<0.05	<0.05	<0.05	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.5	<0.50	<0.50	<0.05	<0.05
Fluorene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.5	3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg.l^{-1}	A		-	-	<0.05	0.61	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.51	<0.05	<0.05	<0.05	<0.05	0.98	<0.05	<0.05	0.08	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg.l^{-1}	A		-	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg.l^{-1}	A		0.038	0.0063	<0.05	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg.l^{-1}	A		-	-	<0.05	0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benza(a)anthracene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg.l^{-1}	A		0.01	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(123-cd)pyrene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenza(ah)anthracene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-chlorophenol	µg.l^{-1}	A	0.1	50	50	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
2-methylphenol	µg.l^{-1}	A		-	-	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
4-methylphenol	µg.l^{-1}	A		-	-	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
2 nitrophenol	µg.l^{-1}	A				<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
2,4-dimethylphenol	µg.l^{-1}	A		-	-	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.2	<0.50	<0.50	<0.50	2.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
2,4-dichlorophenol	µg.l^{-1}	A	0.1	-	0.42	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	4.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
2,6-dichlorophenol	µg.l^{-1}	A				<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
4-chloro,3-methylphenol	µg.l^{-1}	A	0.1	-	-	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	11.9	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
2,4,6-trichlorophenol	µg.l^{-1}	A		200	-	<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
2,4,5-trichlorophenol	µg.l^{-1}	A				<0.5	<0.5	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
Alpha-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Beta-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Gamma-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Delta-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor	µg.l^{-1}	N		0.03	1.00E-08	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Aldrin	µg.l^{-1}	N	0.003	0.03	0.00125	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor Epoxide	µg.l^{-1}	N		0.03	1.00E-08	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan	µg.l^{-1}	N	0.005	-	0.0005	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDE	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dieidrin	µg.l^{-1}	N	0.003	0.03	0.00125	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan-I	µg.l^{-1}	N	0.005			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDD	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endrin Aldehyde	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan Sulphate	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-O	µg.l^{-1}	S-N	0.05			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Phorate	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-S	µg.l^{-1}	S-N	0.05			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Disulfoton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fenthion	µg.l^{-1}	S-N	0.01	-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloronate	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prothiofos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fensulphothion	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Sulprofos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Azinphos-Methyl	µg.l^{-1}	S-N	0.001	-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Coumaphos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atraton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometon	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simazine	µg.l^{-1}	S-N	0.03	2	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atrazine	µg.l^{-1}	S-N	0.03	100	0.6	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Propazine	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbuthylazine	µg.l^{-1}	S-N		7	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Secbumeton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simetryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ametryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbutryn	µg.l^{-1}	S-N		-	0.0065	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ammoniacal N	mg.l^{-1} as N			0.39	0.3	0.0	0.1	0.0	88.5	95.4	89.2	96.9	88.5	61.61538462	186.9	89.2	51.2	65.4	11.84615385	180.8	175.3846154	193.1	246.9	99.2	67.61538462	11.8	60.4	21.0	24.8	11.38461538	372.3	1.0	380.0	386.9	50.53846154	53.9	1.5	23.2	29.4	34.9	27.6

Ferry Road Landfill

LEACHATE MONITORING

		Date				19/10/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	06/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021
Sample ID	Units	Acc	MRV	DWS	EQS	OW02	OW03	OW03	OW03	OW03	OW03	OW03	OW05	OW05	OW05	OW05	OW05	OW05	OW06	OW06	OW06	OW06	OW06	OW06	OW07	OW07	OW07	OW07	OW07	OW07	OW09	OW09	OW09	OW09	OW09	OW09	OW12	OW12	OW12	OW12	OW12
Ammonia	mg.l-1 as NH_4	A		0.5	0.38	40	6.4	5.5	180	251	262	164	43.8	47.6	41.2	60.5	69.7	45	98.4	84.3	92.9	198	257	223	0.17	0.52	201	198	216	311	0.1	269	226	302	338	227	368	329	383	341	274
Nitrate	mg.l-1 as NO_3	A		50	-	0.53	<0.3	<0.3	<0.3	0.44	0.66	1.3	<0.3	<0.3	<0.3	<0.3	2.4	7.2	<0.3	2.2	<0.3	<0.3	0.93	<0.3	6.1	7.7	35.9	305	341	17.1	5.1	<0.3	<0.3	0.88	<0.3	0.31	1.6	<0.3	2	2.6	<0.3
Nitrite	mg.l-1 as NO_3	A		0.5	-	<0.003	<0.003	<0.003	0.04	<0.003	0.49	0.48	<0.003	<0.003	<0.003	<0.003	2.4	0.19	<0.003	<0.003	<0.003	0.41	0.053	0.38	<0.003	<0.003	3	0.64	0.62	0.34	0.14	<0.003	0.63	<0.003	0.27	0.4	<0.003	0.046	<0.003	0.36	0.98
Arsenic	µg.l-1	S-A		10	25	0.74	0.38	0.89	2.1	0.96	0.86	0.83	0.63	3.3	3.7	1.9	1.3	1.6	0.93	1.4	2.1	1.9	1.8	0.79	0.56	0.59	1.5	1.6	1.6	0.7	0.34	2.5	3.9	3.6	2.7	1.1	3.8	4.6	3.3	1.8	0.34
Mercury	µg.l-1	S-A	0.01	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	<0.05	<0.05	<0.05	<0.05
Barium	µg.l-1	A		1000	-	922	290	179	774	700	784	448	491	452	505	607	676	467	421	440	469	552	561	527	42.5	58.2	504	418	439	386	41.9	564	653	468	510	438	400	517	450	648	465
Boron	µg.l-1	A		1000	-	2,420	75.8	<6.5	4,400	5,800	7,550	5,930	694	949	1,200	1,400	1,500	1,560	1,820	1,150	1,400	3,100	4,690	5,040	41	<6.5	2,600	2,700	4,010	5,140	<6.5	6,820	5,300	4,800	5,090	6,520	10,130	7,900	7,900	8,760	7,580
Cadmium	µg.l-1	A	0.1	5	0.08*	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	1	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9
Chromium	µg.l-1	A		50	4.7*	1.7	<1.0	<1.0	3.2	4.4	4.9	5.1	2.1	2.4	2.3	1.6	3.2	2.9	4.4	2.9	2.2	3	4.9	8	3.5	5.6	3.6	4.6	7.2	7.1	3	5.4	4.7	3.9	6.4	5.8	5.3	4.5	4.4	9.1	7.1
Copper	µg.l-1	A		2000	1* (MBAT)	2.7	1.4	3.6	<0.8	4.1	1.9	<0.8	4.4	5.7	<0.8	<0.8	4.1	5.7	2.3	6.1	<0.8	1	2.1	<0.8	1.9	2.5	<0.8	3.5	5.5	1.1	1.3	6.2	<0.8	<0.8	1.2	<0.8	5	<0.8	5.5	3.1	<0.8
Iron	µg.l-1	A		200	1000	666	151	200	474	303	1,540	157	80.3	170	194	101	32.9	55.9	215	190	154	339	973	5,430	8.2	167	300	48.2	147	86.3	10.7	448	140	251	1,180	99.6	537	683	642	4,740	1,430
Lead	µg.l-1	A		10	1.2*	11.7	<4.1	<4.1	<4.1	9.9	18.2	7.6	<4.1	<4.1	<4.1	6.5	26.8	4.6	<4.1	<4.1	<4.1	<4.1	15	7.8	5.1	<4.1	4.9	8.8	6.1	4.8	<4.1	4.5	4.4	<4.1	25.1	8.9	<4.1	<4.1	<4.1	10.6	<4.1
Manganese	µg.l-1	A		50	123* (MBAT)	1,320	64.2	264	1,160	1,100	1,330	1,040	1,190	2,730	1,700	1,600	1,610	1,150	986	2,300	1,300	779	790	549	2.8	6.7	1,100	626	677	470	2.5	972	669	551	585	515	520	414	419	499	428
Nickel	µg.l-1	A		20	4* (MBAT)	<1.5	2	<1.5	2.9	3.2	3.8	<1.5	5.7	4.6	4.5	2.6	5.1	7.9	4.2	2.4	2.9	3.4	7.4	3.5	1.5	<1.5	7.1	8.4	9.9	6.8	2.8	8.3	6.3	<1.5	7.7	13.8	8.3	7.1	10.6	14.6	16.6
Zinc	µg.l-1	A		5000	6.8	5	<1.1	4.1	<1.1	1.2	<1.1	2.7	7.4	6	<1.1	<1.1	<1.1	24.4	<1.1	4.4	<1.1	<1.1	3.1	<1.1	438	337	22.2	22.6	23.5	22.9	516	12.5	<1.1	<1.1	<1.1	12.5	5.5	9.8	17.7	<1.1	3.9
Potassium	mg.l-1	A		12	-	29.5	5.2	7.1	73	123	109	99.3	34.7	43.1	45	57.3	49.9	53.1	68.2	50.6	60.5	104	105	124	7.3	9	104	132	130	155	7	131	121	146	136	146	150	152	213	174	175
Hexavalent Chromium	mg.l-1	N		-	0.0006	<0.50	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.50	<0.50	<0.50
Free Cyanide	mg.l-1	S-A		0.05	0.001	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Cyanide	mg.l-1	S-A		0.05	0.001	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
pH	pH units	A				7.4	7.2	7.1	7.4	7.4	7.6	7.7	7.2	7.1	7.5	7.6	7.8	7.7	7.4	7.1	7.4	7.5	7.7	7.6	7.8	7.8	7.8	7.4	7.7	7.7	7.9	7.5	7.5	7.5	7.8	7.9	7.6	7.9	7.5	7.7	7.4
Chloride	mg.l-1	A		250	-	125	15	20.3	310	461	497	481	202	326	346	479	460	723	210	107	154	318	426	589	6.6	8.7	165	195	230	360	14.7	208	207	224	232	238	300	289	299	295	304
TOC	mg.l-1	A				61.7	88.4	30.6	30.6	68.5	60.8	40	174	87.6	26.7	25.9	33.4	28.9	232	186	75.4	27.6	25.4	51.6	9.2	34.5	28.7	36.6	38.4	42.9	10.8	12.4	75.7	51.2	47.8	74.6	57.8	61.1	59.6	61.4	50.7
Total Phenol	mg.l-1	A			7.7	0.19	0.07	0.02	0.53	0.25	0.3	0.59	0.02	0.08	0.09	0.22	0.17	0.23	0.2	0.14	0.13	0.21	0.31	0.36	0.03	<0.01	0.15	0.4	0.29	0.91	<0.01	0.27	0.21	0.09	0.28	0.82	0.3	0.28	0.32	0.31	0.71
Sulphate	mg.l-1	A		250	-	33.1	1.1	4.5	3.3	4.5	1.8	16.2	8.2	6	6.7	3.7	2	71	2.8	4.8	2.7	5.4	10.3	13.1	5.4	9.5	219	338	201	153	5	9.4	6.3	17.4	18.1	165	12.8	9.9	48.2	14.9	66.2
Mecoprop	µg.l-1	A	0.04	10	18	<0.1	<0.1	<0.1	3.5	8.2	14.5	24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7.4	<0.1	<0.1	28.8	<0.1	<0.1	9.8	<0.1	6.7	7.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	20.4	68.1	59.2
TPH	mg.l-1	N		0.01		<0.2	<0.2	<0.2	<0.2	0.3	<0.2	0.3	<0.2	<0.2	0.3	0.2	0.3	0.4	0.3	0.2	<0.2	0.2	0.2	0.5	<0.2	0.2	<0.2	0.6	<0.2	0.3	<0.2	0.4	<0.2	0.3	0.3	0.4	0.4	<0.2	<0.2	<0.2	1.5
Dimethylphthalate	µg.l-1	S-N				<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Diethyl Phthalate	µg.l-1	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Bytul Phthalate	µg.l-1	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Butylbenzyl Phthalate	µg.l-1	S-N		-	0.75	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bis(2-Ethylhexyl) Phthalate	µg.l-1	S-N		8	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Octyl Phthalate	µg.l-1	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Naphthalene	µg.l-1	A		-	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.7	<0.05	<0.05	<0.05	<0.05	<0.05	0.55	0.36
Acenaphthene	µg.l-1	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.2	<0.05	<0.05	<0.05	4.9	3.2	3.6	2.5
4-nitrophenol	µg.l-1	A				<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.50	<0.50	<0.05	<0.05	<0.05
2,3,4,6-tetrachlorophenol	µg.l-1	A				<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.50	<0.50	<0.05	<0.05	<0.05
Fluorene	µg.l-1	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.6	<0.05	<0.05	<0.05	0.71	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.9	<0.05	<0.05	1.9	3.6	1.2	2	1.1
Phenanthrene	µg.l-1	A		-	-	<0.05	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.2	<0.05	<0.05	<0.05	<0.05	<0.05	1.2	<0.05	<0.05	<0.05	0.19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.27	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.1	<0.05	<0.05	<0.05
Anthracene	µg.l-1	A		-	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.3	<0.05	<0.05	<0.05
Fluoranthene	µg.l-1	A		0.038	0.0063	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.64	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.8	0.8	0.89	0.4
Pyrene	µg.l-1	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.2	<0.05	0.86	<0.05
Benza(a)anthracene	µg.l-1	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg.l-1	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg.l-1	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg.l-1	A		0.01	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(123-cd)pyrene	µg.l-1	A		0.1	0.00017	<0.05	<0.05	2.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenza(ah)anthracene	µg.l-1	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	µg.l-1	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-chlorophenol	µg.l-1	A	0.1	50	50	<0.50	<0.5	<0.50	3	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-methylphenol	µg.l-1	A		-	-	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	9.7	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
4-methylphenol	µg.l-1	A		-	-	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	31	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	13.5	<0.50	<0.50	<0.50
2 nitrophenol	µg.l-1	A				<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-dimethylphenol	µg.l-1	A		-	-	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	2.4	<0.5	<0.50	<0.50	<0.50	<0.50	2.2	<0.50	<0.50	<0.50	<0.50	2.2
2,4-dichlorophenol	µg.l-1	A	0.1	-	0.42	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,6-dichlorophenol	µg.l-1	A				<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
4-chloro,3-methylphenol	µg.l-1	A	0.1	-	-	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	6.7	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	10.8	<0.50	<0.50	<0.50
2,4,6-trichlorophenol	µg.l-1	A		200	-	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,5-trichlorophenol	µg.l-1	A				2	<0.5	<0.50	<0.50	<0.50	<0.50	3.3	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	2.1	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2
Alpha-BHC	µg.l-1	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Beta-BHC	µg.l-1	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Gamma-BHC	µg.l-1	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Delta-BHC	µg.l-1	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor	µg.l-1	N		0.03	1.00E-08	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Aldrin	µg.l-1	N	0.003	0.03	0.00125	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor Epoxide	µg.l-1	N		0.03	1.00E-08	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan	µg.l-1	N	0.005	-	0.0005	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp -DDE	µg.l-1	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dieidrin	µg.l-1	N	0.003	0.03	0.00125	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan-I	µg.l-1	N	0.005			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp -DDD	µg.l-1	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endrin Aldehyde	µg.l-1	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan Sulphate	µg.l-1	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-O	µg.l-1	S-N	0.05			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Phorate	µg.l-1	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-S	µg.l-1	S-N	0.05			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Disulfoton	µg.l-1	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fenthion	µg.l-1	S-N	0.01	-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloronate	µg.l-1	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prothiofos	µg.l-1	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fensulphothion	µg.l-1	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Sulprofos	µg.l-1	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Azinphos-Methyl	µg.l-1	S-N	0.001	-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Coumaphos	µg.l-1	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atraton	µg.l-1	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometon	µg.l-1	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simazine	µg.l-1	S-N	0.03	2	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atrazine	µg.l-1	S-N	0.03	100	0.6	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Propazine	µg.l-1	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbuthylazine	µg.l-1	S-N		7	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Secbumeton	µg.l-1	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simetryn	µg.l-1	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ametryn	µg.l-1	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometryn	µg.l-1	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbutryn	µg.l-1	S-N		-	0.0065	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Ammoniacal N	mg.l-1 as N			0.39	0.3	30.76923077	4.9	4.2	138.5	193.1	201.5	126.1538462	33.7	36.6	31.7	46.5	53.6	34.61538462	75.7	64.8	71.5	152.3	197.7	171.5384615	0.1	0.4	154.6	152.3	166.2	239.2307692	0.1	206.9	173.8	232.3	260.0	174.6153846	283.1	253.1	294.6	262.3	210.7692308

Ferry Road Landfill

LEACHATE MONITORING

		Date				30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	06/05/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021
Sample ID	Units	Acc	MRV	DWS	EQS	OW13	OW13	OW13	OW13	OW13	OW14	OW14	OW14	OW14	OW14
Ammonia	mg.l^{-1} as NH_4	A		0.5	0.38	317	291	273	423	235	1.3	1.2	1.1	441	0.85
Nitrate	mg.l^{-1} as NO_3	A		50	-	1.6	<0.3	381	1	142	<0.3	<0.3	1.5	<0.3	<0.3
Nitrite	mg.l^{-1} as NO_3	A		0.5	-	1.36	1.2	2.5	0.03	3.1	0.97	0.28	<0.003	0.82	<0.003
Arsenic	µg.l^{-1}	S-A		10	25	2.6	2.9	1.5	2	1.5	3.9	4.3	6.9	7.5	6.3
Mercury	µg.l^{-1}	S-A	0.01	1	0.05	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	µg.l^{-1}	A		1000	-	489	333	548	573	272	361	267	383	487	445
Boron	µg.l^{-1}	A		1000	-	13,740	10,100	8,900	16,100	13,820	3,840	3,400	7,540	6,500	6,600
Cadmium	µg.l^{-1}	A	0.1	5	0.08*	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	0.9	<0.9	1
Chromium	µg.l^{-1}	A		50	4.7*	5.7	4.8	6	5.5	5	7.9	4.8	6.6	5.6	6.7
Copper	µg.l^{-1}	A		2000	1* (MBAT)	1.2	4.2	6.5	1.9	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Iron	µg.l^{-1}	A		200	1000	560	128	252	804	80.6	186	268	549	519	649
Lead	µg.l^{-1}	A		10	1.2*	<4.1	5.6	7.4	18.6	4.8	6.6	<4.1	<4.1	<4.1	6.4
Manganese	µg.l^{-1}	A		50	123* (MBAT)	615	128	624	482	321	324	274	685	459	543
Nickel	µg.l^{-1}	A		20	4* (MBAT)	7.4	7.1	13.4	7.1	15.6	7.2	6.3	7.8	6.4	7.5
Zinc	µg.l^{-1}	A		5000	6.8	7.8	12.3	8.4	<1.1	42	<1.1	<1.1	<1.1	<1.1	<1.1
Potassium	mg.l^{-1}	A		12	-	143	134	248	162	167	147	159	200	152	228
Hexavalent Chromium	mg.l^{-1}	N		-	0.0006	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.1	<0.50
Free Cyanide	mg.l^{-1}	S-A		0.05	0.001	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Cyanide	mg.l^{-1}	S-A		0.05	0.001	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
pH	pH units	A				7.6	8.1	7.7	7.7	7.7	7.4	7.4	7.3	7.4	7.3
Chloride	mg.l^{-1}	A		250	-	288	234	173	257	250	450	4.4	426	401	422
TOC	mg.l^{-1}	A				44.4	31.2	40.5	45.5	46.4	492	259	251	25.6	25.4
Total Phenol	mg.l^{-1}	A			7.7	0.32	0.31	0.21	0.25	0.34	0.24	0.39	0.4	0.33	0.08
Sulphate	mg.l^{-1}	A		250	-	9.6	14.3	14.9	16.4	120	4.8	7.1	11	6.6	8.5
Mecoprop	µg.l^{-1}	A	0.04	10	18	<0.1	31.8	10.8	<0.1	5.3	<0.1	<0.1	<0.1	<0.1	<0.1
TPH	mg.l^{-1}	N		0.01		0.2	<0.2	<0.2	<0.2	0.3	<0.2	0.2	0.6	<0.2	0.3
Dimethylphthalate	µg.l^{-1}	S-N				<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Diethyl Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Bytul Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Butylbenzyl Phthalate	µg.l^{-1}	S-N		-	0.75	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bis(2-Ethylhexyl) Phthalate	µg.l^{-1}	S-N		8	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Octyl Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Naphthalene	µg.l^{-1}	A		-	2	<0.05	<0.05	<0.05	<0.05	<0.05	2.7	<0.05	2	2	1
Acenaphthene	µg.l^{-1}	A		-	-	<0.05	5.3	<0.05	<0.05	<0.05	4.8	<0.05	<0.05	<0.05	5.3
4-nitrophenol	µg.l^{-1}	A				<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.5	<0.50	<0.50	<0.05
2,3,4,6-tetrachlorophenol	µg.l^{-1}	A				<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.5	<0.50	<0.50	<0.05
Fluorene	µg.l^{-1}	A		-	-	<0.05	3.7	<0.05	<0.05	<0.05	<0.05	<0.05	4.4	<0.05	3.1
Phenanthrene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	1.7	0.27	2.3	<0.05	2.3
Anthracene	µg.l^{-1}	A		-	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	0.62	<0.05	<0.05	<0.05	0.6
Fluoranthene	µg.l^{-1}	A		0.038	0.0063	<0.05	2.5	0.7	<0.05	0.17	1	0.62	<0.05	<0.05	0.9
Pyrene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.2	<0.05
Benza(a)anthracene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg.l^{-1}	A		0.01	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(123-cd)pyrene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenza(ah)anthracene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-chlorophenol	µg.l^{-1}	A	0.1	50	50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	3.6	<0.50
2-methylphenol	µg.l^{-1}	A		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
4-methylphenol	µg.l^{-1}	A		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
2 nitrophenol	µg.l^{-1}	A				<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
2,4-dimethylphenol	µg.l^{-1}	A		-	-	<0.50	<0.50	<0.50	<0.50	1.7	<0.5	<0.5	<0.50	<0.50	<0.50
2,4-dichlorophenol	µg.l^{-1}	A	0.1	-	0.42	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
2,6-dichlorophenol	µg.l^{-1}	A				<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
4-chloro,3-methylphenol	µg.l^{-1}	A	0.1	-	-	<0.50	9.1	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
2,4,6-trichlorophenol	µg.l^{-1}	A		200	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
2,4,5-trichlorophenol	µg.l^{-1}	A				<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50
Alpha-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Beta-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Gamma-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Delta-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor	µg.l^{-1}	N		0.03	1.00E-08	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Aldrin	µg.l^{-1}	N	0.003	0.03	0.00125	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor Epoxide	µg.l^{-1}	N		0.03	1.00E-08	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan	µg.l^{-1}	N	0.005	-	0.0005	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDE	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dieidrin	µg.l^{-1}	N	0.003	0.03	0.00125	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan-I	µg.l^{-1}	N	0.005			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDD	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endrin Aldehyde	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan Sulphate	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-O	µg.l^{-1}	S-N	0.05			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Phorate	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-S	µg.l^{-1}	S-N	0.05			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Disulfoton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fenthion	µg.l^{-1}	S-N	0.01	-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloronate	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prothiofos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fensulphothion	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Sulprofos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Azinphos-Methyl	µg.l^{-1}	S-N	0.001	-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Coumaphos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atraton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometon	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simazine	µg.l^{-1}	S-N	0.03	2	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atrazine	µg.l^{-1}	S-N	0.03	100	0.6	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Propazine	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbuthylazine	µg.l^{-1}	S-N		7	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Secbumeton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simetryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ametryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbutryn	µg.l^{-1}	S-N		-	0.0065	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ammoniacal N	mg.l^{-1} as N			0.39	0.3	243.8	223.8	210.0	325.4	180.7692308	1.0	0.9	0.8	339.2	0.7

Date	10/09/2021	19/10/2021	05/05/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021
Sample ID	OW14	OW14	OW18	OW18	OW18	OW18	OW18	OW18	OW18
Ammonia	531	405	0.88	0.04	337	351	375	439	235
Nitrate	1.5	<0.3	6	<0.3	<0.3	<0.3	12.3	5.8	5.3
Nitrite	0.72	1.42	<0.003	<0.003	<0.003	0.2	17.1	0.23	0.21
Arsenic	6.5	<0.20	0.84	0.79	1.2	2.2	1.5	1.2	1.1
Mercury	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	509	347	138	182	469	404	386	374	330
Boron	7,490	7,230	<6.5	48.3	1,960	2,500	2,000	1,980	1,800
Cadmium	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	0.9	<0.9	<0.9
Chromium	8.7	9.5	1.5	<1.0	8.2	4.9	5.3	6	4.3
Copper	3.2	<0.8	2.2	2.3	<0.8	<0.8	<0.8	2.8	<0.8
Iron	1,270	983	11.6	28.9	21,100	1,100	344	659	242
Lead	15.9	13.9	<4.1	<4.1	5.9	<4.1	7	11.4	4.2
Manganese	618	551	4.2	6.2	2,140	862	709	617	885
Nickel	9.6	8	1.8	1.9	8.5	17.5	15.1	20.3	32.7
Zinc	<1.1	<1.1	293	442	<1.1	<1.1	<1.1	7.4	6.1
Potassium	192	197	3.7	2.3	125	144	170	154	128
Hexavalent Chromium	<0.50	<0.50	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50
Free Cyanide	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Cyanide	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
pH	7.7	7.6	8	7.8	7.1	7.3	7.4	7.7	7.7
Chloride	410	415	15.7	15.4	193	236	234	252	195
TOC	30.6	111	35.4	47.1	16.7	206	20.1	21.1	123
Total Phenol	0.37	0.77	0.02	0.05	0.22	0.34	0.24	0.39	0.75
Sulphate	3.9	11.6	1.5	2.1	7.5	14.7	57.9	32	63.6
Mecoprop	20.1	14.6	<0.1	<0.1	<0.1	4.1	<0.1	<0.1	<0.1
TPH	0.4	0.3	<0.2	0.2	0.2	<0.2	0.2	<0.2	0.4
Dimethylphthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Diethyl Phthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Bytul Phthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Butylbenzyl Phthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bis(2-Ethylhexyl) Phthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Octyl Phthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Naphthalene	1.7	0.38	<0.05	<0.05	<0.05	<0.05	<0.05	0.41	<0.05
Acenaphthene	5.8	2.5	1.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4-nitrophenol	<0.05	<0.05	<0.5	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05
2,3,4,6-tetrachlorophenol	<0.05	<0.05	<0.5	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05
Fluorene	3.6	1.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	0.85	0.2	<0.05	0.16	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	0.17	<0.05	<0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	1.2	0.48	<0.05	0.61	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	1.2	<0.05	<0.05	0.24	<0.05	<0.05	<0.05	<0.05	<0.05
Benza(a)anthracene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(123-cd)pyrene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenza(ah)anthracene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-chlorophenol	<0.50	<0.50	<0.5	<0.5	<0.50	3.6	<0.50	<0.50	<0.50
2-methylphenol	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
4-methylphenol	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2 nitrophenol	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-dimethylphenol	<0.50	2.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-dichlorophenol	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,6-dichlorophenol	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
4-chloro,3-methylphenol	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,6-trichlorophenol	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,5-trichlorophenol	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
Alpha-BHC	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Beta-BHC	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Gamma-BHC	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Delta-BHC	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Aldrin	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor Epoxide	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDE	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dieidrin	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan-I	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDD	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endrin Aldehyde	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan Sulphate	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-O	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Phorate	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-S	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Disulfoton	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fenthion	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloronate	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prothiofos	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fensulphothion	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Sulprofos	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Azinphos-Methyl	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Coumaphos	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atraton	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometon	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simazine	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atrazine	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Propazine	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbuthylazine	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Secbumeton	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simetryn	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ametryn	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometryn	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbutryn	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ammoniacal N	408.5	311.5384615	0.7	0.0	259.2	270.0	288.5	337.7	180.769231

Date	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	21/05/2021	30/06/2021	28/07/2021
Sample ID	OW19	OW19	OW19	OW19	OW19	OW19	Pumping Station B	Pumping Station B	Pumping Station B
Ammonia	24.4	31.2	27.7	36	36.3	3.6	3.2	0.03	58.2
Nitrate	<0.3	<0.3	<0.3	0.71	1.2	150	3.8	13.4	<0.3
Nitrite	<0.003	<0.003	<0.003	<0.003	0.043	1.98	1.8	0.48	0.01
Arsenic	0.82	1.4	1	0.59	0.57	0.59	0.34	0.73	1.4
Mercury	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	59.5	75.3	78.1	51.8	83.8	59.6	393	404	472
Boron	368	<6.5	470	475	486	407	1,400	2,310	3,400
Cadmium	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9
Chromium	<1.0	1.9	5.2	<1.0	5.5	4.2	3.6	7.6	1.9
Copper	1.5	1.8	<0.8	1.1	3.9	3.5	2.6	2.2	<0.8
Iron	27	274	58.2	84.4	33.9	21.5	20.9	195	141
Lead	<4.1	<4.1	<4.1	6	11.9	14.7	<4.1	<4.1	<4.1
Manganese	6.4	260	136	10.6	108	20.1	23	27.2	1,260
Nickel	2.5	<1.5	<1.5	<1.5	<1.5	<1.5	3.7	2.5	3
Zinc	<1.1	5	<1.1	<1.1	<1.1	2.9	111	102	5.4
Potassium	19.2	19.8	20.2	21.9	20	20	25.3	22.7	39.4
Hexavalent Chromium	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1
Free Cyanide	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Cyanide	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
pH	7.9	7.9	8	8	7.9	7.1	7.7	7.7	7.1
Chloride	86.6	85.3	78.9	97.1	91.4	89	69.4	79.5	162
TOC	68.1	87.4	80.6	77.4	75.7	76.4	58	64.5	70.5
Total Phenol	0.01	<0.01	0.01	0.05	0.03	0.01	0.08	0.01	0.23
Sulphate	40.1	35.4	29.8	45.9	29	43.2	12	15.9	11.3
Mecoprop	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.6	<0.1	<0.1
TPH	<0.2	0.6	<0.2	<0.2	0.3	<0.2	<0.2	0.4	<0.2
Dimethylphthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Diethyl Phthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Bytul Phthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Butylbenzyl Phthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bis(2-Ethylhexyl) Phthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Octyl Phthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Naphthalene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.3
4-nitrophenol	<0.5	<0.50	<0.05	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50
2,3,4,6-tetrachlorophenol	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50
Fluorene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.9
Phenanthrene	0.18	<0.05	<0.05	<0.05	<0.05	<0.05	0.16	1.6	1.7
Anthracene	0.19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.8
Fluoranthene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benza(a)anthracene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	<0.05	<0.05	<0.05	1.4	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(123-cd)pyrene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenza(ah)anthracene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-chlorophenol	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50
2-methylphenol	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50
4-methylphenol	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50
2 nitrophenol	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50
2,4-dimethylphenol	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50
2,4-dichlorophenol	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50
2,6-dichlorophenol	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50
4-chloro,3-methylphenol	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50
2,4,6-trichlorophenol	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50
2,4,5-trichlorophenol	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50
Alpha-BHC	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Beta-BHC	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Gamma-BHC	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Delta-BHC	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Aldrin	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor Epoxide	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDE	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dieidrin	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan-I	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDD	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endrin Aldehyde	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan Sulphate	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-O	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Phorate	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-S	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Disulfoton	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fenthion	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloronate	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prothiofos	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fensulphothion	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Sulprofos	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Azinphos-Methyl	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Coumaphos	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atraton	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometon	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simazine	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atrazine	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Propazine	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbuthylazine	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Secbumeton	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simetryn	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ametryn	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometryn	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbutryn	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ammoniacal N	18.8	24.0	21.3	27.7	27.9	2.76923077	2.5	0.0	44.8

Date	20/08/2021	10/09/2021	19/10/2021	05/05/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021
Sample ID	Pumping Station B	Pumping Station B	Pumping Station B	Pumping Station C	Pumping Station C	Pumping Station C	Pumping Station C	Pumping Station C	Pumping Station C
Ammonia	65.1	53.8	29.2	117	73	170	297	154	112
Nitrate	<0.3	24.2	99	13.3	1.8	5	3	7.2	42.1
Nitrite	0.007	3.2	8.47	4.4	0.81	1.32	0.75	1.12	67.2
Arsenic	0.43	0.61	0.53	0.69	<0.20	1.4	1.2	0.4	0.85
Mercury	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	<0.05	<0.05	<0.05
Barium	478	499	424	299	338	335	387	388	444
Boron	3,400	3,620	3,450	8,510	2,530	6,800	4,500	5,200	5,380
Cadmium	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9
Chromium	1.6	3.2	1.6	4.9	8.6	9.2	8.9	5.1	6
Copper	<0.8	3.3	2.8	2.1	3	2.3	<0.8	2.2	3.8
Iron	44.1	16.5	6.9	84.5	36.1	208	87.4	42.5	61.2
Lead	7.8	29.7	8.8	5.8	<4.1	<4.1	6.1	4.8	14.1
Manganese	1,300	1,260	770	379	378	243	202	106	237
Nickel	1.6	5.6	<1.5	4.3	4.4	4.5	4.2	3.5	4.2
Zinc	91.5	58.9	28.1	4	26.8	4.8	<1.1	<1.1	<1.1
Potassium	46.5	41.2	40.7	71.2	55.5	91.3	92.6	96.2	91.6
Hexavalent Chromium	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50
Free Cyanide	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Cyanide	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
pH	7	7.4	7.7	7.4	7.7	7.7	7.8	7.8	7.6
Chloride	175	167	176	906	927	1,550	1,470	1,420	1,483
TOC	41.4	39.4	126	229	86	111	106	70.6	86.7
Total Phenol	0.08	0.11	0.14	0.18	0.42	0.2	0.15	<0.01	0.09
Sulphate	13.5	9	13.1	28.6	18.8	7.7	7.5	14.4	10.8
Mecoprop	13.1	<0.1	2.5	<0.1	1.5	<0.1	<0.1	<0.1	<0.1
TPH	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	0.8	0.5	<0.2
Dimethylphthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Diethyl Phthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Bytul Phthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Butylbenzyl Phthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bis(2-Ethylhexyl) Phthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Octyl Phthalate	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Naphthalene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	1.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4-nitrophenol	<0.05	<0.05	<0.05	<0.5	<0.5	<0.50	<0.50	<0.05	<0.05
2,3,4,6-tetrachlorophenol	<0.05	<0.05	<0.05	<0.5	<0.5	<0.50	<0.50	<0.05	<0.05
Fluorene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benza(a)anthracene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(123-cd)pyrene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenza(ah)anthracene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-chlorophenol	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
2-methylphenol	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
4-methylphenol	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
2 nitrophenol	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
2,4-dimethylphenol	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
2,4-dichlorophenol	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
2,6-dichlorophenol	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
4-chloro,3-methylphenol	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
2,4,6-trichlorophenol	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
2,4,5-trichlorophenol	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
Alpha-BHC	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Beta-BHC	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Gamma-BHC	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Delta-BHC	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Aldrin	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor Epoxide	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDE	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dieidrin	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan-I	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDD	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endrin Aldehyde	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan Sulphate	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-O	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Phorate	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-S	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Disulfoton	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fenthion	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloronate	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prothiofos	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fensulphothion	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Sulprofos	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Azinphos-Methyl	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Coumaphos	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atraton	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometon	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simazine	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atrazine	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Propazine	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbuthylazine	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Secbumeton	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simetryn	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ametryn	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometryn	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbutryn	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ammoniacal N	50.1	41.4	22.46153846	90.0	56.2	130.8	228.5	118.5	86.2

Ferry Road Landfill

LEACHATE MONITORING

		Date				19/10/2021	05/05/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	30/06/2021
Sample ID	Units	Acc	MRV	DWS	EQS	Pumping Station C	Pumping Station D	Pumping Station D	Pumping Station D	Pumping Station D	Pumping Station D	Pumping Station D	Pumping Station D	Pumping Station T1	Pumping Station T1	Pumping Station T1	Pumping Station T1	Pumping Station T1	Pumping Station T1	Unknown A	Unknown A	Unknown A	Unknown A	Unknown A	Unknown A	W01	W01	W01	W01	W01	W01	W02	W02	W02	W02	W02	W02	W07	W07	W07	W07	W07	W16
Ammonia	mg.l^{-1} as NH_4	A		0.5	0.38	82.9	367	184	355	400	332	283	206	62.8	205	149	190	198	146	253	233	203	263	327	274	21.3	77.5	75.6	83.9	98.6	66.4	384	242	206	236	260	189	56.1	29.5	21.8	1	6.6	192
Nitrate	mg.l^{-1} as NO_3	A		50	-	22.1	5.4	<0.3	8.6	24	0.97	31.8	6.4	<0.3	4.2	<0.3	1.3	1.8	2.6	<0.3	0.88	<0.3	23.4	1	<0.3	<0.3	0.57	<0.3	1.5	2.3	<0.3	<0.3	0.31	<0.3	5.9	<0.3	<0.3	4.4	<0.3	34.4	95.9	3.4	10.6
Nitrite	mg.l^{-1} as NO_3	A		0.5	-	3.01	0.72	0.046	0.42	2.1	0.099	46.3	0.89	0.04	0.066	0.007	<0.003	0.026	0.79	0.13	0.22	<0.003	7.3	0.62	0.7	0.04	<0.003	0.12	0.083	<0.003	<0.003	0.32	<0.003	0.11	52.7	0.5	0.49	0.007	<0.003	2.3	0.04	0.31	0.076
Arsenic	µg.l^{-1}	S-A		10	25	0.99	2.6	11	2.5	1.6	1.8	1.5	3.3	0.61	1.5	4.8	1.9	1.3	1.4	1.7	3.7	1.8	2.6	3.9	<0.20	1	1.7	1.4	1.6	0.85	2.4	1.1	1.9	2	1.5	1.7	4	2	2.9	1.2	1.3	4.8	0.86
Mercury	µg.l^{-1}	S-A	0.01	1	0.05	<0.05	<0.05	<0.05	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	<0.05	<0.05	<0.05	<0.05	0.17
Barium	µg.l^{-1}	A		1000	-	376	45.7	837	285	310	396	434	586	417	483	565	611	695	550	684	706	775	689	987	738	293	361	416	464	500	58.6	320	437	556	479	658	531	1,350	1,400	1,200	1,420	306	465
Boron	µg.l^{-1}	A		1000	-	4,130	7,390	3,870	9,180	5,500	6,600	6,330	5,490	1,780	6,310	4,300	4,900	6,370	5,270	3,100	4,740	4,700	4,200	9,940	10,960	633	656	1,000	1,100	1,240	1,040	3,110	4,300	3,300	3,500	4,520	4,330	2,640	2,500	2,500	2,940	3,270	1,960
Cadmium	µg.l^{-1}	A	0.1	5	0.08*	<0.9	1.3	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	1	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	1	<0.9	<0.9	<0.9	<0.9	<0.9
Chromium	µg.l^{-1}	A		50	4.7*	4.4	8.6	4.2	5.5	4.2	5.1	5.6	8.1	2.2	3.5	3.1	2.2	5.3	4.2	5.2	3.9	3.6	3.5	9.1	12.4	2.7	2.7	2	2.2	3.6	4.2	5.5	5.3	3.9	3.7	6.2	6.9	1.8	1.2	<1.0	1.8	1.1	3.2
Copper	µg.l^{-1}	A		2000	1* (MBAT)	4.5	3.4	2	<0.8	<0.8	0.9	2.6	1.5	2.2	6.8	<0.8	1.1	3.3	<0.8	1.3	6.8	<0.8	<0.8	8.4	<0.8	40	5.3	1.6	<0.8	2.8	<0.8	0.8	1.2	<0.8	<0.8	1.7	<0.8	1.6	0.9	10.4	16.1	3.8	5.6
Iron	µg.l^{-1}	A		200	1000	27.6	192	129	576	603	625	905	2,310	94.1	316	612	279	1,330	342	126	328	246	164	1,150	2,110	144	164	44.5	298	186	6,060	94.8	306	113	66.4	666	2,390	10,030	69.9	13.2	25.2	23.1	411
Lead	µg.l^{-1}	A		10	1.2*	7.8	<4.1	<4.1	<4.1	<4.1	6.5	12	10.3	<4.1	<4.1	5.9	6.8	11.4	8	<4.1	<4.1	5.4	<4.1	21.8	<4.1	7.4	<4.1	<4.1	<4.1	11	7.4	<4.1	<4.1	<4.1	4.2	27.2	9.4	<4.1	4.1	4.3	7	7	<4.1
Manganese	µg.l^{-1}	A		50	123* (MBAT)	192	80.7	238	969	275	529	447	115	723	1,230	637	667	822	573	585	1,120	737	410	792	1,080	1,970	3,550	2,400	2,600	2,980	6,250	479	1,440	897	609	1,020	592	2,230	1,600	682	109	358	1,770
Nickel	µg.l^{-1}	A		20	4* (MBAT)	<1.5	11.6	7.9	9	8.3	9.2	9.3	6.7	4.1	3.6	3.7	2.2	2.6	<1.5	7.4	5.8	5	6	12.3	18.7	10.6	1.9	<1.5	2.4	<1.5	<1.5	4.1	2.7	2.8	2.4	5.1	5.2	<1.5	<1.5	<1.5	<1.5	<1.5	2.4
Zinc	µg.l^{-1}	A		5000	6.8	8.4	6.7	<1.1	90.8	102	21.7	34.7	88.1	1.7	4.6	2	<1.1	<1.1	5.6	20.1	5.5	12.9	9.1	7.8	<1.1	16.2	5.9	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	1.2	4.2	<1.1	22.4	4.4
Potassium	mg.l^{-1}	A		12	-	65.2	156	101	119	128	166	150	124	40	87.6	94.2	116	105	84.2	122	101	108	131	158	180	21	36.6	37.6	48	43.2	47.2	94.4	74.5	73.8	99.4	88.4	90.1	25.2	25.9	28.3	27.1	17.5	44.9
Hexavalent Chromium	mg.l^{-1}	N		-	0.0006	<0.50	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1
Free Cyanide	mg.l^{-1}	S-A		0.05	0.001	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Cyanide	mg.l^{-1}	S-A		0.05	0.001	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
pH	pH units	A				8	8	7.2	7.2	7.6	7.3	7.5	8	7.4	7.5	7.6	7.5	7.6	7.8	7.9	7.6	7.8	7.7	7.9	7.7	7.1	7	7.2	7.6	7.5	7.2	7.5	7.5	7.6	7.8	7.8	7.7	7	7.6	7.4	7.7	7.7	7.3
Chloride	mg.l^{-1}	A		250	-	1,460	454	197	385	333	385	377	319	723	1,490	1,700	1,770	1,826	2,060	270	345	346	359	454	602	54.2	84.3	102	124	106	139	208	168	202	207	230	254	40.8	44.1	46.6	47	49.8	148
TOC	mg.l^{-1}	A				59.4	391	111	95.4	87.5	85.7	80.1	35.1	100	111	157	167	135	122	74.8	86.4	65.4	67.4	60.5	60.5	80.7	46.7	50.7	60.8	65.4	60.2	148	106	78.5	37.6	30.5	36.4	30.4	30.6	60.1	58.4	62.3	85.6
Total Phenol	mg.l^{-1}	A			7.7	0.69	0.19	0.24	0.3	0.2	0.29	0.27	0.75	0.14	0.2	0.2	0.25	0.24	1.4	0.36	0.33	0.57	0.15	0.48	0.93	0.1	0.26	0.29	0.34	0.18	<0.01	0.32	0.21	0.11	0.18	0.45	0.74	0.16	0.11	0.06	0.11	0.24	0.5
Sulphate	mg.l^{-1}	A		250	-	33.5	11	40.4	22.5	13.4	43.5	24	22.2	3.7	6	3.2	4.7	2.2	8.9	9.6	6.9	3.9	6.8	17.1	212	6.9	4.4	2.6	9.9	2	1,520	0.8	4.9	2.3	3.1	25.5	96.3	3.2	1.4	5.9	5.1	148	7.4
Mecoprop	µg.l^{-1}	A	0.04	10	18	22.4	6	4.8	<0.1	<0.1	34	<0.1	<0.1	<0.1	3.3	24.9	<0.1	38.2	27.5	<0.1	<0.1	<0.1	<0.1	<0.1	25	2.6	1.5	<0.1	<0.1	<0.1	10.2	<0.1	2	<0.1	<0.1	<0.1	13.9	1	7.8	<0.1	<0.1	9.9	1.6
TPH	mg.l^{-1}	N		0.01		<0.2	<0.2	0.2	0.2	0.4	0.3	<0.2	0.4	1.6	3	<0.2	0.3	<0.2	0.3	0.3	3.2	<0.2	0.2	<0.2	0.7	1.6	1.6	0.3	0.3	0.5	0.2	1.1	0.3	<0.2	<0.2	3.7	0.4	<0.2	<0.2	0.5	<0.2	<0.2	<0.2
Dimethylphthalate	µg.l^{-1}	S-N				<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Diethyl Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Bytul Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Butylbenzyl Phthalate	µg.l^{-1}	S-N		-	0.75	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bis(2-Ethylhexyl) Phthalate	µg.l^{-1}	S-N		8	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Octyl Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Naphthalene	µg.l^{-1}	A		-	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.24	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.3	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.7	3.9	2.5	2.4	<0.05	<0.05	<0.05	<0.05	<0.05	0.23	<0.05	<0.05	<0.05	<0.05	1.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4-nitrophenol	µg.l^{-1}	A				<0.05	<0.5	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.50	<0.50	<0.05	<0.05	<0.05	<0.50
2,3,4,6-tetrachlorophenol	µg.l^{-1}	A				<0.05	<0.5	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.50	<0.50	<0.05	<0.05	<0.05	<0.50
Fluorene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	1.8	<0.05	0.9	<0.05	<0.05	<0.05	1.6	3.1	1.3	1.7	0.58	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	0.99	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	5.8	<0.05	<0.05	<0.05	1.1
Anthracene	µg.l^{-1}	A		-	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.7	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg.l^{-1}	A		0.038	0.0063	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.4	<0.05	2.4	0.7	0.87	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	4.4	<0.05	<0.05	<0.05	<0.05
Pyrene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3	<0.05	0.87	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benza(a)anthracene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg.l^{-1}	A		0.01	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(123-cd)pyrene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenza(ah)anthracene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-chlorophenol	µg.l^{-1}	A	0.1	50	50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	3.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-methylphenol	µg.l^{-1}	A		-	-	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	4.3	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
4-methylphenol	µg.l^{-1}	A		-	-	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2 nitrophenol	µg.l^{-1}	A				<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-dimethylphenol	µg.l^{-1}	A		-	-	1.3	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	1.3	<0.5	<0.50	<0.50	<0.50	<0.50	1.6	<0.5	<0.50	<0.50	<0.50	<0.50	2.1	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-dichlorophenol	µg.l^{-1}	A	0.1	-	0.42	<0.50	<0.5	<0.5	<0.50	4.4	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,6-dichlorophenol	µg.l^{-1}	A				<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
4-chloro,3-methylphenol	µg.l^{-1}	A	0.1	-	-	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,6-trichlorophenol	µg.l^{-1}	A		200	-	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,5-trichlorophenol	µg.l^{-1}	A				<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	2	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Alpha-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Beta-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Gamma-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Delta-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor	µg.l^{-1}	N		0.03	1.00E-08	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Aldrin	µg.l^{-1}	N	0.003	0.03	0.00125	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor Epoxide	µg.l^{-1}	N		0.03	1.00E-08	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan	µg.l^{-1}	N	0.005	-	0.0005	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDE	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dieldrin	µg.l^{-1}	N	0.003	0.03	0.00125	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan-I	µg.l^{-1}	N	0.005			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDD	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endrin Aldehyde	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan Sulphate	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-O	µg.l^{-1}	S-N	0.05			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Phorate	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-S	µg.l^{-1}	S-N	0.05			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Disulfoton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fenthion	µg.l^{-1}	S-N	0.01	-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloronate	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prothiofos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fensulphothion	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Sulprofos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Azinphos-Methyl	µg.l^{-1}	S-N	0.001	-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Coumaphos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atraton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometon	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simazine	µg.l^{-1}	S-N	0.03	2	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atrazine	µg.l^{-1}	S-N	0.03	100	0.6	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Propazine	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbuthylazine	µg.l^{-1}	S-N		7	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Secbumeton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simetryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ametryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbutryn	µg.l^{-1}	S-N		-	0.0065	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Ammoniacal N	mg.l^{-1} as N			0.39	0.3	63.76923077	282.3	141.5	273.1	307.7	255.4	217.7	158.4615385	48.3	157.7	114.6	146.2	152.3	112.3076923	194.6	179.2	156.2	202.3	251.5	210.7692308	16.4	59.6	58.2	64.5	75.8	51.07692308	295.4	186.2	158.5	181.5	200.0	145.3846154	43.2	22.7	16.8	0.8	5.076923077	147.7

Ferry Road Landfill

LEACHATE MONITORING

		Date				28/07/2021	20/08/2021	10/09/2021	19/10/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021
Sample ID	Units	Acc	MRV	DWS	EQS	W16	W16	W16	W16	W17	W17	W17	W17	W18	W18	W18	W18	W18	W20	W20	W20	W20	W20	W24	W24	W24	W24	W28	W28	W28	W28	W28	W28	W88	W88	W88	W88	W88	W88
Ammonia	mg.l^{-1} as NH_4	A		0.5	0.38	120	145	123	14.8	205	239	297	205	221	131	166	174	126	218	165	191	264	200	278	308	378	239	23.2	90.2	124	100	116	8.4	120	123	119	163	248	153
Nitrate	mg.l^{-1} as NO_3	A		50	-	0.62	<0.3	128	11.7	<0.3	4.2	1.1	0.49	<0.3	<0.3	8.2	1.5	1.7	0.49	<0.3	<0.3	<0.3	2.2	<0.3	<0.3	1.1	3.8	<0.3	1.9	<0.3	1.8	2.1	7.7	<0.3	1.5	<0.3	0.93	2	1
Nitrite	mg.l^{-1} as NO_2	A		0.5	-	1	36.9	3.2	42.2	0.12	0.42	0.29	0.17	<0.003	<0.003	11.7	0.63	0.026	0.56	0.47	29.7	0.47	0.013	0.32	0.2	0.19	0.23	0.023	0.03	<0.003	0.26	0.79	0.17	0.28	0.003	0.35	<0.003	0.026	0.34
Arsenic	µg.l^{-1}	S-A		10	25	0.61	0.23	0.47	0.42	2.1	1.3	1.7	1.5	1.4	1.4	<0.20	0.61	0.57	2	2.2	1.4	1.6	0.51	2.4	1.2	1.9	1.4	0.37	1.4	3.8	3.9	3.4	1.1	<0.20	1.6	0.92	0.97	0.7	1.2
Mercury	µg.l^{-1}	S-A	0.01	1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.17	<0.05	<0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	µg.l^{-1}	A		1000	-	510	463	525	486	571	609	611	489	1,070	1,100	896	1,350	1,070	446	574	476	829	663	680	659	717	497	320	451	704	134	239	111	417	550	596	638	763	554
Boron	µg.l^{-1}	A		1000	-	1,900	2,100	2,270	1,090	5,000	6,100	8,010	7,400	2,500	2,000	2,100	2,000	1,670	7,320	5,600	5,600	7,580	8,240	4,600	4,600	5,670	7,400	292	1,230	1,600	1,800	2,350	427	1,260	1,190	1,200	1,300	1,620	1,520
Cadmium	µg.l^{-1}	A	0.1	5	0.08*	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	1.1	<0.9	<0.9	<0.9	<0.9
Chromium	µg.l^{-1}	A		50	4.7*	2.1	2	4	2.2	3.4	4.1	5.9	4.8	4.4	2.6	2.8	5.1	3.5	4.2	2.9	3.7	5.9	5.9	5.7	6.1	7.8	4.4	2.4	3.4	2.7	3.8	7.6	2.7	3.5	3	2.4	2.6	4.5	3.4
Copper	µg.l^{-1}	A		2000	1* (MBAT)	<0.8	<0.8	3.1	0.9	<0.8	1	2.8	<0.8	1.2	<0.8	2.2	7.3	<0.8	5.7	<0.8	0.8	6.6	3.7	<0.8	2.4	2.7	4.3	2.1	1.3	<0.8	<0.8	5.2	5.3	8.2	6.8	2.3	1.1	5	3.3
Iron	µg.l^{-1}	A		200	1000	258	54.2	35.2	19	497	321	417	485	945	560	54.6	179	459	445	848	201	652	795	404	122	177	383	319	324	193	208	8,700	2,200	307	1,630	41.1	89.7	315	140
Lead	µg.l^{-1}	A		10	1.2*	<4.1	7.2	<4.1	<4.1	4.3	<4.1	9.5	4.2	<4.1	4.6	<4.1	<4.1	9.9	<4.1	7.2	<4.1	23.6	14.4	4.8	<4.1	18.2	<4.1	<4.1	<4.1	<4.1	<4.1	<4.1	13	<4.1	<4.1	7	9.7	<4.1	8.9
Manganese	µg.l^{-1}	A		50	123* (MBAT)	951	656	497	1,210	404	449	380	277	1,980	1,100	324	1,150	933	604	632	470	860	831	889	733	859	282	3,130	4,820	1,400	4,300	4,130	658	1,040	2,620	1,700	1,700	2,100	1,630
Nickel	µg.l^{-1}	A		20	4* (MBAT)	2.4	2.6	2.1	<1.5	4.8	3.7	6.6	3.4	3.7	3.2	4.2	3	<1.5	5.6	4.6	5.1	8.6	8.3	5	6	6.3	5.4	5.1	1.9	9.7	14.6	11.2	6.7	6.8	3.5	2.6	<1.5	2.6	<1.5
Zinc	µg.l^{-1}	A		5000	6.8	<1.1	<1.1	3	21.7	26.7	40	<1.1	5.1	<1.1	7	3.5	<1.1	<1.1	3.2	2.1	2.5	5.9	6	1.8	10	<1.1	9	<1.1	<1.1	3.2	<1.1	5.2	4.7	18.6	15.2	5.1	5.9	<1.1	4.8
Potassium	mg.l^{-1}	A		12	-	46.2	54.4	50.5	20.7	96.2	151	138	141	64.3	56.6	75.1	62.5	57.9	110	90.4	137	130	133	133	163	142	138	13.1	36.3	53.3	63.3	63	14.8	61.7	56.4	56.6	69.6	69.9	65.6
Hexavalent Chromium	mg.l^{-1}	N		-	0.0006	<0.1	<0.50	<0.50	<0.50	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50
Free Cyanide	mg.l^{-1}	S-A		0.05	0.001	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Cyanide	mg.l^{-1}	S-A		0.05	0.001	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
pH	pH units	A				7.8	7.4	7.8	7.8	7.8	7.4	7.8	7.8	7.2	7.9	7.6	7.8	7.6	7.4	7.8	7.6	7.7	7.7	7.7	7.7	7.9	7.5	7	7.3	7.7	7.5	7.5	7.4	7.2	7.2	7.4	7.7	7.6	7.3
Chloride	mg.l^{-1}	A		250	-	140	151	151	1,150	756	835	927	961	173	162	171	165	170	468	442	450	576	602	295	313	323	929	20.2	74.5	111	114	130	35.4	137	114	146	146	163	162
TOC	mg.l^{-1}	A				76.5	72.6	76.4	78.9	36.7	37.5	38.4	35.9	356	175	124	112	120	210	106	107	96.8	90.7	58.4	40.6	41.7	40.7	42.2	57.4	65.7	57.6	52.7	41.1	246	216	200	198	148	110
Total Phenol	mg.l^{-1}	A			7.7	0.12	0.62	0.86	0.54	0.38	0.6	0.29	0.74	0.28	0.42	0.31	0.19	0.86	0.39	0.79	0.2	1	0.29	0.4	0.7	0.38	0.64	0.21	0.7	0.15	0.48	0.29	0.74	0.21	0.29	0.23	0.26	0.21	0.54
Sulphate	mg.l^{-1}	A		250	-	8.9	20	13.9	23	2.9	22.8	4.7	9	5.5	3.1	7.5	0.6	5	6.6	3.2	11.8	5.9	32.2	5.2	9.5	7.1	9.7	5.3	4.2	48.7	872	480	162	6.7	6.1	3.5	4	0.7	14.2
Mecoprop	µg.l^{-1}	A	0.04	10	18	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	9.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	102	<0.1	<0.1	<0.1	<0.1
TPH	mg.l^{-1}	N		0.01		<0.2	0.2	<0.2	<0.2	0.4	0.4	0.5	0.3	0.2	1.2	0.3	<0.2	0.3	2.1	0.3	0.2	3.8	0.3	<0.2	0.2	0.2	0.3	0.6	0.2	<0.2	0.3	<0.2	0.6	13.3	17.8	4	0.3	<0.2	1.7
Dimethylphthalate	µg.l^{-1}	S-N				<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Diethyl Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Bytul Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Butylbenzyl Phthalate	µg.l^{-1}	S-N		-	0.75	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bis(2-Ethylhexyl) Phthalate	µg.l^{-1}	S-N		8	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Octyl Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Naphthalene	µg.l^{-1}	A		-	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.4	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4-nitrophenol	µg.l^{-1}	A				<0.50	<0.05	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.50	<0.50	<0.05	<0.05	<0.05	<0.50	<0.50	<0.05	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05
2,3,4,6-tetrachlorophenol	µg.l^{-1}	A				<0.50	<0.05	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.50	<0.50	<0.05	<0.05	<0.05	<0.50	<0.50	<0.05	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05
Fluorene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.7	<0.05	<0.05	1.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg.l^{-1}	A		-	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg.l^{-1}	A		0.038	0.0063	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.85	0.85	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	3.4	<0.05	<0.05	<0.05	<0.05	<0.05	3	<0.05	<0.05	<0.05	1.8	<0.05	<0.05	<0.05	<0.05	<0.05
Benza(a)anthracene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg.l^{-1}	A		0.01	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(123-cd)pyrene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenza(ah)anthracene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-chlorophenol	µg.l^{-1}	A	0.1	50	50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	3	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2-methylphenol	µg.l^{-1}	A		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
4-methylphenol	µg.l^{-1}	A		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2 nitrophenol	µg.l^{-1}	A				<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-dimethylphenol	µg.l^{-1}	A		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	<0.50	<0.50	<0.50	1.9	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	1.7
2,4-dichlorophenol	µg.l^{-1}	A	0.1	-	0.42	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,6-dichlorophenol	µg.l^{-1}	A				<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
4-chloro,3-methylphenol	µg.l^{-1}	A	0.1	-	-	6.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6.7	<0.50	<0.50	<0.50	<0.50	7.5	<0.50	<0.50	<0.50	7.7	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,6-trichlorophenol	µg.l^{-1}	A		200	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,5-trichlorophenol	µg.l^{-1}	A				<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
Alpha-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Beta-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Gamma-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Delta-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor	µg.l^{-1}	N		0.03	1.00E-08	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Aldrin	µg.l^{-1}	N	0.003	0.03	0.00125	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor Epoxide	µg.l^{-1}	N		0.03	1.00E-08	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan	µg.l^{-1}	N	0.005	-	0.0005	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDE	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dieidrin	µg.l^{-1}	N	0.003	0.03	0.00125	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan-I	µg.l^{-1}	N	0.005			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp-DDD	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endrin Aldehyde	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan Sulphate	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-O	µg.l^{-1}	S-N	0.05			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Phorate	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-S	µg.l^{-1}	S-N	0.05			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Disulfoton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fenthion	µg.l^{-1}	S-N	0.01	-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloronate	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prothiofos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fensulphothion	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Sulprofos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Azinphos-Methyl	µg.l^{-1}	S-N	0.001	-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Coumaphos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atraton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometon	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simazine	µg.l^{-1}	S-N	0.03	2	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atrazine	µg.l^{-1}	S-N	0.03	100	0.6	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Propazine	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbuthylazine	µg.l^{-1}	S-N		7	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Secbumeton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simetryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ametryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbutryn	µg.l^{-1}	S-N		-	0.0065	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Ammoniacal N	mg.l^{-1} as N			0.39	0.3	92.3	111.5	94.6	11.38461538	157.7	183.8	228.5	157.6923077	170.0	100.8	127.7	133.8	96.92307692	167.7	126.9	146.9	203.1	153.8461538	213.8	236.9	290.8	183.8461538	17.8	69.4	95.4	76.9	89.2	6.461538462	92.3	94.6	91.5	125.4	190.8	117.6923077

Ferry Road Landfill

LONGER TERM LEACHATE MONITORING

		Cert.			2806	2910	3109	3110	3111	3173	3301	3399	3435	3488	3560	3603	3681	3760	3791	3846	3894	3962	4033	4111	4163	4242	4269	4372	4436
Watkins Sample ID	Units	Acc	DWS	EQScostal	16/01/2019	28/02/2019	09/04/2019	25/04/2019	30/05/2019	26/07/2019	22/08/2019	30/09/2019	22/10/2019	26/11/2019	23/12/2019	24/01/2020	20/02/2020	25/03/2020	23/04/2020	28/05/2020	25/06/2020	30/07/2020	28/08/2020	30/09/2020	23/10/2020	25/11/2020	07/12/2020	27/01/2021	11/02/2021
Ammonia	mg.l^{-1} as NH_4	A	0.5	0.38	25	47	48.9	59.7	56	7.3	32.7	26	88.5	38	36	33	31	25	20	125	0.18	0.36	0.03	0.07	6.4	12.4	12.2	10	14.5
Chloride	mg.l^{-1}	A	250		39.4	155	155	181	185	82.5	139	150	110	118	102	133	99.3	105	105	8.9	86.5	79.8	57.7	76	84.5	79.8	85.5	82.4	81
Nickel	µg.l^{-1}	A	20	8.6	7.8	5.1	5.9	3.4	2.7	<1.5	9.6	<1.5	6.1	5.3	3.2	1.8	4.3	4.2	2.3	1.5	2.5	0.9	2.4	2	3.8	<1.5	2.9	<1.5	2.2
Cadmium	µg.l^{-1}	S-N	5	0.2	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	0.14	0.39	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.08
Mecroprop	µg.l^{-1}	A		18	<0.1	<0.1	<0.1	<0.1	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	4.5	<0.1	<0.1	<0.1	<0.1	<0.1
Ammoniacal Nitrogen	mg.l^{-1} as N	A	0.38	0.3	19	36	37.6	45.9	44	5.6	25.2	20	68.1	29	28	25	24	19	15	96	0.14	0.28	0.02	0.05	4.9	9.5	9.4	7.7	11.2
Xylene	µg.l^{-1}	N	500	30	<1.0	2.6	1.4	2.4	1.3	<1.0	1.5	<1.0	<1.0	1.1	2.2	<1.0	<1.0	3.1	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

		Cert.			2806	2910	3109	3110	3111	3173	3301	3399	3435	3488	3560	3603	3681	3760	3791	3846	3894	3962	4033	4111	4163	4242	4269	4372	4436
Grangemore Sample ID	Units	Acc	DWS	EQScostal	16/01/2019	28/02/2019	09/04/2019	25/04/2019	30/05/2019	26/07/2019	22/08/2019	30/09/2019	22/10/2019	26/11/2019	23/12/2019	24/01/2020	20/02/2020	25/03/2020	23/04/2020	28/05/2020	25/06/2020	30/07/2020	28/08/2020	30/09/2020	23/10/2020	25/11/2020	07/12/2020	27/01/2021	11/02/2021
Ammonia	mg.l^{-1} as NH_4	A	0.5	0.38	7.8	286	225	248	231	1.2	247	<0.01	10.5	101	77	105	85	156	210	364	125	72.8	73	88	81	143	107	11.7	229
Chloride	mg.l^{-1}	A	250		22.9	512	330	343	353	866	611	111	143	175	118	188	123	202	297	156	270	212	183	68.3	218	177	157	35.1	286
Nickel	µg.l^{-1}	A	20	8.6	10.3	5.6	6	2.9	10.6	6.4	14	<1.5	5.1	5.3	7.7	4.3	5	10.5	10.8	3	13.1	10.1	9.9	9.4	10.8	3	<1.5	1.9	32
Cadmium	µg.l^{-1}	S-N	5	0.2	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	0.11	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.08
Mecroprop	µg.l^{-1}	A		18	<0.1	<0.1	<0.1	<0.1	9.8	9.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.1	3.9	4	<0.1	<0.1	8.7	<0.1	27.8
Ammoniacal Nitrogen	mg.l^{-1} as N	A	0.38	0.3	6	220	173	191	178	0.9	190	<0.01	8.1	78	59	81	65	120	160	280	96	56	56	68	62	110	82	9	176
Xylene	µg.l^{-1}	N	500	30	<1.0	1.1	2	2.4	<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

		Cert.			2806	2910	3109	3110	3111	3173	3301	3399	3435	3488	3560	3603	3681	3760	3791	3846	3894	3962	4033	4111	4163	4242	4269	4372	4436
D Drive Sample ID	Units	Acc	DWS	EQScostal	16/01/2019	28/02/2019	09/04/2019	25/04/2019	30/05/2019	26/07/2019	22/08/2019	30/09/2019	22/10/2019	26/11/2019	23/12/2019	24/01/2020	20/02/2020	25/03/2020	23/04/2020	28/05/2020	25/06/2020	30/07/2020	28/08/2020	30/09/2020	23/10/2020	25/11/2020	07/12/2020	27/01/2021	11/02/2021
Ammonia	mg.l^{-1} as NH_4	A	0.5	0.38	10	34	23.3	46.3	66	59.1	38.3	14.3	0.83	25	25	27	25	42	70	481	31.2	40.8	0.03	0.83	<0.01	3.1	3.4	0.25	2.6
Chloride	mg.l^{-1}	A	250		58.4	219	253	310	380	335	136	151	176	214	210	205	166	275	371	58.4	285	301	264	252	225	179	198	143	130
Nickel	µg.l^{-1}	A	20	8.6	2.6	2.2	3.4	3.1	<1.5	<1.5	2.6	4.6	2	2	2.8	<1.5	<1.5	3.2	<1.5	13.5	<1.5	1.9	2.1	<1.5	3.1	<1.5	<1.5	<1.5	<1.5
Cadmium	µg.l^{-1}	S-N	5	0.2	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	0.4	<0.08
Mecroprop	µg.l^{-1}	A		18	<0.1	<0.1	<0.1	<0.1	4.4	4.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	9.4	<0.1	<0.1	8.4	3.7	22.6	2.5	<0.1	3.9	<0.1	2.5
Ammoniacal Nitrogen	mg.l^{-1} as N	A	0.38	0.3	7.7	26	17.9	35.6	51	45.5	29.4	11	0.64	19	19	21	19	32	54	370	24	31	0.02	0.64	<0.01	2.4	2.6	0.19	2
Xylene	µg.l^{-1}	N	500	30	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	32.9	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

C.2 Groundwater

Ferry Road Landfill

GROUNDWATER MONITORING

		Date				05/05/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021
Sample ID	Units	Acc	MRV	DWS	EQScostal	FR1	FR1	FR1	FR1	FR1	FR1	FR1
Ammonia	mg.l^{-1} as NH_4	A		0.5	0.38	0.07	0.04	0.01	<0.01	0.08	0.09	0.11
Nitrate	mg.l^{-1} as NO_3	A		50	-	13.9	12.2	17	17.6	15.1	18	13.8
Nitrite	mg.l^{-1} as NO_3	A		0.5	-	0.003	<0.003	<0.003	<0.003	0.017	<0.003	<0.003
Arsenic	µg.l^{-1}	S-A		10	25	0.91	0.87	1	2.4	0.65	1.1	0.93
Mercury	µg.l^{-1}	S-A	0.01	1	0.05	<0.05	<0.05	0.13	<0.05	<0.05	<0.05	<0.05
Barium	µg.l^{-1}	A		1000	-	13.5	19.4	14.6	15.3	18	20.1	18.7
Boron	µg.l^{-1}	A		1000	-	538	422	265	824	819	830	692
Cadmium	µg.l^{-1}	A	0.1	5	0.08*	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9
Chromium	µg.l^{-1}	A		50	4.7*	3.3	<1.0	7.6	7.4	6.1	7.7	6.3
Copper	µg.l^{-1}	A		2000	1* (MBAT)	2.2	3.6	2.5	<0.8	1.9	3.2	3.3
Iron	µg.l^{-1}	A		200	1000	70	42	159	80.7	49.2	81.9	54.3
Lead	µg.l^{-1}	A		10	1.2*	<4.1	<4.1	4.4	<4.1	11.2	14.7	6.5
Manganese	µg.l^{-1}	A		50	123* (MBAT)	6.8	2.8	<1.0	4.1	3.1	9.9	5.4
Nickel	µg.l^{-1}	A		20	4* (MBAT)	2	2.3	1.8	<1.5	<1.5	<1.5	<1.5
Zinc	µg.l^{-1}	A		5000	6.8	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	1.4
Potassium	mg.l^{-1}	A		12	-	23.3	20	25	30.7	33.1	28.2	24.6
Hexavalent Chromium	mg.l^{-1}	N		-	0.0006	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50
Free Cyanide	mg.l^{-1}	S-A		0.05	0.001	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Cyanide	mg.l^{-1}	S-A		0.05	0.001	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
pH	pH units	A				7.1	7.2	7.1	7.2	7.1	7.3	7.5
Chloride	mg.l^{-1}	A		250	-	126	104	116	164	174	204	156
TOC	mg.l^{-1}	A				50.2	77.1	70.5	30.1	40.7	43.4	42.5
Total Phenol	mg.l^{-1}	A			7.7	<0.01	0.08	<0.01	<0.01	0.02	0.08	0.19
Sulphate	mg.l^{-1}	A		250	-	43.4	52.3	51.3	55.6	62.2	55.7	86.4
Mecoprop	µg.l^{-1}	A	0.04	10	18	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TPH	mg.l^{-1}	N		0.01		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethylphthalate	µg.l^{-1}	S-N				<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Diethyl Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Bytul Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Butylbenzyl Phthalate	µg.l^{-1}	S-N		-	0.75	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bis(2-Ethylhexyl) Phthalate	µg.l^{-1}	S-N		8	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Octyl Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Naphthalene	µg.l^{-1}	A		-	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4-nitrophenol	µg.l^{-1}	A				<0.5	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05
2,3,4,6-tetrachlorophenol	µg.l^{-1}	A				<0.5	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05
Fluorene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg.l^{-1}	A		-	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg.l^{-1}	A		0.038	0.0063	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benza(a)anthracene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg.l^{-1}	A		0.01	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(123-cd)pyrene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenza(ah)anthracene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-chlorophenol	µg.l^{-1}	A	0.1	50	50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2-methylphenol	µg.l^{-1}	A		-	-	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
4-methylphenol	µg.l^{-1}	A		-	-	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2 nitrophenol	µg.l^{-1}	A				<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-dimethylphenol	µg.l^{-1}	A		-	-	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-dichlorophenol	µg.l^{-1}	A	0.1	-	0.42	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,6-dichlorophenol	µg.l^{-1}	A				<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
4-chloro,3-methylphenol	µg.l^{-1}	A	0.1	-	-	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,6-trichlorophenol	µg.l^{-1}	A		200	-	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,5-trichlorophenol	µg.l^{-1}	A				<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
Alpha-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Beta-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Gamma-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Delta-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor	µg.l^{-1}	N		0.03	1.00E-08	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Aldrin	µg.l^{-1}	N	0.003	0.03	0.00125	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor Epoxide	µg.l^{-1}	N		0.03	1.00E-08	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan	µg.l^{-1}	N	0.005	-	0.0005	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp -DDE	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dieldrin	µg.l^{-1}	N	0.003	0.03	0.00125	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan-I	µg.l^{-1}	N	0.005			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp -DDD	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endrin Aldehyde	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan Sulphate	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-O	µg.l^{-1}	S-N	0.05			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Phorate	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-S	µg.l^{-1}	S-N	0.05			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Disulfoton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fenthion	µg.l^{-1}	S-N	0.01	-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloronate	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prothiofos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fensulphothion	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Sulprofos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Azinphos-Methyl	µg.l^{-1}	S-N	0.001	-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Coumaphos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atraton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometon	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simazine	µg.l^{-1}	S-N	0.03	2	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atrazine	µg.l^{-1}	S-N	0.03	100	0.6	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Propazine	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbuthylazine	µg.l^{-1}	S-N		7	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Secbumeton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simetryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ametryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbutryn	µg.l^{-1}	S-N		-	0.0065	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Ammoniacal nitrogen	mg.l^{-1} as N			0.39	0.3	0.054	0.031	0.008	<0.01	0.062	0.069	0.085

Ferry Road Landfill

LONGER TERM GROUNDWATER MONIT(

		Cert.			2806	2910	3109	3110	3111	3173	3301	3399	3435	3488	3560	3603
B&M Sample ID	Units	Acc	DWS	EQScostal	16/01/2019	28/02/2019	09/04/2019	25/04/2019	30/05/2019	26/07/2019	22/08/2019	30/09/2019	22/10/2019	26/11/2019	23/12/2019	24/01/2020
Ammonia	$mg.l^{-1}$ as NH_4	A	0.5	0.38	0.46	0.61	0.1	0.01	0.03	0.16	0.26	234	28.7	0.11	0.04	0.03
Chloride	$mg.l^{-1}$	A	250		-	-	-	-	-	-	-	-	-	-	-	-
Nickel	$\mu g.l^{-1}$	A	20	8.6	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	$\mu g.l^{-1}$	S-N	5	0.2	-	-	-	-	-	-	-	-	-	-	-	-
Mecroprop	$\mu g.l^{-1}$	A		18	-	-	-	-	-	-	-	-	-	-	-	-
Ammoniacal Nitrogen	$mg.l^{-1}$ as N	A	0.38	0.3	0.35	0.47	0.08	0.01	0.02	0.12	0.2	180	22	0.09	0.03	0.02
Xylene	$\mu g.l^{-1}$	N	500	30	-	-	-	-	-	-	-	-	-	-	-	-

	3681	3760	3791	3846	3894	3962	4033	4111	4163	4242	4269	4372	4436
B&M Sample ID	20/02/2020	25/03/2020	23/04/2020	28/05/2020	25/06/2020	30/07/2020	28/08/2020	30/09/2020	23/10/2020	25/11/2020	07/12/2020	27/01/2021	11/02/2021
Ammonia	0.04	1.7	1.7	0.17	0.01	0.13	0.01	0.05	<0.01	1.1	0.81	0.36	2.4
Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-	-	-	-	-	-	-
Mecroprop	-	-	-	-	-	-	-	-	-	-	-	-	-
Ammoniacal Nitrogen	0.03	1.3	1.3	0.13	0.01	0.1	0.01	0.04	<0.01	0.85	0.62	0.28	1.8
Xylene	-	-	-	-	-	-	-	-	-	-	-	-	-

C.3 Surface water

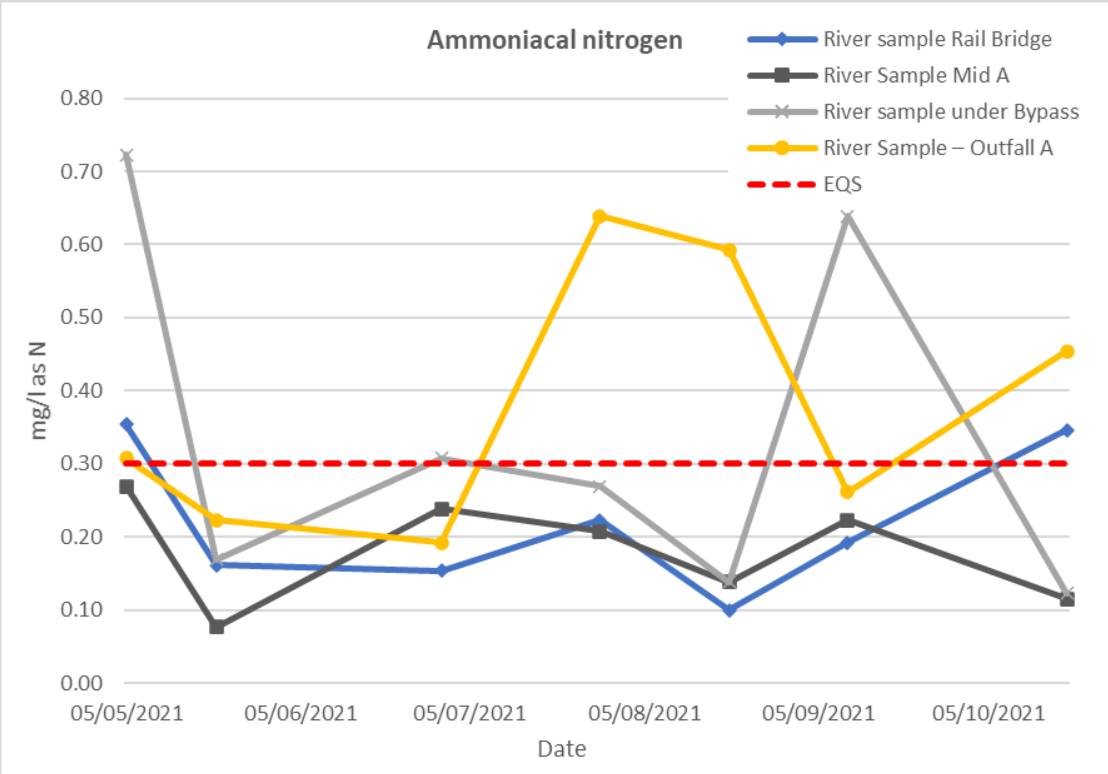
Ferry Road Landfill

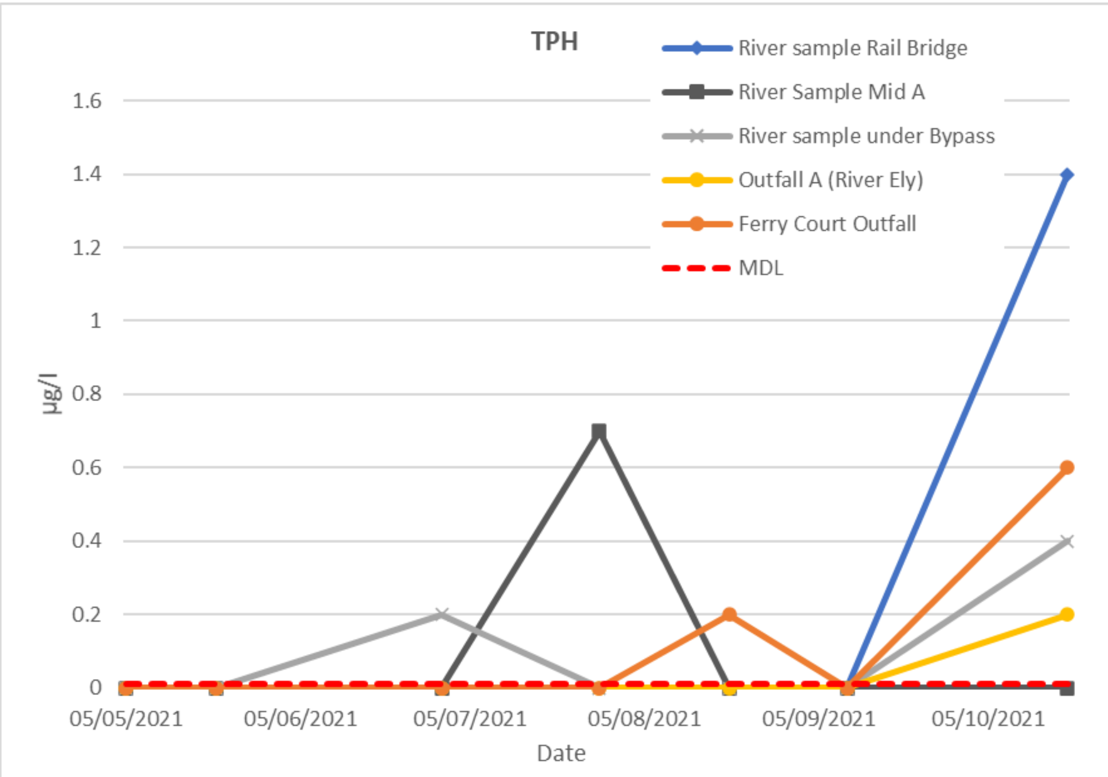
SURFACE WATER MONITRORING

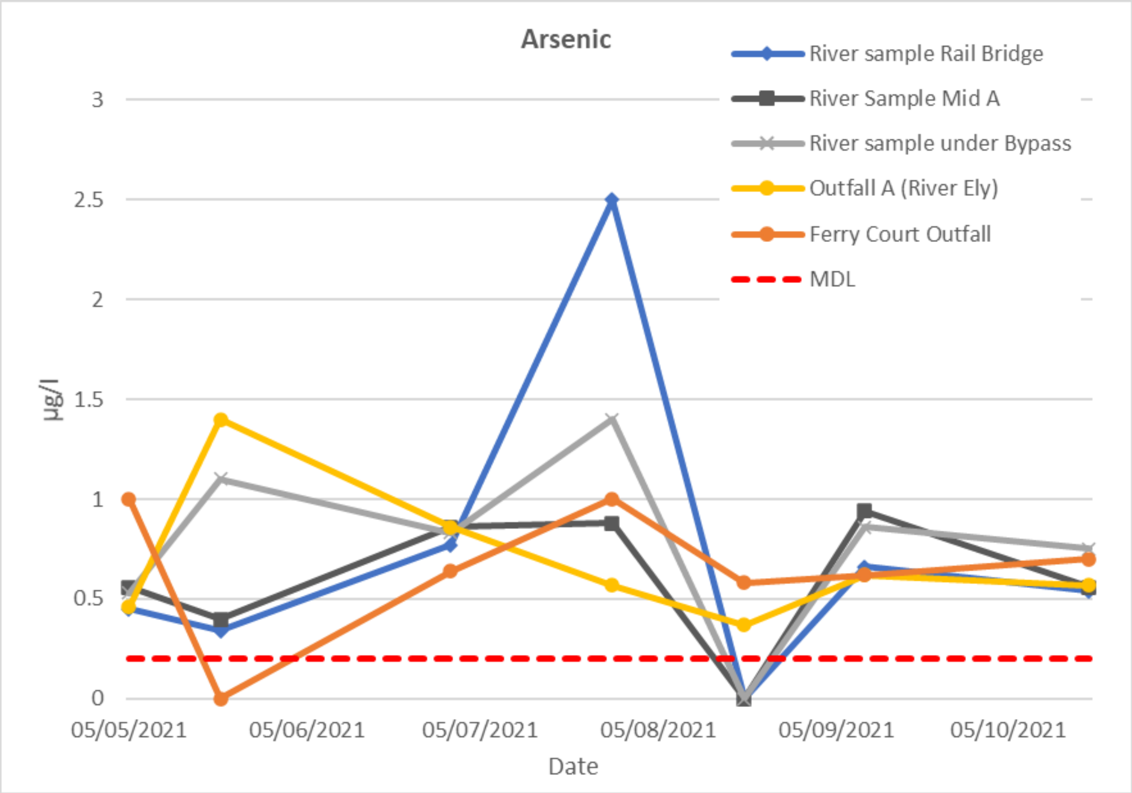
		Date				05/05/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	05/05/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	05/05/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	05/05/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021	05/05/2021	21/05/2021	30/06/2021	28/07/2021	20/08/2021	10/09/2021	19/10/2021
Sample ID	Units	Acc	MRV	DWS	EQS	River sample Rail Bridge	River sample Rail Bridge	River sample Rail Bridge	River sample Rail Bridge	River sample Rail Bridge	River sample Rail Bridge	River sample Rail Bridge	River Sample Mid A	River Sample Mid A	River Sample Mid A	River Sample Mid A	River Sample Mid A	River Sample Mid A	River Sample Mid A	River sample under Bypass	River sample under Bypass	River Sample Under Bypass	River Sample Under Bypass	River Sample Under Bypass	River Sample Under Bypass	River Sample Under Bypass	River Sample – Outfall A	River Sample – Outfall A	River Sample – Outfall A	River Sample – Outfall A	River Sample – Outfall A	River Sample – Outfall A	River Sample – Outfall A	Outfall A – Ferry Court	Outfall A – Ferry Court	Outfall A – Ferry Court	Outfall A – Ferry Court	Outfall A – Ferry Court	Outfall A – Ferry Court	Outfall A – Ferry Court
Ammonia	mg.l^{-1} as NH_4	A		0.5	0.38	0.46	0.21	0.2	0.29	0.13	0.25	0.45	0.35	0.1	0.31	0.27	0.18	0.29	0.15	0.94	0.22	0.4	0.35	0.18	0.83	0.16	0.4	0.29	0.25	0.83	0.77	0.34	0.59	58.4	20.3	18.6	4.4	16.9	53.8	21.4
Nitrate	mg.l^{-1} as NO_3	A		50	-	10.9	2.2	2.6	7.7	12.8	11.9	10.9	12.7	16.5	2.6	8	9.7	11.3	9.7	12.4	6.3	13.5	8.9	9.4	10.7	9.8	10.1	2.9	3.1	8.7	10.8	11.6	11.4	2.7	<0.3	7.2	1.5	7.2	2.6	3.4
Nitrite	mg.l^{-1} as NO_3	A		0.5	-	0.17	0.053	0.13	0.16	0.17	0.14	0.083	0.19	0.059	0.17	0.22	0.13	0.14	0.046	0.19	0.056	0.17	0.21	0.12	0.26	0.059	0.29	0.043	0.14	0.21	0.16	0.17	0.083	0.066	0.023	0.39	0.14	0.51	0.2	0.3
Arsenic	µg.l^{-1}	S-A		10	25	0.45	0.34	0.77	2.5	<0.20	0.66	0.54	0.56	0.4	0.86	0.88	<0.20	0.94	0.56	0.53	1.1	0.83	1.4	<0.20	0.86	0.75	0.46	1.4	0.86	0.57	0.37	0.62	0.57	1	<0.20	0.64	1	0.58	0.62	0.7
Mercury	µg.l^{-1}	S-A	0.01	1	0.05	<0.05	<0.05	0.12	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	µg.l^{-1}	A		1000	-	61.5	58.4	107	107	74.4	104	80.8	67	68.1	98.2	105	72	73.2	72.9	72.3	65	97.3	106	69.2	74.5	66.1	73	55.7	95.9	107	76.1	102	77	907	430	619	271	288	701	250
Boron	µg.l^{-1}	A		1000	-	28.4	<6.5	<6.5	75.8	65.5	25	26.7	73	<6.5	<6.5	111	102	61.8	30.2	142	86.2	<6.5	169	151	109	53.1	48.2	<6.5	<6.5	96.2	93.3	37.4	36.2	2,240	742	826	337	863	2,820	983
Cadmium	µg.l^{-1}	A	0.1	5	0.08*	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9
Chromium	µg.l^{-1}	A		50	4.7*	1.9	<1.0	6.5	6.3	6.9	10.2	3.1	1.7	<1.0	5.8	6.3	6.6	7.5	6.9	1.9	<1.0	5.6	7.1	6.4	8.2	1.9	1.9	<1.0	5.8	7.1	6.2	7.7	6.1	3.2	<1.0	<1.0	1.5	<1.0	1.8	<1.0
Copper	µg.l^{-1}	A		2000	1* (MBAT)	3.2	3.3	4.4	2.3	3.2	4.2	4.4	3.2	2.5	2.1	2.1	2.2	3.7	3.2	2.8	2.3	2.4	1.8	3	3.4	3.7	17.4	2.8	3.8	4	4.3	5	6.2	2.3	3.3	1.9	5.5	3.1	4.1	1.7
Iron	µg.l^{-1}	A		200	1000	65.7	66.3	169	28.4	32.8	9.4	13.5	59.9	59.3	143	23.9	45.6	19.6	18.3	51.2	68.6	183	26.2	35	14.2	28.1	66.6	74.6	312	55.4	23.8	2.4	12.5	419	228	543	1,200	85.3	135	69.6
Lead	µg.l^{-1}	A		10	1.2*	<4.1	<4.1	7.1	<4.1	4.3	7	6.7	<4.1	<4.1	<4.1	<4.1	<4.1	5.3	8.2	5.4	<4.1	<4.1	<4.1	<4.1	7.7	<4.1	5.2	<4.1	<4.1	<4.1	5.7	18.7	10.5	<4.1	<4.1	<4.1	<4.1	<4.1	18	<4.1
Manganese	µg.l^{-1}	A		50	123* (MBAT)	5.3	2.5	<1.0	5.4	1.8	3	<1.0	3	2.9	5.1	3.4	2.4	1.8	<1.0	4	2.6	15.9	6.3	3.4	1.8	<1.0	4.4	3.6	<1.0	8.3	1.7	3.8	<1.0	182	131	101	15.1	47	1,260	88.5
Nickel	µg.l^{-1}	A		20	4* (MBAT)	1.8	2.4	<1.5	<1.5	<1.5	1.8	<1.5	1.9	2.1	<1.5	<1.5	<1.5	3	<1.5	1.9	1.9	<1.5	<1.5	<1.5	1.8	<1.5	1.9	2.1	<1.5	<1.5	<1.5	2.1	<1.5	3.4	2.5	<1.5	<1.5	<1.5	<1.5	<1.5
Zinc	µg.l^{-1}	A		5000	6.8	<1.1	<1.1	9.9	<1.1	<1.1	<1.1	8.7	<1.1	<1.1	3.9	21.4	<1.1	<1.1	12.6	<1.1	<1.1	4.7	<1.1	<1.1	<1.1	1.2	2.1	<1.1	4.3	<1.1	<1.1	<1.1	1.5	<1.1	6.3	3.8	7.8	16.3	8.5	<1.1
Potassium	mg.l^{-1}	A		12	-	4	2.6	5.7	6.4	5	6.6	4.5	4.4	3.1	5.7	6.7	5.4	6.3	4.3	4.9	3.3	5.9	6.6	5.3	6.4	4.7	4.3	2.7	5.6	6.5	5.5	6.2	4.6	37.2	13	14.5	3.9	14.4	33.8	15.4
Hexavalent Chromium	mg.l^{-1}	N		-	0.0006	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50
Free Cyanide	mg.l^{-1}	S-A		0.05	0.001	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Total Cyanide	mg.l^{-1}	S-A		0.05	0.001	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
pH	pH units	A				7.7	7.7	7.9	7.8	7.9	8.1	8.1	7.8	7.9	7.8	7.9	8.1	8.1	8.2	7.9	7.9	7.8	7.9	8.2	8	8.2	7.6	7.7	7.9	7.8	7.8	8	8.2	7.4	7.3	7.4	7.4	7.4	7.7	7.8
Chloride	mg.l^{-1}	A		250	-	30.8	24.9	29.2	32.4	25.1	36.7	24.3	27.7	19.5	29.2	32.4	25.7	33.8	24.6	34.3	23	29.4	31.9	25.4	34.3	24.6	27.4	24.3	29.1	31.6	26.1	33.8	25	522	132	108	23.8	78.9	222	114
TOC	mg.l^{-1}	A				20.8	17.6	24.5	25.3	46.7	31.7	30.1	24.2	15.3	16.7	20.4	2.4	15.4	40.6	22.2	16.2	20.6	35.4	21.6	23.4	54.3	22.2	14.2	17.8	15.7	34.5	30	44.9	157	59.6	27.5	25.7	20.9	21.2	71.4
Total Phenol	mg.l^{-1}	A			7.7	<0.01	0.04	<0.01	0.16	<0.01	<0.01	<0.01	0.06	<0.01	0.02	0.22	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.21	<0.01	<0.01	<0.01	0.09	0.14	0.04	0.07	0.04	0.26	0.13
Sulphate	mg.l^{-1}	A		250	-	16.1	11.1	25.9	28.8	23.3	25.6	25.7	18.1	11.5	27	29.3	21.8	26	24.7	21	11.5	26.9	28.9	22.7	27.3	26.7	17.6	11.7	27.1	29.4	22.8	26.8	25.4	13.3	5.2	15.3	5.5	28.1	17.8	7.1
Mecoprop	µg.l^{-1}	A	0.04	10	18	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.4	<0.1	<0.1	<0.1	<0.1	<0.1
TPH	mg.l^{-1}	N		0.01		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	1.4	<0.2	<0.2	<0.2	0.7	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	0.6
Dimethylphthalate	µg.l^{-1}	S-N				<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Diethyl Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Bytul Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Butylbenzyl Phthalate	µg.l^{-1}	S-N		-	0.75	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bis(2-Ethylhexyl) Phthalate	µg.l^{-1}	S-N		8	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-Octyl Phthalate	µg.l^{-1}	S-N		-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Naphthalene	µg.l^{-1}	A		-	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4-nitrophenol	µg.l^{-1}	A				<0.5	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05
2,3,4,6-tetrachlorophenol	µg.l^{-1}	A				<0.5	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05	<0.5	<0.5	<0.50	<0.50	<0.05	<0.05	<0.05
Fluorene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.17	1.1	<0.05	<0.05	<0.05	<0.05
Anthracene	µg.l^{-1}	A		-	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg.l^{-1}	A		0.038	0.0063	<0.05	0.53	<0.05	<0.05	0.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	0.8	0.8	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg.l^{-1}	A		0.01	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(123-cd)pyrene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenza(ah)anthracene	µg.l^{-1}	A		-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	µg.l^{-1}	A		0.1	0.00017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-chlorophenol	µg.l^{-1}	A	0.1	50	50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2-methylphenol	µg.l^{-1}	A		-	-	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
4-methylphenol	µg.l^{-1}	A		-	-	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2 nitrophenol	µg.l^{-1}	A				<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-dimethylphenol	µg.l^{-1}	A		-	-	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-dichlorophenol	µg.l^{-1}	A	0.1	-	0.42	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,6-dichlorophenol	µg.l^{-1}	A				<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
4-chloro,3-methylphenol	µg.l^{-1}	A	0.1	-	-	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,6-trichlorophenol	µg.l^{-1}	A		200	-	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,5-trichlorophenol	µg.l^{-1}	A				<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	2	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
Alpha-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Beta-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Gamma-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Delta-BHC	µg.l^{-1}	N		-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor	µg.l^{-1}	N		0.03	1.00E-08	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Aldrin	µg.l^{-1}	N	0.003	0.03	0.00125	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Heptachlor Epoxide	µg.l^{-1}	N		0.03	1.00E-08	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan	µg.l^{-1}	N	0.005	-	0.0005	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp -DDE	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dieidrin	µg.l^{-1}	N	0.003	0.03	0.00125	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan-I	µg.l^{-1}	N	0.005			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
pp -DDD	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endrin Aldehyde	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Endosulphan Sulphate	µg.l^{-1}	N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-O	µg.l^{-1}	S-N	0.05			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Phorate	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Demeton-S	µg.l^{-1}	S-N	0.05			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Disulfoton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fenthion	µg.l^{-1}	S-N	0.01	-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloronate	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prothiofos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Fensulphothion	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Sulprofos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Azinphos-Methyl	µg.l^{-1}	S-N	0.001	-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Coumaphos	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atraton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometon	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simazine	µg.l^{-1}	S-N	0.03	2	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Atrazine	µg.l^{-1}	S-N	0.03	100	0.6	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Propazine	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbuthylazine	µg.l^{-1}	S-N		7	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Secbumeton	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Simetryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ametryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Prometryn	µg.l^{-1}	S-N				<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Terbutryn	µg.l^{-1}	S-N		-	0.0065	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

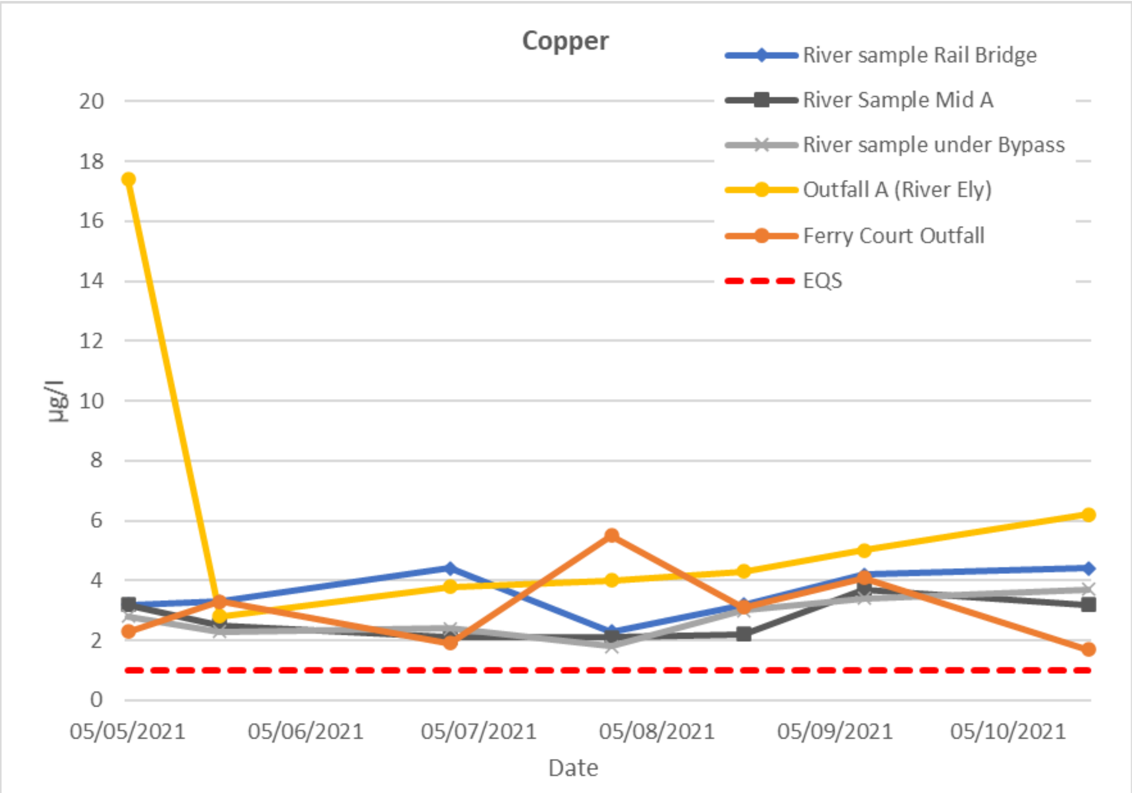
Ammoniacal N	mg.l^{-1} as N			0.39	0.3	0.35	0.16	0.15	0.22	0.10	0.19	0.35	0.27	0.08	0.24	0.21	0.14	0.22	0.12	0.72	0.17	0.31	0.27	0.14	0.64	0.12	0.31	0.22	0.19	0.64	0.59	0.26	0.45	44.92	15.62	14.31	3.38	13.00	41.38	16.46

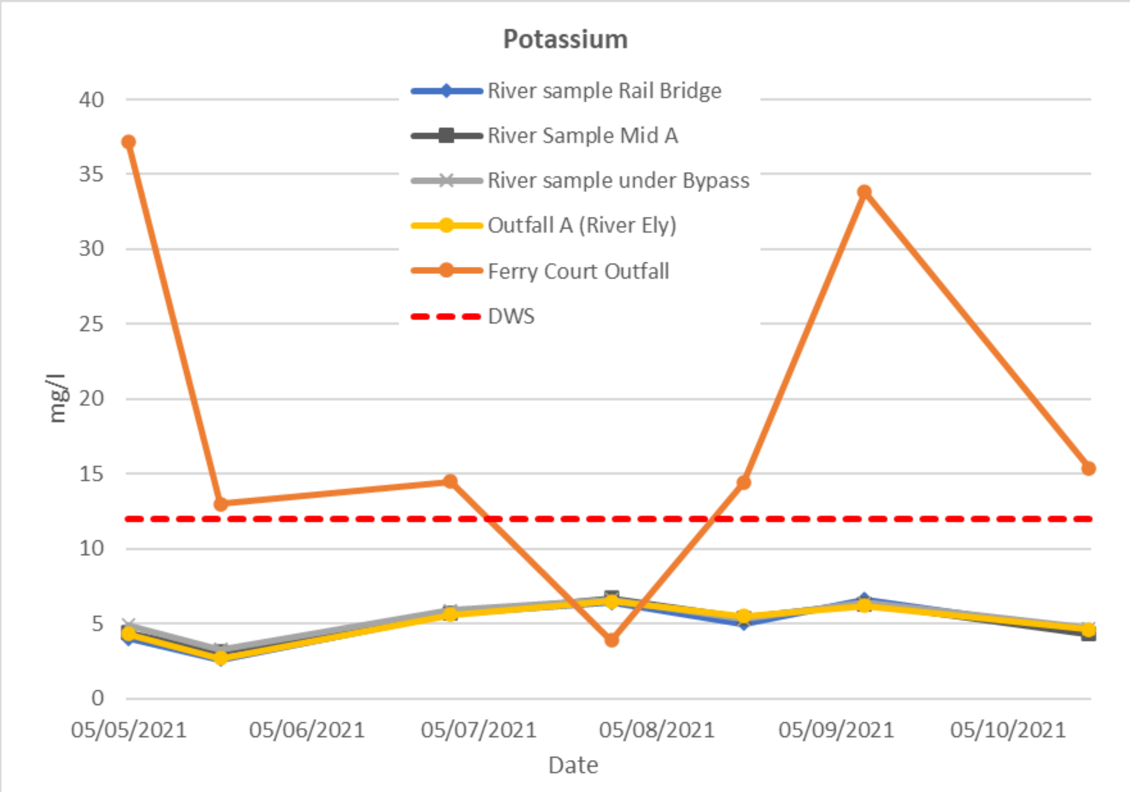
D. Graphical surface water monitoring results






Arsenic
River sample Rail Bridge
River Sample Mid A
River sample under Bypass
Outfall A (River Ely)
Ferry Court Outfall
MDL
µg/l
3
2.5
2
1.5
1
0.5
0
05/05/2021
05/06/2021
05/07/2021
05/08/2021
05/09/2021
05/10/2021
Date


Copper
River sample Rail Bridge
River Sample Mid A
River sample under Bypass
Outfall A (River Ely)
Ferry Court Outfall
EQS
µg/l
20
18
16
14
12
10
8
6
4
2
0
05/05/2021
05/06/2021
05/07/2021
05/08/2021
05/09/2021
05/10/2021
Date


Potassium
River sample Rail Bridge
River Sample Mid A
River sample under Bypass
Outfall A (River Ely)
Ferry Court Outfall
DWS
mg/l
0
5
10
15
20
25
30
35
40
05/05/2021
05/06/2021
05/07/2021
05/08/2021
05/09/2021
05/10/2021
Date

mottmac.com