WINSAC LTD.,

RESIDENTIAL DEVELOPMENT,

BARNAGEERAGH COVE, SKERRIES

PHASE II SITE INVESTIGATION/DQRA &

LANDFILL GAS SURVEY

FINAL REPORT

VOLUME III. APPENDICES 1-10

26th February, 2019

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APPENDIX 1

EXTRACT OF DUBLIN C.C. HISTORIC LANDFILL INVENTORY 1988

'ENVIRONMENTAL RISK ASSESSMENT FOR UNREGULATED WASTE DISPOSAL SITE' WALKOVER SURVEY REPORT BY FINGAL C.C., 2009

RPS - HISTORICAL SITE REVIEW

BARNAGEERAGH LANDFILL ASSESSMENT FROM G. BAKER

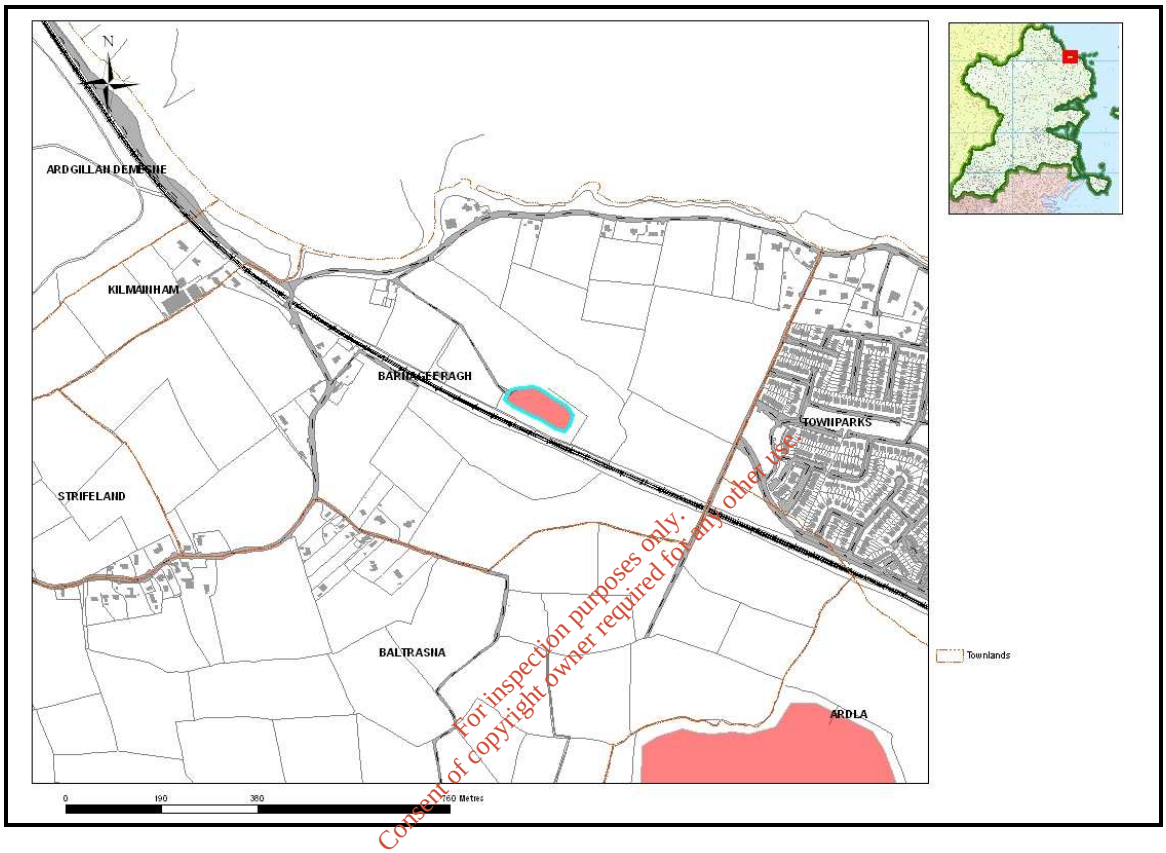
EXTRACT OF DUBLIN CITY COUNCIL LANDFILL REGISTER, 1988

about six months during the early 1960's.

5. Barnageera Map Ref. 333✓
Situated about 2¼km. North west of Skerries, on the northern side of the railway, this site became available to the Council in 1954, but most of the tipping occured between 1963 and 1983. It is believed that trade waste as well as domestic refuse was tipped here.

UNREGULATED LANDFILL SITE

SITE: **BARNAGEERA, SKERRIES**; PR1408 /**LA1**
EPA REGISTRATION NO: **S22-02655**
LOCATION: On the northern site of the railway, about 2.25km North West of Skerries.



SITE HISTRY:
The site became available to the Dublin County Council in 1954, but the most tipping occurred between years: 1963 to 1983. It is believed that trade waste as well as domestic refuse was tipped there.
Currently on the site the Skerries MWWTP is located.

The site is classified as LA1 - a historic unregulated waste disposal site (closed landfills) operated by a Local Authority without a waste licence under the Act in the period between 15th July 1977 and prior to coming into operation of the Waste Management Licensing Regulations, 1997.

SITE FOODPRINT: based on interviews and aerial photos of the area and queries shape from historic map from 1935

SIZE OF THE SITE: **6,382m2 = 0.63ha** (according to the map)

WASTE QUANTITY: unknown

Assumption of average thickness of waste body = 1m; estimated waste density: 0.6 (the waste are not compacted)

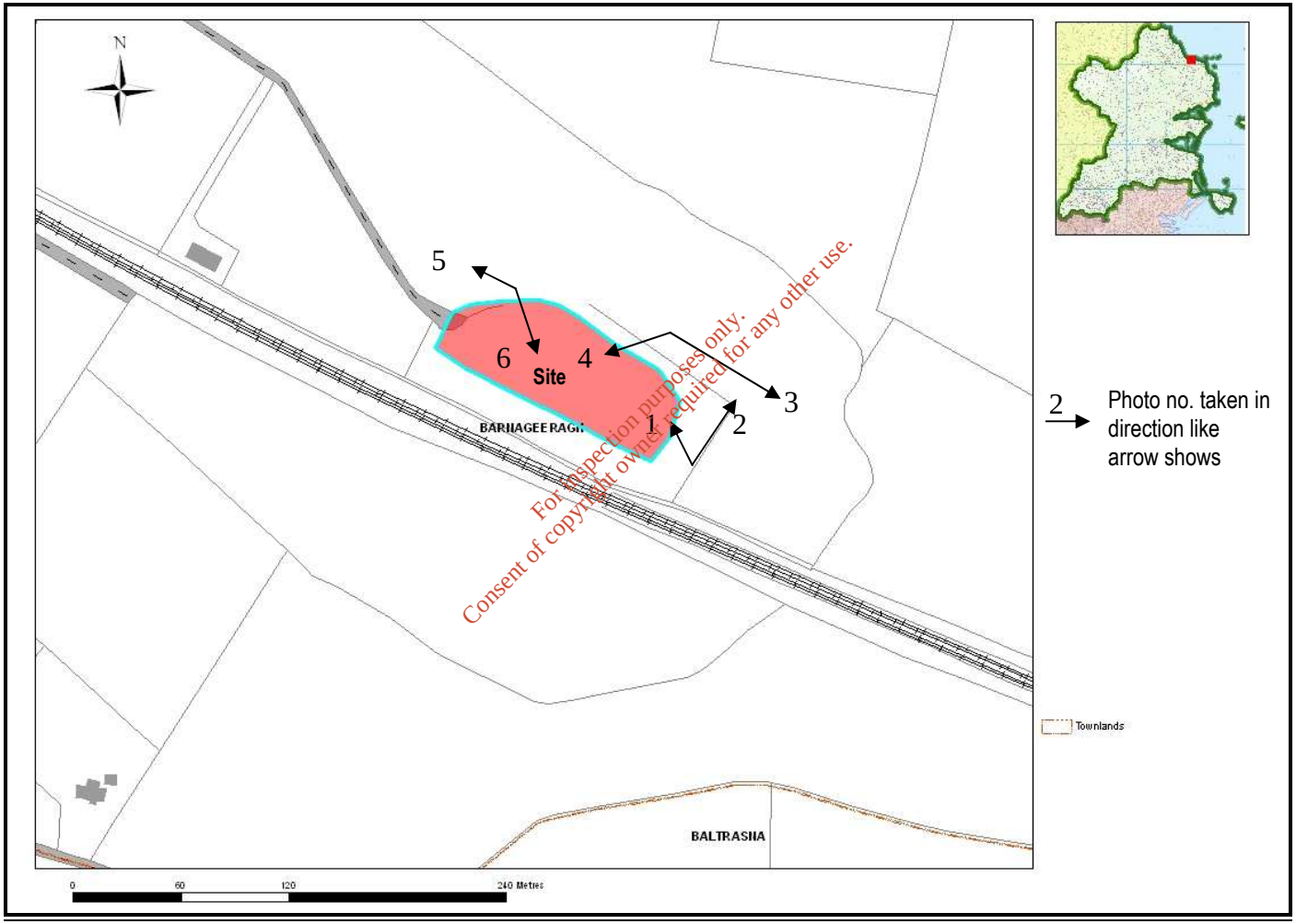
TYPE OF WASTE: DOMESTIC, MUNICIPAL - confirm by interviewer

CURRENT SITUATION ON THE SITE:
At the present the site is close. Partly overgrown by vegetation, on the rest of the site the Skerries Waste Water Treatment Plant is located. Access to the site is protected by the metal fence and monitored as a part of WWTP.
There are: railway track, a new shopping centre, an estate and a school two in directly site surrounding.

Site was visited – on the 30/07/2009 by Eleanor Scally and Marta Zmyslowska
Documentation form walkover – attached

Data of report: 05/08/2009
Report done by: Marta Zmyslowska

SKERRIES, PR1408 / S22-06655 – photo documentation from the site / photos taken on the 30/07/2009



WALKOVER

Photo no. 1

Photo no 2

WALKOVER

Photo no. 3

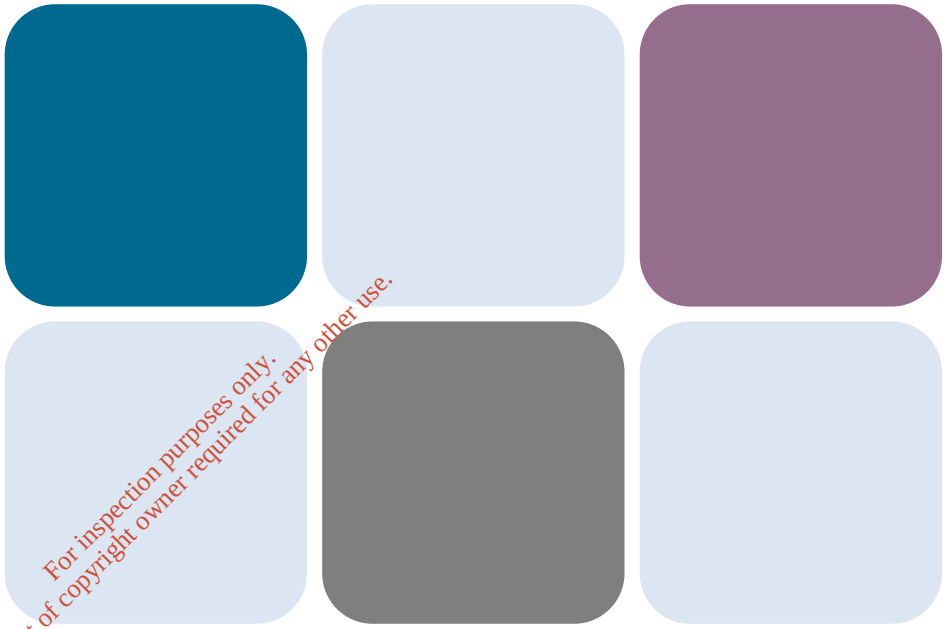
Photo no. 4

WALKOVER

Photo no. 4

Photo no. 5

RPS



Barnageeragh Site Historical Review

Gerry Baker (23/05/2017)

Google Maps – Feb 2016

Historical Landfill Outline

Bing Maps - Latest

OSI (Latest)

Google Maps – Dec 2013

Google Maps – May 2009

Google Maps 2008

Google Maps – April 2006

Google Maps 2005

RPS

OSI 2005

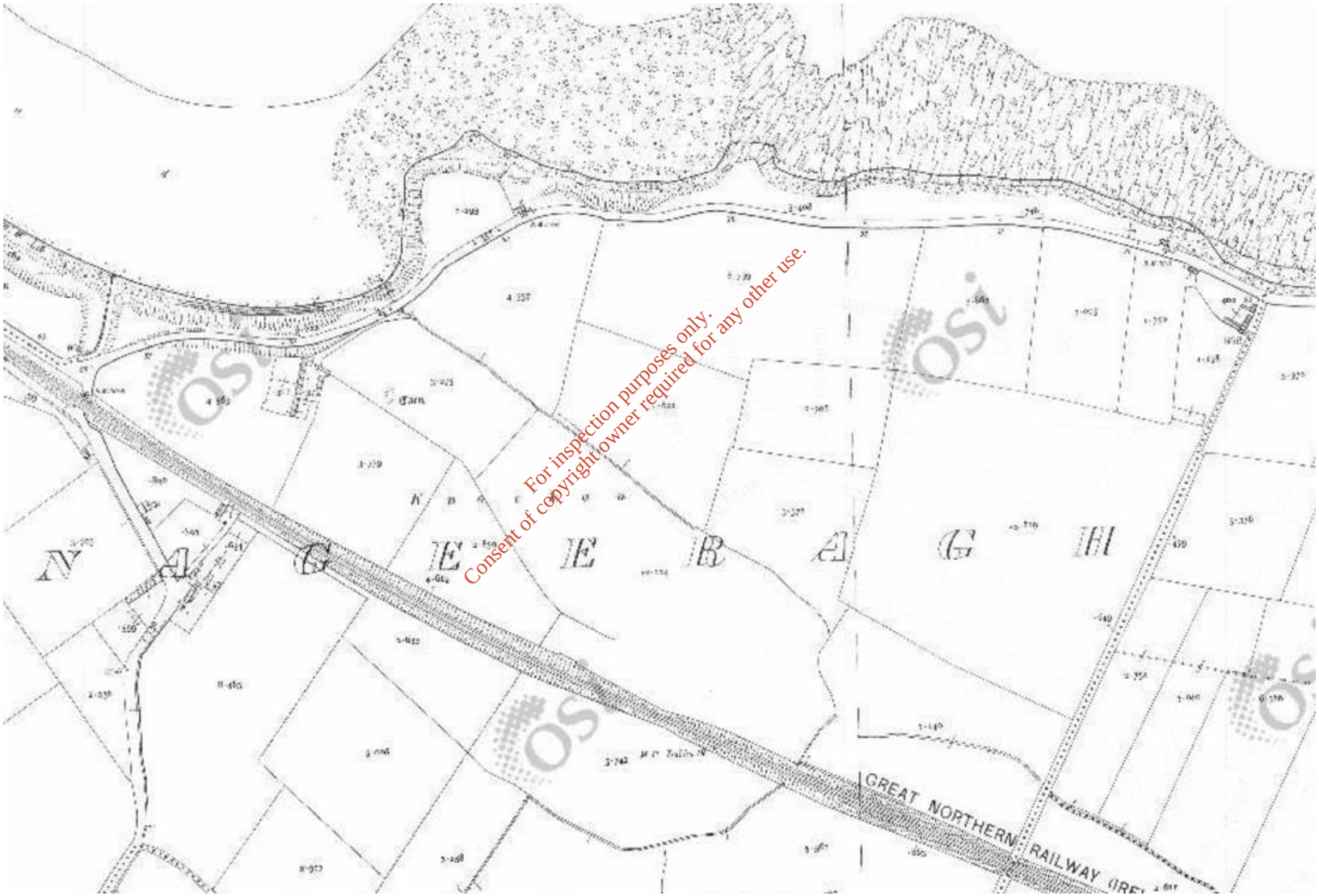
RPS

OSI - 2000

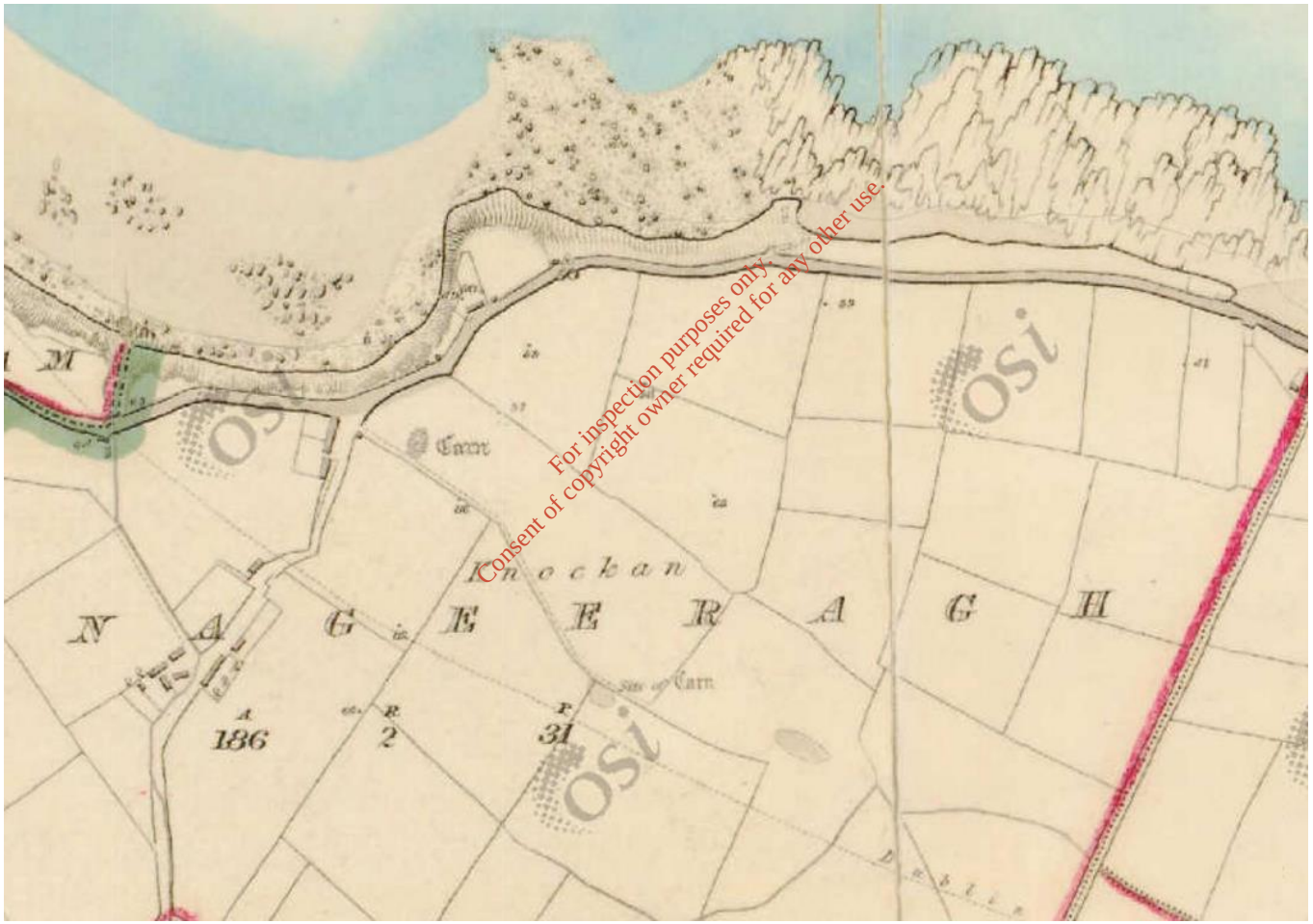
OSI - 1995

RPS

Historic 25” – 1888-1913



Historic 6” – 1837-1842



Memorandum

To:	Mortimer Loftus	**From:**	Gerry Baker
Cc:	Brian Reynolds, James Walls, Gilbert Power	**Date:**	23/May/2017
Project:	Ballynageerah Landfill Site	**Email:**	Gerry.baker@rpsgroup.com
Project Number:		**File Reference:**	
Subject:	Propose Scope of assessment for Ballynageeragh Landfill Site		

Monty,

Following the site visit today (23/05/2017) to the site at Barnageeragh please find below our recommendation in terms of the scope of assessment.

A review of the historical aerial photos and maps shows the waste body to the south east of the site which is identifiable back to the 1995 aerial photos. The original waste body can probably be well defined using these images. However from our visit on site today it appears that the material has been moved around quite a bit so the current extent cannot assumed to be the same as the historical imagery.

In terms of the investigation and assessment of the material this should progress in a phased manner. In the interest of public safety we recommend that any immediate risks from gas migration to the site are identified. We recommend that a landfill gas survey is completed within each of the houses on the construction site. A landfill gas meter can be used to monitor for standard gases such as methane, carbon dioxide, oxygen and hydrogen sulphide.

Any existing boreholes available on site should also be monitored using the gas meter.

In the absence of any existing boreholes we recommend that some shallow boreholes/probes are installed to approximately 2m and installed as gas monitoring boreholes in accordance with BS-ISO 10175 (Investigation of potentially contaminated sites). The borehole installation can be completed using a window sampler which can be readily mobilised to site and small enough to located holes within the site. We recommend that at least six holes are installed across waste body and on the development site boundary adjacent the waste.

We recommend that landfill gas is then measured within these holes after 1 week and weekly monitoring continues for a period of one month.

Further to the immediate assessment we recommend that a sampling plan is developed to characterise the waste and soil stockpiles on site. We recommend that all the waste stockpiles and the soil stockpiles are considered for sampling as there may have been some blending of materials during site clearance and excavation. The sampling should follow best practice such as BS-ISO 10381-8 – Guidance on Sampling Stockpiles (attached for information). A representative number of composite samples should be collected to provide adequate coverage across the waste. The waste material should be analysed for the full Waste Acceptance Criteria (WAC) and Waste Characterisation suites of analysis.

Further assessment can then be considered following the development of a Conceptual Site Model (CSM) for the site which considers both the original waste body and the current state. Any further investigations should follow the BS10175 guidelines. The initial remedial strategy for the site should be developed following the standard risk assessment process as outlined in the following guidelines:

- *EPA Guidance on the Management of Contaminated Land and Groundwater at EPA Licenced Sites* (2013).
- *EA Model Procedures for the Management of Contaminated Land* (CLR11, 2004)

A geotechnical assessment should also be considered to determine whether any slope stability issues arise in relation to the presence of waste at the toe of the eastern embankment for the site.

We trust the above meets your requirements but please do not hesitate to contact us if you require any further information.

Best Regards,

Gerry Baker PGeo, EurGeol, MSc, BA
Principal Hydrogeologist
RPS