

Mobuoy Remediation Project – Updated Waste Quantity Estimate – June 2023

How much waste is present on the site?

Following a review of all ground investigation information now available for the Mobuoy site, incorporating both historical ground investigation information and recent additional ground investigation information, it is now estimated that the quantity of waste on the site is approximately **1,630,444 cubic metres**.

Using a conversion factor of one cubic metre of waste being equal to one tonne, it is estimated that **1,630,444 tonnes** of waste is present at the Mobuoy site, and this is the quantity of waste that requires remediation.

What type of waste is present on the site?

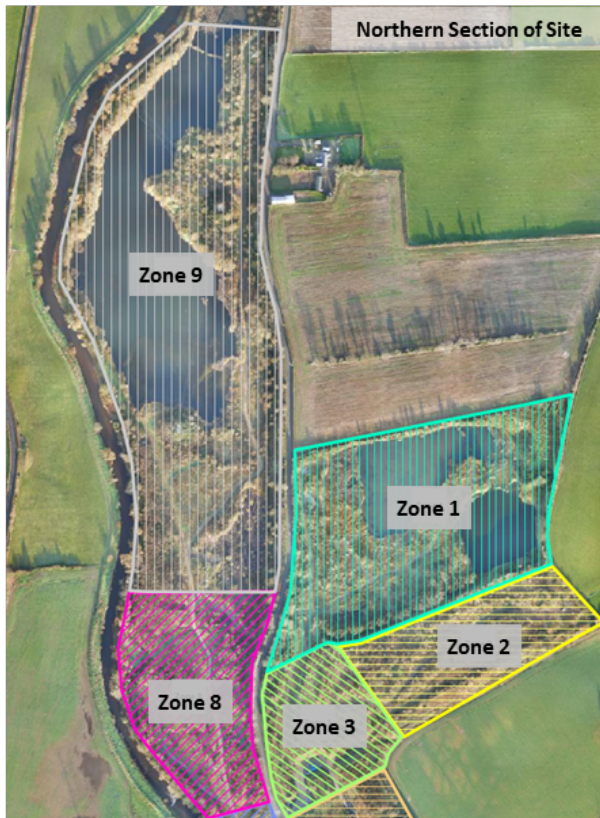
The predominant types of waste present at the site are construction and demolition waste, domestic wastes, metallic wastes, and a mixture of all of these.

An updated Detailed Quantitative Risk Assessment (DQRA) has been completed for the site and the report can be accessed and viewed on our website [here](#). Due to the size and complexity of the site, the DQRA divides the site into ten smaller sections referred to as 'waste zones'.

A description of the main type of waste identified, and the total quantity of waste estimated to be present within each of the ten waste zones, has been presented in the graphics below (figure 1 and figure 2). Further detailed information on all of the waste types present and potential contaminants of concern are presented at Appendix B (Zone Profile Summary) of the Remediation Options Appraisal Report which can be accessed on our website [here](#).

Figure 1

Mobuoy Remediation Project - Distribution and Type of Waste Present



Waste Zone	Waste Profile (Description of Waste) ⁱ	Estimated Waste Quantity (m ³) ⁱⁱⁱ
Zone 1	Domestic and mixed (domestic and Construction and Demolition)	358,907
Zone 2	Domestic and mixed (domestic and Construction and Demolition)	234,496
Zone 3	Predominantly domestic or municipal ⁱⁱ	229,415
Zone 8	Mixed organic, occasional domestic and C&D wastes	127,058
Zone 9	Construction & demolition wastes with occasional domestic/municipal waste.	229,139

Notes :

ⁱ Reference: Appendix B of the Remediation Options Appraisal Report, completed by Tetra Tech, which can be accessed on our website [here](#).

ⁱⁱ Waste profile describes the main types of waste present. Tarry waste, or evidence of tarry waste, is a small proportion of the overall waste in this zone.

ⁱⁱⁱ Using a conversion factor of 1:1, it is assumed that one cubic metre of waste is equal to one tonne

Figure 2

Mobuoy Remediation Project - Distribution and Type of Waste Present



Waste Zone	Waste Profile (Description of Waste) ⁱ	Estimated Waste Quantity (m ³) ⁱⁱⁱ
CIW Yard	<i>Predominantly domestic or municipal</i>	45,616
Zone 4	<i>Mixed waste of domestic and construction & demolition</i>	42,854
Zone 5	<i>Construction and demolition waste, with some mixed domestic Waste ⁱⁱ</i>	30,619
Zone 6	<i>Mixed construction & demolition and domestic waste</i>	161,554
Zone 7	<i>Construction and demolition waste</i>	170,786
Total Waste Volume Estimate for the Site		1,630,444

Notes:

ⁱ Reference: Appendix B of the Remediation Options Appraisal Report, completed by Tetra Tech, which can be accessed on our website [here](#).

ⁱⁱ Waste profile describes the main types of waste present. Tarry waste, or evidence of tarry waste, is a small proportion of the overall waste in this zone.

ⁱⁱⁱ Using a conversion factor of 1:1, it is assumed that one cubic metre of waste is equal to one tonne of waste

Total Waste Quantity Estimate – 1,630,444m³

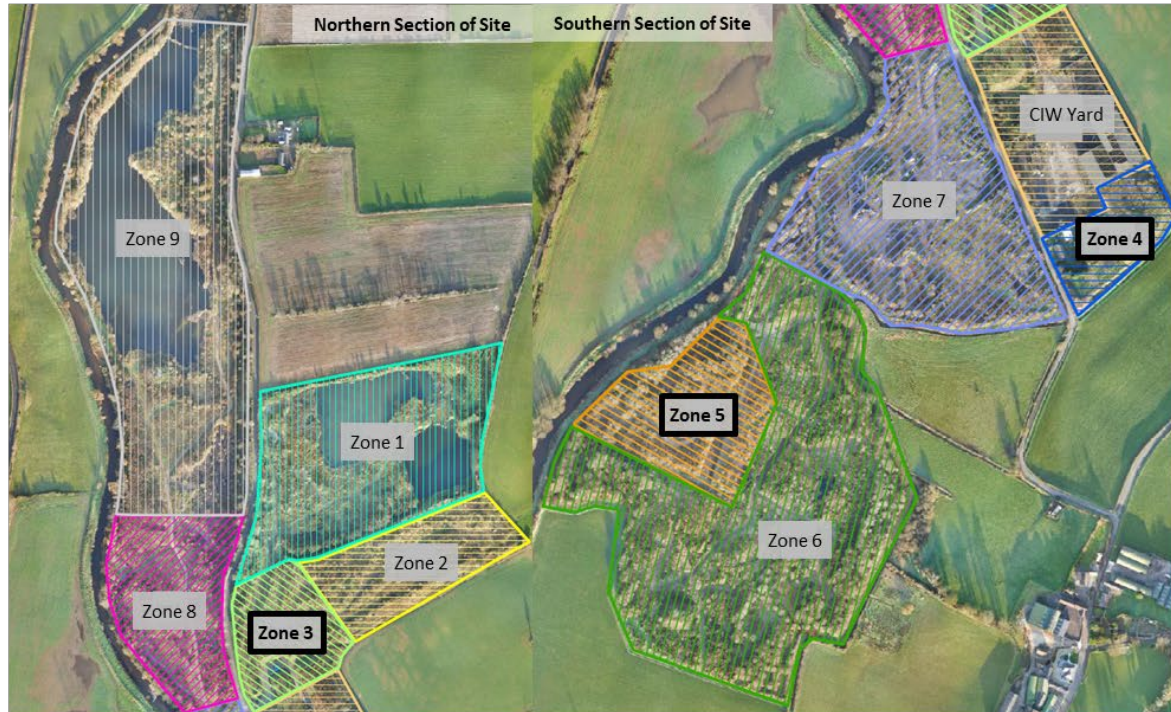
Was tarry waste identified at the Mobuoy site?

Yes, tarry waste was identified in zone 3 of the site. Historical documentary evidence, known as the Entec Report, identified two potential tarry waste deposits on the Mobuoy site. These deposits are located in Waste Zone 3 (Entec Site 10) and Waste Zone 5 (Entec Site 4). Site investigations confirmed a deposit of tarry waste in Waste Zone 3, however ground investigation across Waste Zone 5 did not encounter a deposit of tarry waste. For further detail please see graphic below (figure 3).

Detailed information on tarry waste is available in the Detailed Quantitative Risk Assessment (DQRA) that has been completed for the site which can be accessed and viewed on our website [here](#).

Figure 3

Mobuoy Remediation Project – Locations of Tarry Waste or Evidence of Tarry Waste



Waste Zone	Evidence of Tarry Waste
Zone 3	Location of Entec Tarry Waste Site 10 - Tarry waste observed during ground investigation, soil quality testing, and groundwater quality monitoring
Zone 5	Location of Entec Tarry Waste Site 4 - Tarry waste not observed during ground investigation, but low-level indicators of tarry waste detected in soil quality testing, and groundwater quality monitoring
Zone 4	Not a location of an Entec Tarry Waste Site and tarry waste not observed during ground investigation, but low-level indicators similar to that of tarry waste were detected in soil quality testing, and groundwater quality monitoring

The updated estimate of the quantity of waste at the Mobuoy site has increased significantly from the previous estimate of 635,000 – 1,165,000 tonnes. Why has NIEA's estimate of the quantity of waste increased?

It is important to note that it is the **estimate of the quantity** that has changed and not the **quantity** of waste present at the site since it closed in 2013.

The estimate of the quantity of waste has increased due to additional information becoming available through extensive additional ground investigation works. This has provided additional information on the extent and depth of waste across the site. The availability of this information has enabled a more accurate estimate to be calculated. It is **not** due to additional waste being buried at the Mobuoy site since the site was closed by NIEA in 2013. Details of all ground investigations carried out at the site is presented on the graphics below (figures 4 and 5).

Figure 4

Mobuoy Remediation Project – Details of all Ground Investigations (GI)

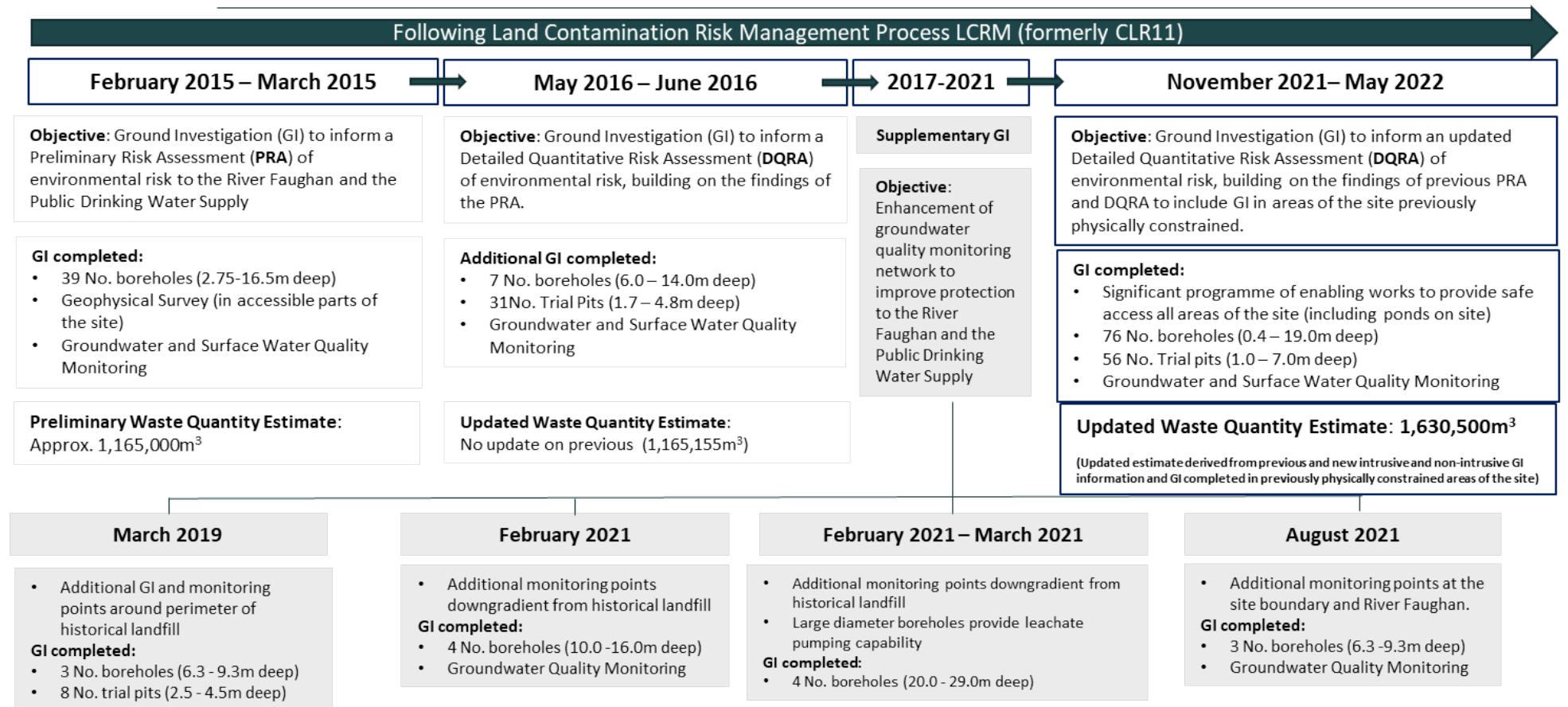
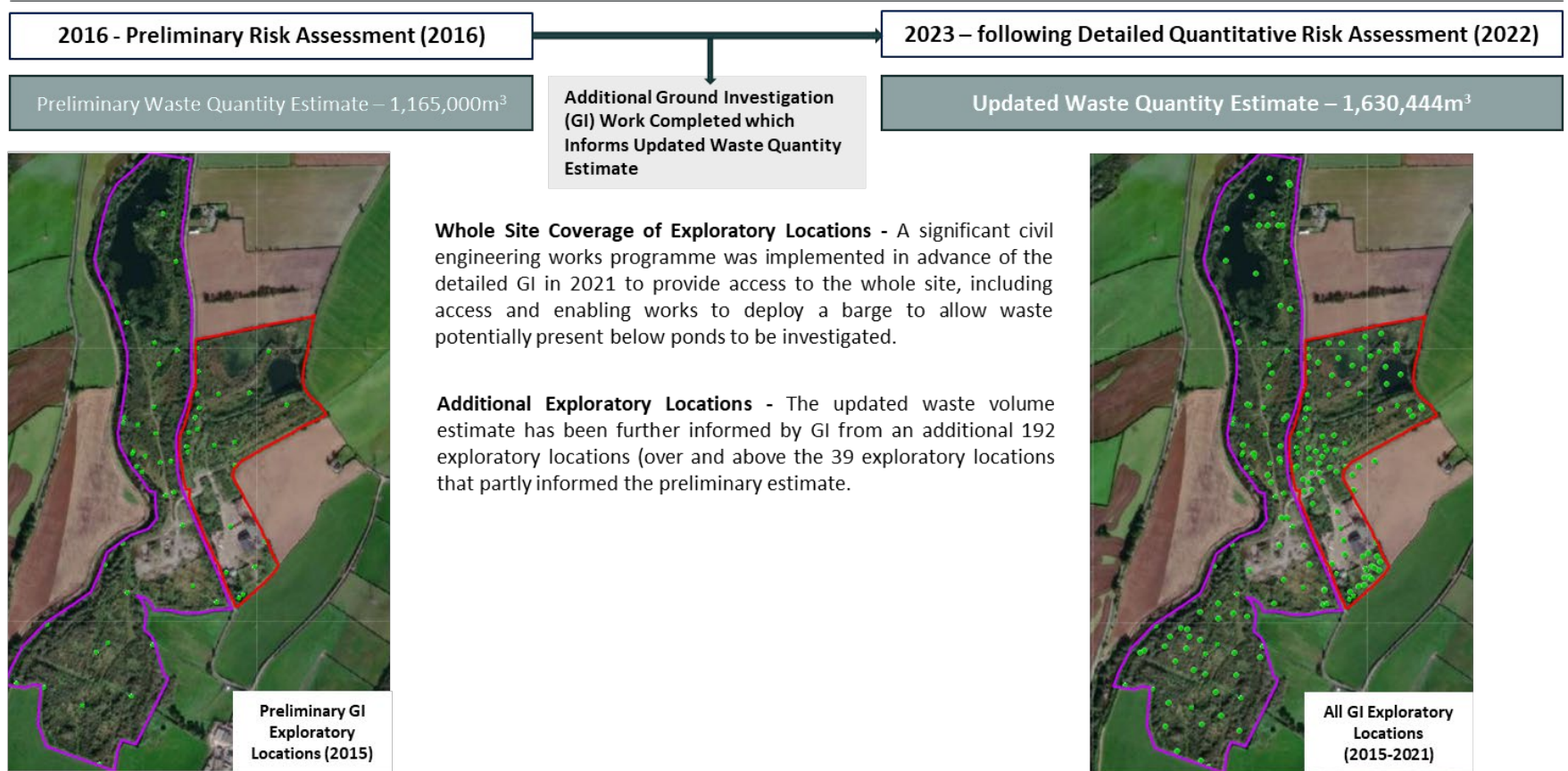


Figure 5

Mobuoy Remediation Project – Additional Ground Investigation (GI) Area Coverage



Why has accurately estimating the quantity of waste at the Mobuoy site been difficult?

At an engineered and licensed landfill site, where the waste mass is typically buried within a landfill cell which confines the waste mass in a reasonably regular shape, retrospectively calculating the quantity of waste within a regular shape, such as an engineered cell, is a relatively simple calculation, for example, like calculating the quantity of material in a box.

In contrast, retrospectively calculating the quantity of waste at an un-engineered and illegal landfill site such as Mobuoy, is considerably more difficult. This is because waste deposited at illegal landfill sites is, typically, not confined by a regularly shaped engineered cell which then results in an irregularly shaped waste mass. However, the increased number and density of ground investigation locations, combined with the assistance of digital modelling, has allowed NIEA to estimate the quantity of waste present at the site with greater accuracy.

What methodology was used to investigate waste at the Mobuoy site and evaluate the risk it poses to the water environment?

Following the procedures set out in Land Contamination Risk Management (LCRM), which provides the Regulatory framework for assessing risks from contaminated land, the assessment of a contaminated site is completed following a staged approach and is an iterative process. Detailed information on the LCRM methodology can be accessed [here](#).