
Canvey Lake

Water Quality Report

Project reference number: CP2526-158

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1. Introduction

A.G.A Group Consultancy Limited were commissioned to undertake Waste Acceptance Criteria (WAC) testing on sediment samples collected from Canvey Lake TQ 79536 84074, under instruction by Stuart Jarvis of Castle Point Borough Council (Client). The purpose of the assessment is to determine whether the sampled material meets the relevant landfill Waste Acceptance Criteria and, specifically, to assess its suitability for disposal at an inert landfill facility based on the analytical results obtained.

WAC testing is used to assess the leaching characteristics and organic content of a waste material against established landfill acceptance thresholds. WAC testing is undertaken to determine whether a waste may be accepted at a particular landfill class and should not be used to classify waste as hazardous or non-hazardous.

This report presents the findings of the WAC assessment based solely on the analytical results contained within the laboratory report No: 26-17978-1 dated 29th June 2026. The report considers the samples against the relevant WAC criteria and provides an assessment of landfill acceptance suitability based on the available data. It does not constitute a WM3 waste classification assessment and should not be interpreted as assigning a hazardous or non-hazardous waste status to the material.

Project	CP2526-158 Canvey Lake
Client	Castle Point Borough Council
Laboratory	Eurofins Chemtest Ltd
Laboratory Report No.	26-17978-1
Sampling Date	04-Jun-2026
Report Date of Issue	29-Jun-2026
Number of Samples	3
Test Standard	BS EN 12457 compliance leaching test at L/S 10 l/kg

2. Sampling Methodology

Sediment sampling was undertaken by A.G.A Group Consultancy Limited on 4 June 2026 at Canvey Lake.

Sampling was completed from a boat to provide access to representative areas of the lake and to obtain samples from sediment deposits considered likely to be encountered during any future dredging or desilting activities. Three composite sediment samples were collected from separate locations across the waterbody. Composite sampling was adopted in order to minimise the effects of localised variability and to provide samples representative of the wider sediment body.

Following collection, the samples were securely packaged and submitted for laboratory analysis.

3. Basis of Assessment

The purpose of the assessment is to determine whether the sampled material complies with the relevant landfill Waste Acceptance Criteria limits reported by the laboratory.

The WAC testing includes both solid-phase analysis and eluate analysis generated through standardised leaching procedures. The results are compared against the landfill acceptance criteria included within the laboratory report for:

- Inert Waste Landfill
- Stable Non-Reactive Hazardous Waste (SNRHW) deposited within a Non-Hazardous Landfill
- Hazardous Waste Landfill

For the purposes of this report, particular emphasis has been placed on the Inert Waste Landfill acceptance criteria, as this represents the most restrictive landfill class and is typically the preferred disposal route for uncontaminated soils and sediments.

Accordingly, the conclusions presented within this report should be interpreted solely as an assessment of landfill acceptance suitability based upon the available WAC analytical results. Final waste classification and disposal options remain subject to the outcome of the outstanding WM3 assessment.

4. Summary of Results

Across all three samples, the leachable (eluate) concentrations of the ten regulated metals (arsenic, barium, cadmium, chromium, copper, mercury, molybdenum, nickel, lead, selenium, zinc and antimony) are very low and comfortably satisfy even the strict Inert Waste Landfill limits. Total BTEX, total PCBs, TPH (C10–C40), total PAHs, phenol index and dissolved organic carbon are likewise well within Inert Waste Landfill limits in all three samples.

Sample compliance is instead driven by three parameters — Total Organic Carbon (TOC), Loss on Ignition (LOI), and to a lesser extent leachate Chloride and Total Dissolved Solids (TDS). Table of results shown in sections: *4.1 Solid-Phase Parameters*, *4.2 Eluate (Leachate) Parameters*.

5. Discussion

The WAC assessment indicates that the sampled material is characterised by elevated organic content rather than elevated concentrations of potentially contaminative substances. The analytical results demonstrate that leachable concentrations of metals, hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and dissolved organic carbon are generally low and are well within the reported inert landfill acceptance criteria.

The principal factor affecting compliance with the inert landfill acceptance criteria is Total Organic Carbon (TOC). The recorded TOC concentrations of 5.7%, 13% and 7.0% exceed the inert landfill acceptance limit of 3% in all three samples. As a consequence, none of the samples currently satisfy the requirements for disposal at an inert landfill facility.

Elevated TOC concentrations are not uncommon within lake and pond sediments, where organic matter accumulates naturally through the deposition and decomposition of vegetation, algae and other biological material. The results obtained are therefore considered consistent with the characteristics of organic-rich sediment rather than material affected by significant contamination. This interpretation is further supported by the low concentrations of metals and hydrocarbon-related determinants reported throughout the analytical dataset.

It should be noted that this assessment relates solely to landfill acceptance criteria. The WAC analysis undertaken cannot be used to determine whether the material is hazardous or non-hazardous waste, and the laboratory report specifically advises that WAC testing must not be used for hazardous waste classification purposes. A separate WM3 classification assessment is therefore required before the material can be assigned an appropriate waste classification and final disposal route.

Accordingly, the current assessment supports a conclusion that the sampled sediment is unsuitable for disposal at an inert landfill based on the reported WAC results, but it does not determine whether the material should be managed as hazardous or non-hazardous waste.

6. Conclusions

Based on the analytical results presented within Report No. 26-17978-1, the following conclusions are made:

- Three composite sediment samples were collected from Canvey Lake on 4 June 2026 and subjected to laboratory Waste Acceptance Criteria (WAC) testing.
- All three samples exceed the inert landfill Total Organic Carbon (TOC) acceptance criterion of 3%, with reported concentrations of 5.7%, 13% and 7.0% respectively.
- The sampled material does not currently meet the Waste Acceptance Criteria for disposal at an inert landfill facility.
- Leachable concentrations of metals, hydrocarbons, PAHs, PCBs and dissolved organic carbon are low and are not considered to be the primary constraint to landfill acceptance.
- The analytical results are indicative of organic-rich lake sediments rather than material exhibiting significant contaminant impacts.
- The WAC assessment does not determine whether the waste is hazardous or non-hazardous. Final waste classification remains subject to completion of the outstanding WM3 assessment.

7. Recommendations

The following recommendations are made based on the available information:

- Completion of WM3 waste classification assessment to determine whether the sampled material should be classified as hazardous or non-hazardous waste.
- Upon receipt of the WM3 assessment, review the findings alongside the WAC data to identify the most appropriate disposal or management route for the material.
- Discuss the analytical results with the intended receiving waste management facility or landfill operator to confirm site-specific acceptance requirements, as additional characterisation or supporting information may be required prior to acceptance.
- If disposal remains the preferred management option, obtain formal written acceptance from the receiving facility prior to mobilisation of any dredging or sediment removal works.
- Consider whether alternative management options, including beneficial reuse or treatment solutions, may be appropriate given the low concentrations of contaminant-related determinants identified within the samples.

4.1 Solid-Phase Parameters

Determinand	Units	Sample 1 (2127315)	Sample 2 (2127316)	Sample 3 (2127317)
Total Organic Carbon (TOC)	%	5.7	13	7
Loss On Ignition (LOI)	%	15	23	15
Total BTEX	mg/kg	0.01	0.01	0.01
Total PCBs (7 congeners)	mg/kg	0.05	0.05	0.05
TPH (C10–C40)	mg/kg	81	71	65
Total PAHs (17)	mg/kg	0.8	0.8	1.3
Phenol Index	mg/kg	0.3	0.3	0.3

4.2 Eluate (Leachate) Parameters

Determinand	Units	Sample 1 (2127315)	Sample 2 (2127316)	Sample 3 (2127317)
Arsenic	mg/kg	0.16	0.12	0.067
Barium	mg/kg	0.15	0.16	0.16
Cadmium	mg/kg	0.0011	0.0011	0.0011
Chromium	mg/kg	0.005	0.005	0.005
Copper	mg/kg	0.005	0.009	0.005
Mercury	mg/kg	0.0005	0.0005	0.0005
Molybdenum	mg/kg	0.15	0.049	0.055
Nickel	mg/kg	0.0075	0.005	0.0071
Lead	mg/kg	0.005	0.005	0.005
Antimony	mg/kg	0.023	0.0051	0.012
Selenium	mg/kg	0.005	0.005	0.005
Zinc	mg/kg	0.025	0.025	0.025
Chloride	mg/kg	5200	3500	2100
Fluoride	mg/kg	3.1	2.7	2.3
Sulphate	mg/kg	820	420	510
Total Dissolved Solids	mg/kg	8200	7000	4600
Dissolved Organic Carbon	mg/kg	110	88	75