

NON TECHNICAL SUMMARY

Southpark Historic Unlicensed Landfill – Risk Assessment

1.0 Site Location

Southpark is located in the Claddagh area of Galway City and covers an area of approximately 12.2 hectares. It is bounded to the north by Nimmo's Pier and the Corrib River, to the east and south by Galway Bay, and to the west by Grattan Road and Frenchpark residential area. Southpark exists as a public open space and includes several sports pitches, and a playground with associated footpaths, cycle ways and areas of hard standing. The playground area is covered by bitumen bonded aggregate hard standing. There are no plans to change the current land use or to significantly alter the layout of the site.

2.0 History of the Site

The site originally existed as mudflats that were flooded by high tides. The site was built up over time and is understood to have been used for the disposal of municipal waste until the 1960s. It is understood that some of the waste materials deposited on the site were ash/clinker waste associated with an off-site artificial fertiliser plant. The site was remediated using imported clays during the 1970s and 1980s and has since existed in its current use as an open space public amenity with playing pitches.

3.0 Types and volumes of waste

Based on the site investigations and geophysical surveys conducted, it is estimated that approximately 305,000m³ of mixed municipal and industrial wastes along with made ground, soil and stones are present at Southpark. Elevated concentrations of heavy metals were detected within the waste material at the site.

4.0 Hydrogeology and Ecology of the Site

The site is situated immediately adjacent to tidal flats associated with Galway Bay. The River Corrib flows along the northern perimeter of the site where it meets the bay. The site drains via an outfall on Nimmo's Pier which runs along the northern perimeter of the site to the River Corrib. The site is underlain by bedrock consisting of the Metagabbro and Orthogneiss suite which is classified as a Poor Aquifer. Such aquifers are generally considered to be unproductive given the low permeability. As the site is Made Ground, it is considered to have a high vulnerability for groundwater. No groundwater abstraction wells are present in the area surrounding Southpark.

Southpark lies within the M22 10K Grid as delineated by the National Parks and Wildlife Service. The park is bounded to the north, east and south by the Galway Bay Complex Special Area of Conservation (SAC - 000268) and proposed Natural Heritage Area (pNHA - 000268). To the south and east the site is bounded by the Inner Galway Bay Special Protected Area (SPA – 004031)

5.0 Risk Category of the Site

In accordance with the EPA's published code of practice, the highest risk associated with the contamination at Southpark is related to the release of leachate to the surface water drainage system and from there to the Galway Bay SAC and the Corrib Estuary transitional water body. The risk is highlighted by the high values of SPR 8 and 9 – Class A, High Risk. In addition, the linkages for SPR1 and SPR2 scored at Moderate – Class B. These four SPR linkages formed the basis of the Tier 2 risk assessment. The Tier 1 Risk Assessment indicated no linkages between the soil and the environment and/or human health, however given the wide public awareness of the issues at Southpark and the use of the park, a full assessment of the human health risk from soil contaminants was conducted.

6.0 Actual and potential environmental impacts

Several site investigations have been undertaken at the site in recent years and a large number of soil samples (116) were collected and analysed for a range of potential contaminants including metals. Four samples of groundwater and a sample of the site drainage outfall to the River Corrib were also analysed for a wide range of potential contaminants.

RPS derived site specific soil assessment criteria (SAC) using CLEA Ver1.06 for three human health receptor scenarios including young children (0-6 years of age), adolescents (10-16 years of age) and an adult working on the site on a full time basis. A small number of arsenic and lead concentrations exceeded the most stringent of the derived SACs. The arsenic and lead analytical data was subject to statistical testing using the *Chartered Institute of Environmental Health (CIEH) Statistics Calculator (May 2008)*. The statistical testing has been undertaken in accordance with the *Contaminated Land: Applications in Real Environments (CL:AIRE) Guidance on Comparing Soil Contamination Data with a Critical Concentrations*.

Statistical testing concluded that there is robust evidence to suggest that based on typical use of the site, the identified contaminant concentrations do not represent an unacceptable risk to human health.

The groundwater analytical data and the data associated with the drainage outfall was compared to Environmental Quality Standards (EQS) derived to be protective of saline under the Water Framework Directive. The contaminants concentrations in groundwater samples were generally low and only chromium and zinc were identified at elevated concentrations in the sample collected from the outfall. It is not clear whether this contamination is derived from a soil based source or is a representative of groundwater quality across the wider area. Mass flux calculations provide strong evidence to suggest that the volume of contamination entering the River Corrib and Galway Bay is significantly less than the EQS values.

Based on the soils and groundwater analytical data, for continued amenity use of the site, the risk to human health and controlled waters receptors is considered to be low and further investigation and risk assessment is not considered to be necessary at this stage. If the site was to be redeveloped or if the land use was to change significantly, the risk would need to be reassessed accordingly.

7.0 Proposed remediation including timescale

Remediation is not considered to be necessary at this stage. If the site was to be redeveloped or if the land use was to change significantly, the risk would need to be reassessed accordingly.

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