



Waste Licence Application Form

EPA Ref. N^o:

(Office use only)

*This document does not purport to be and should not be considered
a legal interpretation of the provisions and requirements of the
Waste Management Act 1996, as amended.*

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Tracking Amendments to Application Form

Version No.	Date	Amendment since previous version	Reason
V.1	04/09/2012	Amended various sections to take account of the requirements of the European Communities (Waste Directive) Regulations 2011.	To accurately reflect the new requirements in the Regulations which transpose the Waste Framework Directive 2008/98/EC.
V.1	04/09/2012	Amended Section E.5 Noise Emissions, I.7 Noise Impact, Table E.5.(i) and Table I.7.(i) to take account of the document Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4) (2012).	To accurately reflect the changes in the document Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4) (2012).
V.1	04/09/2012	Amended Section B.3 to take account of the requirements of European Union (Environmental Impact Assessment) (Integrated Pollution Prevention and Control) Regulations 2012 (SI No 282 of 2012); in terms of Environmental Impact Assessment under the Environmental Impact Assessment Directive (Council Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment). Update references to new legislation	To accurately reflect the European Union (Environmental Impact Assessment) (Integrated Pollution Prevention and Control) Regulations 2012 (SI No 282 of 2012) requirements. To reflect changes in legislation



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Environmental Protection Agency
Application for a Waste Licence

WASTE MANAGEMENT ACT 1996, as amended

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INTRODUCTION

A valid application must contain the information prescribed in the Waste Management (Licensing) Regulations 2004 (SI No. 395 of 2004). **The applicant is strongly advised to read the *Application Guidance Notes for Waste Licensing*, available from the EPA.**

The applicant must conform to the format set out in the guidance notes for applications. Each page of the completed application form must be numbered, e.g. *page 5 of 45*, etc. Also duplicated pages from the application form should be uniquely numbered, e.g. *page 5(i) of 45*, etc. **The basic information should for the most part be supplied in the spaces given in application form** and any supporting documentation should be supplied as attachments, as specified. Consistent measurement units must be used throughout.

The applicant should note that the application form has been structured so that it requires information to be presented in an order of progressive detail.

When it is found necessary, additional information may be provided on supplementary attachments which should be clearly cross referenced with the relevant sections in the main document.

While all sections in the application form may not be relevant to the activity concerned, the applicant should look carefully through all aspects of the form and provide the required information, in the greatest possible detail.

All maps/drawings/plans must be no larger than A3 size and scaled appropriately such that they are clearly legible. In exceptional circumstances, where A3 is considered inadequate, a larger size may be requested by the Agency.

Information supplied in this application, including supporting documentation will be put on public display and open to inspection by any person. Should the applicant consider information to be confidential, this information should be submitted in a separate enclosure bearing the legend “ In the event that this information is deemed not to be held as confidential, it must be returned to”. In the event that information is considered to be of a confidential nature, then the nature of this information and the reasons why it is considered confidential (with reference to the “Access to Information on the Environment” Regulations) should be stated in the Application Form, where relevant.

It should be noted that it will not be possible to process or determine the application until the required documents have been provided in sufficient detail and to a satisfactory standard.

CHECKLIST

Articles 12 and 13 of the Waste Management (Licensing) Regulations, 2004 (S.I. No. 395 of 2004) set out the information which must, in all cases, accompany a waste licence application. In order to ensure that the application fully complies with the legal requirements of Articles 12 and 13 of the 2004 Regulations, all applicants should **complete** the following.

In each case, refer to the attachment number(s) of your application which contain(s) the information requested in the appropriate sub-article.

Article 12(1) In the case of an application for a waste licence, the application shall -

- (a) give the name, address and, where applicable, any telephone number and telefax of the applicant (and, if different, the operator of the facility concerned), the address to which correspondence relating to the application should be sent and if the applicant or operator is a body corporate, the address of its registered office or principal office,

LOCATION	Section A.1	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

- (b) give the name of the planning authority in whose functional area the relevant activity is or will be carried on,

LOCATION	Section A.3	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

- (c) in the case of a discharge of any trade effluent or other matter (other than domestic sewage or storm water) to a sewer of a sanitary authority, give the name of the sanitary authority in which the sewer is vested or by which it is controlled,

LOCATION	Section A.4	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

- (d) give the location or postal address (including where appropriate, the name of the townland or townlands) and the National Grid reference of the facility or premises to which the application relates,

LOCATION	Section A.2	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

- (e) describe the nature of the facility or premises concerned, including the proposed capacity of the facility or premises, and in the case of application in respect of a landfill of waste, the requirements specified in Annex 1 of the Landfill Directive,

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LOCATION	Section B.7, Section D, Attachment D	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(f) specify the class or classes of activity concerned, in accordance with the Third and Fourth Schedules of the Act¹ and in the case of an application in respect of the landfill of waste, specify the class of landfill in accordance with Article 4 of the Landfill Directive,

LOCATION	Section B.7.1, Table B.7.1, Attachment B.7	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(g) specify, by reference to the relevant European Waste Catalogue codes as presented by Commission Decision 2000/532/EC of 3 May 2000, the quantity and nature of the waste or wastes which will be treated, recovered or disposed of,

LOCATION	Section H, Table H.4(i) and Table H.4(ii)	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(h) specify the raw and ancillary materials, substances, preparations, fuels and energy which will be utilised in or produced by the activity,

LOCATION	Section G, Table G.1	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(i) describe the plant, methods, processes, ancillary processes, abatement, recovery and treatment systems and operating procedures for the activity,

LOCATION	Section D, Attachment D1- D6	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(j) provide information for the purpose of enabling the Agency to make a determination in relation to the matters specified in paragraphs (a) to (g) of section 40(4) of the Act,

LOCATION	Section L.1, Attachment L.1	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

¹ Note that the Third and Fourth Schedules of the Act were amended by the European Communities (Waste Directive) Regulations, 2011.

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- (k) give particulars of the source, location, nature, composition, quantity, level and rate of emissions arising from the activity and, where relevant, the period or periods during which such emissions are made or are to be made,

LOCATION	Section E, Attachment E.1- E.6	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

- (l) give details and an assessment of the effects, of any existing or proposed emissions on the environment, including any environmental medium other than those into which the emissions are, or are to be made and of proposed measures to prevent or eliminate or, where that is not practicable, to limit or abate such emissions,

LOCATION	Section I, Attachment 1.1 -I.7	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

- (m) identify monitoring and sampling points and indicate proposed arrangements for the monitoring of emissions and the environmental consequences of any such emissions,

LOCATION	Section F, Attachment F.1 - F.9	
CHECKED	Applicant <input type="checkbox"/>	Official <input type="checkbox"/>

- (n) describe any proposed arrangements for the prevention, minimisation and recovery of waste arising from the activity concerned,

LOCATION	Section H	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

- (o) describe any proposed arrangements for the off-site treatment or disposal of solid or liquid wastes,

LOCATION	Section D.1, Section B.4	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

- (p) describe the existing or proposed measures, including emergency procedures, to prevent unauthorised or unexpected emissions and minimise the impact on the environment of any such emission,

LOCATION	Section J, Attachment J	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

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(q) describe the proposed measures for the closure, restoration, remediation or aftercare of the facility concerned, after the cessation of the activity in question,

LOCATION	Section K, Attachment K	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(r) in the case of an application in respect of the landfilling of waste, give particulars of –

(i) such financial provision as is proposed to be made by the applicant, having regard to the provisions of Articles (7)(i) and (8)(a)(iv) of the Landfill Directive and section 53(1) of the Act, and

LOCATION	Section L.2, Attachment L.2	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(ii) such charges as are proposed or made, having regard to the requirements of section 53A of the Act,

LOCATION	Section L.1, Attachment L.1	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(s) state whether the activity is for the purposes of an establishment to which the European Communities (Control of Major Accident Hazards involving Dangerous Substances) Regulations, 2000 (S.I. No. 476 of 2000) apply,

LOCATION	Section B.8, Attachment B.8	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(t) in the case of an activity which gives rise or could give rise to an emission into an aquifer containing the List I and II substances specified in the Annex to Council Directive 80/68/EEC of 17 December 1979, describe the existing or proposed arrangements necessary to give effect to Articles 3,4,5,6,7,8,9 and 10 of the aforementioned Council Directive,

LOCATION	Section I.4 and Section I.5. Attachment 1.4 and 1.5	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

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(tbis) describe in outline the main alternatives, if any, to the proposals contained in the application which were studied by the applicant,

LOCATION	Section D.2, Attachment D.2	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(u) include a non-technical summary of information provided in relation to the matters specified in paragraphs (a) to (t) of this sub-article,

LOCATION	Section A, Attachment A.1	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(v) describe how the waste hierarchy in section 21A of the Act is applied.

LOCATION	Section L.3, Attachment L.3	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

Article 12(4) Without prejudice to Article 13(1) and (2), an application for a licence shall be accompanied by -

(a) a copy of the relevant page of the newspaper(s) in which the notice in accordance with article 6 has been published,

LOCATION	Section B.6, Attachment B.6	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(b) a copy of the text of the notice or notices erected or fixed in accordance with article 7,

LOCATION	Section B.6, Attachment B.6	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(c) where appropriate, a copy of the notice given to a local planning under article 9,

LOCATION	Section B.3, Attachment B.3	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(d) a copy of such plans, (appropriately scaled and no larger than A3 size), including a site plan or plans and location map or maps and

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such other particulars, reports and supporting documentation as are necessary to identify and describe, as appropriate -
 (i) the position of the notice in accordance with article 7,

LOCATION	Section B.2, Attachment B.2 (Drawing DG1003)	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(ii) the point or points from which emissions are made or are to be made, and

LOCATION	Section E, Attachment E (Drawings DG1010 and DG1011)	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(iii) the point or points at which monitoring and sampling are undertaken or are to be undertaken,

LOCATION	Section F, Attachment F (Drawings DG1012a and DG1012b)	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

(e) such fee as is appropriate having regard to the provisions of articles 40 and 41.

INCLUDED Y/N	Y	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

Article 12(5)(a) & (b) An application shall comprise 1 signed original of the application and 2 copies in hardcopy format plus 2 copies of all files in electronic searchable PDF format on CD-Rom.

HARDCOPIES PROVIDED Y/N	Y	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

CD OF PDF FILES PROVIDED? Y/N	Y	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

Article 13 Where a development requires an Environmental Impact Assessment to be carried out, 1 signed original and 2 copies in hardcopy format of the environmental impact statement plus 16 copies in electronic searchable PDF format on CD-ROM should accompany this application.

EIA REQUIRED ? Y/N	Y	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>
3 HARD COPIES OF EIS INCLUDED ? Y/N	Y	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>
16 CD versions of EIS, as PDF files, PROVIDED? Y/N	Y	
CHECKED	Applicant <input checked="" type="checkbox"/>	Official <input type="checkbox"/>

PROCEDURES

It is recommended that pre-application consultations with the Agency are undertaken before a formal submission of the waste licence application.

The procedure for making and processing of applications for waste licences and for the processing of reviews of such licences, appear in the Waste Management (Licensing) Regulations 2004 (S.I. No. 395 of 2004) and are summarised below. The application fees that shall accompany an application are listed in the Second Schedule to the Regulations.

Prior to submitting an application the applicant must publish in a local newspaper, and erect on site, a notice of intention to apply. An applicant, other than a local authority in whose functional area the development is located, must also notify the Local Planning Authority, in writing, of their intention to apply.

An application for a licence must be submitted on the appropriate form (available from the Agency) with the correct fee, and should contain relevant supporting documentation as attachments. The application should be based on responses to the form, supporting written text and the appropriate use of tables and drawings. Where point source emissions occur, a system of unique reference numbers should be used to denote each emission point. These should be simple, logical and traceable throughout the application.

The application form is divided into a number of sections of related information. The purpose of these divisions being to facilitate both the applicant and the Agency in the provision of the information and its assessment. Attachments should be clearly numbered, titled and paginated and must contain the required information as set out in the application form. Additional attachments may be included to supply any further information supporting the application. Any references made should be supported by a bibliography.

All questions should be answered. No waste management facility is exactly the same and hence each application will require different information. It is therefore possible that some of the sections of this application form may not be relevant to the activity concerned. **Where information is requested in the application form, which is not relevant to the application, the words “not applicable” should be clearly written on the form. The abbreviation “N/A” should not be used.**

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Additional information may need to be submitted beyond that which is explicitly requested on this form. Any references made should be supported by a bibliography. The Agency may request further information if it considers that its provision is material to the assessment of the application. Advice should be sought from the Agency where there is doubt about the type of information required or the level of detail.

Information supplied in this application, including supporting documentation, will be put on public display and be open to inspection by any person. **Should the applicant consider information to be confidential, then the nature of this information and the reasons why it is considered confidential should be clearly stated in an attachment to the Application Form. This information should be submitted in a separate enclosure bearing the legend “In the event that this information is deemed not to be held as confidential, it must be returned to (representative of the applicant)”.**

Applicants should be aware that a contravention of the conditions of a waste licence is an offence under Section 39 of the Waste Management Act 1996, as amended.

The provision of information in an application for a waste licence which is false or misleading is an offence under Section 45 of the Waste Management Act 1996, as amended.

Note: Drawings. The following guidelines are included to assist applicants:

- *All drawings submitted should be titled and dated.*
- *They should have a **unique reference number** and should be signed by a clearly identifiable person.*
- *They should indicate a scale and the **direction of north**.*
- *All drawings should, generally, be to a scale of between 1:20 to 1:500, depending upon the degree of detail needed to be shown and the size of the facility. Drawings delineating the boundary can be to a smaller scale of between 1:1000 to 1:10560, but must clearly and accurately present the required level of detail. Drawings showing the site location can be to a scale of between 1:50 000 to 1:126 720. All drawings should, however, be A3 or less and of an appropriate scale such that they are clearly legible. Provide legends on all drawings and maps as appropriate.*

The provision of information in an application for a waste licence, which is false or misleading, is an offence under Section 45 of the Acts.

SECTION A NON-TECHNICAL SUMMARY

A Non-Technical Summary is to be submitted. The summary should include information on those aspects outlined in the Guidance Note and must comply with the requirements of Article 12 (1) (u) of the Waste Management (Licensing) Regulations, S.I. 395 of 2004.

The Non-Technical Summary should form **Attachment A.1**.

Attachment A.1 Non-Technical Summary

A.1 Nature of the Activity

The Minister for Agriculture, Food and the Marine is applying for a Waste Licence to regularise and remediate the East Tip site located at Haulbowline Island, Co. Cork. Cork County Council has been appointed as the Agent to for the Minister in matters pertaining to the regularisation of the site .

The East Tip consists of 9 ha of reclaimed land located on the eastern side of Haulbowline Island which in turn is located in Cork Harbour, between Ringaskiddy and Cobh. The land was reclaimed using processed slag and other wastes from a steelworks site which formerly operated on the island. The location of the site is shown in **Figure 1**.

Figure 1 Site Location



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The site is owned by the Minister for Agriculture, Food and the Marine. This project arose from a European Court of Justice Ruling (Case C494/01, Commission v Ireland (2005)) and subsequent Letter of Formal Notice issued in 2010, which requires the State to remediate the site to ensure compliance with the EU Waste Framework Directive.

In 2011 following meetings with the European Commission, Ireland agreed that an application for a Waste Licence would be made to the Environmental Protection Agency (EPA) to address the deposition of waste, including hazardous waste elements, on Haulbowline Island, and oversee any necessary remedial action required. Cork County Council was appointed as an Agent by the Minister of Agriculture, Food and the Marine to manage the overall remediation and regularisation process.

Additional to the remediation of the East Tip is the proposal to develop the site into a public amenity thereby giving something of tangible value back to the local community. **Figure 2** illustrates a photomontage of the East Tip site after remediation and during the End use, Maintenance and Aftercare phase.

Figure 2 Photomontage of the East Tip Post Remediation (End use, Maintenance and Aftercare phase)



An Environmental Impact Statement (EIS), which outlines the project description, the potential impacts and proposed mitigation measures for the remediation of the site has been prepared in support of this application and in line with European and national legislation. An Appropriate Assessment Screening and Natura Impact Statement (NIS) have also been prepared and is contained within Volume 4 of the EIS: AA Screening and NIS.

A.1.2 Class of Activity

This application proposes to remediate the existing East Tip landfill by constructing a Perimeter Engineered Structure (PES) around the perimeter of the site, an engineered cap and surface water drainage system on the surface of the remediated site.

The **Principal Activity** applied for is Class D1 of the Third Schedule of the Waste Management Act 1996 as amended namely:

Class D1. Deposit into or onto land (e.g. landfill, etc.)

Other activities proposed during the 'Construction' phase **and** End use, Maintenance and Aftercare' phase are covered under the following classes of activities as per the Third and Fourth Schedule of the Waste Management Act 1996 as amended:

Third Schedule (Waste Disposal Activities)

Class D4. Surface impoundment (e.g placement of liquid or sludgy discards into pits, ponds or lagoons, etc.)

Class D7. Release to seas/oceans including sea-bed insertion

Class D13. Blending or mixing prior to submission to any of the operations numbered D 1 to D 12 (if there is no other D code appropriate, this can include preliminary operations prior to disposal including pre-processing such as, amongst others, sorting, crushing, compacting, pelletising, drying, shredding, conditioning or separating prior to submission to any of the operations numbered D1 to D12).

Class D15. Storage pending any of the operations numbered D1 to D14 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).

Fourth Schedule (Waste Recovery Activities)

Class R4. Recycling/reclamation of metals and metal compounds

Class R5. Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials

Class R12. Exchange of waste for submission to any of the operations numbered R1 to R11 (if there is no other R code appropriate, this can include preliminary operations prior to recovery including pre-processing such as, amongst others, dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending or mixing prior to submission to any of the operations numbered R1 to R11).

Class R13. Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced)"

A.1.3 Quantity and Nature of Waste

It should be noted that this application is for the remediation of existing waste on site. It is not proposed to accept any further waste for disposal at the East Tip site. Only material suitable for the remediation, Enduse, Maintenance and Aftercare will be imported to the site. Material imported will be fit for use and sourced from appropriate sites.

The proposed EPA waste licence application relates to an area of 11.8 hectares which covers the East Tip and a portion of the foreshore. The East Tip is an area of land (approximately 9 hectares) reclaimed from the sea by infilling with processing waste. It is thought that the

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deposition of steel making waste on the East Tip of Haulbowline Island has been taking place since the 1960's (KTC, 1995) but intensified in the late 1970's (EA, 2002) and continued until 2001.

In 2008, WYG estimated the approximate percentage composition of the East Tip waste material. Applying both the average bulk density for material in specified in the DQRA (Appendix A of the EIS) and conversion factors specified in the Waste Facility Permit and Registration Regulations Guidance Manual 2012 coupled with calculated conversion factors for scrap metal (5t/m³) and slag (3t/m³), it is estimated that there is between 1.3 – 1.7 million tonnes of waste deposited at the East Tip (based on approximate estimate of 650,000m³ deposited at the site). For the purposes of this application the maximum extent of waste within the East Tip is assumed (1.7 million tonnes).

Waste Type	Estimated percentage (m ³) ^{Note 1}	m ³	Conversion factor ^{Note 2}	Tonnes
Refractories	15.28%	99,320	1.5	148,980
Slag	63.52%	412,880	3 ^{Note 3}	1,238,640
Topsoil	0.01%	65	1.5	97.5
Refuse	0.05%	325	0.2	65
C&D waste	0.05%	325	1.5	487.5
Furnace dust	0.05%	325	1.5	487.5
Sludge	0.99%	6,435	1	6,435
Scrap metal	6.65%	43,225	5 ^{Note 4}	216,125
Millscale	13.40%	87,100	1.5	130,650
	100.00%	650,000		1,741,968

Note 1: Source WYG, 2008

Note 2: Source Waste Facility Permit and Registration Regulation Guidelines, EPA 2012

Note 3: Conversion factor based on relative density at specific gravity calculation

Note 4: Conversion factor based on average densities received from contractors

Approximately 9% of waste present on site is classified as hazardous (flue dust and sludge) and the remaining 91% is classified as non hazardous. The majority of waste on site is slag (based on weight) which is classified as non-hazardous material (71%).

Of the slag material present (estimated 1.2 million tonnes/ 412,880 m³) it is proposed to recover approximately 216,000 tonnes (72,000m³) for reuse in the PES and drainage layer. However, for the purposes of this EIS, the worst case scenario has assessed in terms of material imported to site i.e. it is assumed that all material must be imported to facilitate the construction of these elements and that the material shall be imported by road. Any re-use of the slag material would be subject to the contractor being able to demonstrate the material meets the requirements of the remediation project. The reuse of slag material will reduce the quantities of materials required to be imported and therefore the traffic impact on the surrounding community. However it should be noted that the Traffic Impact Assessment has assumed a 'worst case' scenario, which assesses the importation of all materials by road and no reuse of slag material in the proposed remediation solution.

It is also proposed to recover approximately 10,000 tonnes of scrap metal from the site by initially removing scrap metal from the surface of the site and subsequently removing scrap metal from the surface of the re-profiled site. All scrap metal recovered will be sent off site for further recovery/recycling at an authorised facility.

Furthermore, it is proposed to potentially recover a stockpile of millscale material (600 tonnes/400m³), subject to suitable reuse/recovery options being available, market value and demand at the time of the proposed works.

A.1.4 Raw Materials, Substances, Preparations and Energy

Raw materials will be imported to the East Tip for the following during the construction stage:-

- The engineered capping system, which will be required to cover approximately 9 hectares of waste and associated surface water drainage works and anchor trenches.
- The PES, which will extend around the coastal perimeter of the site for approximately 900m.
- The PES at western boundary of the site – approx 350m long.
- Landscaping works.
- Road and pathway improvements.
- Powering machinery.
- Dust suppression.
- Washing, cleaning and decontamination shower facilities.

Specific raw materials and estimated quantities required to carry out remediation of the East Tip will be determined during the detailed design stage of the project. The Contractor will be required to ensure that all materials are sourced in accordance with the proposed Environmental Management Plan for the works. Raw materials required to construct the PES, rock armour, capping and drainage system include stone, rocks, clay, topsoil, subsoil, geosynthetics and inert fill material. Water will also be required to serve the onsite welfare facilities and for dust suppression during construction activities. Fuel will be required for vehicles.

It is also proposed to reuse slag material for construction of the PES and for use as part of the drainage system, which would reduce the quantity of virgin material imported to the site. However, the reuse of slag material will be subject to the material meeting the required testing and grading requirements.

Electricity will be provided to the site during construction by a connection to 10Kv electrical line located at the site entrance. Portable lighting units will be used during construction and diesel generators will be used to provide power.

No raw materials or fuels will be required during the End use, Maintenance and Aftercare phase, other than these required for routine maintenance such as grass cutting, landscaping etc.. The existing water supply which currently serves the site foreman's office will be retained.

A.1.5 Management of the Facility

As Agent for the Minister for Agriculture, Food and Marine, Cork County Council will appoint a suitably qualified consultant to carry out the detailed design of the remediation proposal. Upon completion, a suitably qualified contractor will be appointed to carry out construction works. It will be necessary for the contractor to appoint an environmental officer tasked with environmental responsibilities such as ensuring all mitigation and monitoring measures specified in the waste licence, planning and foreshore consents are adhered to. Cork County Council will appoint an Environmental Clerk of Works tasked with ensuring the contractor carries out necessary environmental duties, reporting to Cork County Council and liaising with statutory authorities as necessary.

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The Contractor will be required to develop a Construction Environmental Management Plan for the construction phase of works which must be adhered to throughout the works.

It is estimated that the construction programme will take approximately 18 months to complete. Normal working hours for the majority of the programme will be 7:00am – 7:00pm Monday to Friday and 9:00am to 4:00pm on Saturday. However construction of the PES may require an element of working within the tidal cycle. When low tide occurs normal working hours may be extended up to a 24hr working period, however this will be limited to works within the foreshore area.

Materials will be hauled to site during the hours of 9:30am – 6:00pm Monday to Friday and 9:00am - 3:00pm on Saturdays.

A.1.6 Infrastructure and Operation

It is proposed to remediate the site and then convert it into a public amenity area. In order to achieve these objectives the following works and measures are proposed:

- Removal of existing structures and scrap from the site (prior to or during remediation works);
- Regrading of the site to a profile suitable to facilitate the provision of a public park (including grassland, wetland, paths, playing pitch, car park for 54 no. cars, bicycle parking area, future overflow parking area, entrance feature, boundary and other fencing, bird viewing areas, bird roosting ledge, and all associated landscaping works);
- Construction of a Perimeter Engineered Structure (PES) in order to reduce and control the flow of seawater through the site and leachate out of the site;
- Construction of an engineered capping system over the surface of the East Tip;

Remediation measures and supporting infrastructure

The proposed remediation measures were informed by a Detailed Quantitative Risk Assessment (DQRA) which assessed the risk posed to groundwater, the marine waters of Cork Harbour and human health from the wastes at the site. The DQRA recommended in particular the installation of a capping system and a perimeter engineered structure (a copy of the DQRA is contained within Appendix A of Volume 3: EIS Appendices).

The engineered capping system will comprise a topsoil and subsoil layer to support vegetation; a geosynthetic sub-surface drainage layer; a barrier layer of natural or geosynthetic materials and a regulation layer to facilitate construction of the capping system.

The PES will consist of a berm or wedge of engineered fill around the perimeter of the East Tip which will have a maximum permeability of 1×10^{-5} m/s as recommended in the DQRA. The majority of the PES will have to be constructed in the foreshore except along the western boundary of the site adjoining the Navy where the PES will be constructed within the existing waste. The engineered cap will be tied into the PES.

Rock armour will be placed on the foreshore side of the PES to provide protection against long term coastal erosion. The top level of the PES has been selected, cognisant of projected sea level rises due to climate change, to minimise any future flood risk.

It is proposed to re-use processed slag from the site in the construction of the PES and drainage layer.

The surface water drainage system will incorporate a number of 'Sustainable Urban Drainage Systems' (SUDS) including French drains, swales, contour drains and a wetland area. The

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drainage system will be designed for a 1 in 2 year short duration high intensity storm or a 1 in 100 year return period storm. Surface water will discharge to the Cork Harbour area by diffuse drainage with the majority of the drainage directed via the proposed wetlands initially.

The various remediation measures proposed will generally not incorporate active systems and therefore the proposed remediation solution is sustainable with a low long-term energy input/cost and low maintenance requirements.

Development of Amenity Area

An outline Landscape Masterplan has been prepared for the development of the site as a public amenity. The development will include:

- New entrance features in steelwork with park name and reflecting the history of the island;
- Refurbished existing vehicular entrance with existing street lighting;
- Public walkways laid out in resin bound gravel surfaces that reflect the stone shoreline;
- Main car park for approximately 54 spaces (including 4 mobility impaired spaces and bicycle spaces) laid out in asphalt with concrete kerbs;
- Area set aside for future overflow car park set in reinforced grass;
- A surface water and wetland area to consist of wet grassland species;
- Native and ornamental tree, shrub and hedge planting;
- Wildlife viewpoints located at the south of the island to permit controlled viewing access to the shoreline;
- Bird enhancement area to attract roosting birds;
- Football/GAA pitch located at the west side of the East Tip, which will be fenced off with access only from the Naval Base; and
- Security fencing along the western boundary of the East Tip (adjacent to Naval Dockyard) and around the playing pitch.

It is anticipated that it will take the landscaping of the site approximately 5 years to establish.

A.1.7 Nature of Emissions

The potential emissions arising during the construction phase will be atmospheric (fugitive dust, asbestos, GHGs), surfacewater and groundwater. Each of these emissions are considered in this Licence Application and supporting EIS. The status of each of these emissions is summarized below:

To Atmosphere:

Currently the waste mass is exposed and has the potential to disperse dust during dry windy conditions. During construction there will be no point source emissions however the entire waste body is considered to be the source of fugitive dust, asbestos and GHG emissions. Modelling indicates potentially varying levels of impact over the duration of the remediation programme, however control and mitigation measures have been devised to ensure emissions are suitably mitigated.

There are no significant impacts to atmosphere predicted through the End-use, Aftercare and Maintenance stages of the proposed development. While there is a small car park to be

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located onsite the impact of emissions from vehicles using this car park will be negligible. There will be a *long term positive* net impact to atmosphere as a result of this remediation project.

To Surface Water:

Currently the entire waste body can be considered a surface water emission point, which will remain a potential surface water emission point during the construction phase. Emissions may occur as a result of topsoil and subsoil stripping, stockpiling activities, rainwater runoff/seepage along the foreshore and contaminant washout in the waste body by subsurface groundwater flux in and out of the waste body. Surface water management systems and measures for the construction phase have been devised to ensure emissions are suitably mitigated.

During the End use, Maintenance and Aftercare phase, surface water run-off will be channelled to the wetland area and will discharge to Cork Harbour via two diffuse outfall channels. These channels will form part of the capping layer and will not be in contact with the waste body.

To Sewer:

A sewer runs along the western boundary of the East Tip site and connects to the Naval Base waste water treatment plant. However, this wastewater treatment plant is currently operating at full capacity. The Navy has plans to install a new wastewater treatment plant and if this occurs and the facility is operational prior to commencing construction works on the East Tip site, and there is suitable capacity available, the option of disposing of waste water to this plant via the existing sewer for the duration of construction works will be considered.

To Groundwater:

Construction activities on site have the potential to cause a number of emissions as follows:

- Disturbing sediments may result in sediment release to the marine environment.
- Excavation works and reprofiling the waste body has the potential to generate dust and mobilise dissolved phase contaminants into groundwater.
- Recirculation and infiltration of surface water seepages into the waste body has the potential to raise groundwater levels.
- The use of fuel such as diesel on site has the potential to result in fuel spillages which may result in emissions to groundwater.

In order to ensure such emissions are suitably mitigated, a number of measures will be implemented such as dewatering ponding in the north central part of the site following construction of the PES and prior to reprofiling the site, installation of cut off drains, infiltration trenches/pits/ ponds, stockpile size management and ensuring the number of exposed areas are reduced.

During the End use, Maintenance and Aftercare phase there is a potential for contaminants to migrate from the waste body to the subsurface tidal groundwater in the waste body and alluvium layer and to further migrate to the underlying limestone aquifer. Implementing control measures such as construction of the capping and drainage layers will reduce surface water infiltration into the unsaturated waste body and construction of the PES will assist in controlling groundwater flux in and out of the site.

Noise Emissions:

Construction works carried out on site are the primary source of noise emissions. Construction activities will vary greatly on site and the impact assessment assumes a worst case scenario i.e. all plant and equipment will be operating at the same time at the nearest noise sensitive boundary. The most potential source of vibration emissions may be a result of construction activities such as piling (if required).

There are no significant noise or vibration emissions predicted during the End use, Maintenance and Aftercare phase.

Management measures for the construction phase have been devised to ensure potential emissions are suitably mitigated.

A.1.8 Control and Monitoring

Management measures have been devised to ensure potential emissions are suitably mitigated. Furthermore monitoring will be carried out at locations and frequencies using analysis techniques specified in the Waste Licence. This Waste Licence Application details proposed parameters for monitoring, monitoring locations and monitoring frequencies. The contractors Environmental Officer will be responsible for ensuring all such measures and monitoring arrangements are adhered to and will assess all data during the construction phase. Such information will be reported to an appointed Environmental Clerk of Works for review and onward correspondence with relevant authorities.

A.1.9 Existing Environment and Potential Impacts

Air Quality:

In its current state, the East Tip Site poses a slight adverse potential impact to air quality in the long term. During Construction there may be some temporary short term impacts to air quality. For example, impacts are predicted to increase from an existing adverse impact to a moderate adverse impact during the mobilisation, construction and capping phases. However these impacts will be mitigated through a series of mitigation measures adopted by the contractor detailed in Section F of this application and Chapter 9 (Air Quality and Climate) in the EIS.

The risk of asbestos exposure was assessed by means of a qualitative risk assessment. Through the implementation of mitigation measures, the risk of asbestos exposure on human health will be minimised. It is considered that there may be a *slight adverse impact* during excavation works, however construction workers will be protected through the use of appropriate PPE and ongoing monitoring.

However once remediation is complete, there will be *long term positive moderate impact* to air quality as a result of capping which severs the link between contaminants in the waste body and the surrounding atmosphere.

Surface Water:

In relation to surface water, the East Tip is located on an island with a substantial portion of the waste body located beneath sea water in the surrounding harbour. The majority of the waste body is therefore saturated with saline water. Surface water samples collected during low tide in June and November 2012, did not identify parameter concentrations in excess of Water Quality Standards (WQS).

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During Construction, potential impacts to surface water/marine waters may occur as a result of the following activities and emissions:

- the excavation and scraping back of material along the foreshore (suspended sediments);
- the excavation of a trench along the western boundary of the sea wall (mobilise contaminants);
- the emplacement of waste below the mean water table in the centre of the site (mobile contaminants);
- the reprofiling of waste and rainwater infiltration (generation of leachate);
- The use of diesel fuelled plant and equipment (spill).

The impact of each of the above potential emissions will be managed by the contractor through the implementation of mitigation measures detailed in Section F of this application and Chapter 13 of the EIS. As a result it is predicted that there will be an *imperceptible* impact on surface/marine waters.

Potential impacts after construction will be *positive*. The reduced flux through the site following the installation of PES and emplacement of the low permeability cap will have a positive (beneficial) impact on the receiving marine waters in Cork Harbour.

Ground Water:

Haulbowl and the East Tip are situated over Waulstorian Limestone which is classified as a Locally Important Karst Aquifer (Lk) by GSI. Comprehensive site investigations and a DQRA were completed in order to determine the distribution, chemical composition and hydraulic properties of the wastes on the site and those present in the underlying and surrounding soils and underlying natural strata beneath the East Tip site. In addition groundwater monitoring was also undertaken within and below the East Tip.

Groundwater data obtained indicates all groundwater present within the East Tip waste body and underlying natural geological formations is essentially sea water and is influenced by the tidal rise and fall of water in Cork Harbour. As a result there is no definitive groundwater flow direction.

Furthermore the underlying Limestone Aquifer is of limited value due to the saline water quality observed. Therefore the site is considered to be having a negligible impact on the underlying aquifer.

Impacts on water quality in the limestone aquifer during construction are considered imperceptible. During the End use Maintenance and Aftercare phase, impacts to groundwater quality in the limestone aquifer are considered negligible.

Noise:

Noise emissions will occur on the East Tip site as a result of construction activity. Noise modelling indicates elemental noise levels in many of the nearest noise sensitive receptors. It should however be noted that this noise modelling is based on a worst case scenario of all plant operating at the same time at the nearest point of the site boundary to the respective noise sensitive receptor which is unlikely to occur. Section F of this application and Chapter 10 (Noise and Vibration) of the EIS details recommended mitigation measures to manage potential noise emissions to suitable levels.

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There will be no significant noise impacts associated with the end-use, maintenance and aftercare phase.

Ecology:

Terrestrial, intertidal, benthic, bird and bat surveys have been undertaken at the site to establish the baseline environment. There are no habitats of conservational interest recorded at the site or in the adjacent marine environment. No species of conservational interest were recorded during site surveys. Consultation has also been undertaken with key stakeholders including the NPWS, IFI and EPA.

The proposed works at the East Tip are located in close proximity to a number of designated sites including Cork Harbour Special Protection Area (SPA), which at its closest point at Lough Beg is 1.4km to the south of the East Tip and 600m south from the road works in Ringaskiddy. Great Island Channel candidate Special Area of Conservation (cSAC) is located 4.2km to the north of the East Tip.

These sites are outside the zone of influence of the proposed works at the East Tip and therefore no direct impacts are anticipated by the proposed development.

However, indirect impacts could result from a release of sediments during the construction stage. Sediment release could potentially cause indirect impacts by

- a) Contaminating food chains in the immediate vicinity of the East Tip (for example at the Common Tern feeding area of Spit Bank); and/or
- b) Transportation of contaminants via oceanic currents to habitats within the boundary of Natura 2000 sites or into areas of high conservational value.

The study showed that for the preferred remediation solution increased suspended sediments are likely to be restricted to the area around the East Tip, with maximum predicted increases of 500mg/l extending 0.1km and 0.17km to the north and east of the area, respectively. Therefore re-suspended sediment effects will be localised and would not result in the potential of sediment to be transported to Natura 2000 site. These estimates do not include additional sediment abatement mitigation measures which are expected to further restrict any sediment to the site environs. Such measures include use of geotextile tubes, sediment screens, sheet piling or other sediment abatement measures in order to prevent the redistribution of any re-suspended or exposed sediments during tidal exposure. As a result the risks of material re-suspension and distribution will be minimised.

The construction also includes a perimeter engineered structure to contain the waste material which will have outer rock armour. This will result in a minor residual change in foreshore habitats from mixed sediments to rocky shore. This is the only residual change identified from the ecological assessment. All other identified impacts are temporary in nature. Specific mitigation measures have been proposed for the prevention of impacts to all species.

Other potential impacts from construction include physical presence and noise on marine species and birds. Specific mitigation will be implemented for the minimisation of any potential impacts.

Due to the proximity to Natura 2000 sites, an Appropriate Assessment Stage 2 Natura Impact Statement (NIS) has been prepared and is included with the EIS (Volume 4). The NIS concludes that there will be no potential for cumulative impacts arising in combination with

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any other plans or proposals, with the implementation of best practice and the recommended mitigation measures.

A.1.10 Remediation, Decommissioning, Restoration and Aftercare

Once remediated the site will not be an active operational facility but rather it will be recreational park which will include a car park, playing pitch and wetland area. In terms of aftercare, it will be necessary to ensure the landscape planting and grassed areas are properly established and maintained to achieve the desired effect of attractive parkland.

Maintenance of the landscape works will be required to be an integral part of the on-going site management. This will include a defects liability period during which any defective plant material is to be replaced. Litter picking and weed control will be carefully monitored during the early growing seasons.

Please refer to Chapter 11 (Landscape and Visual) of the EIS for further details.

A.1.11 Statutory Requirements Section 40(4) a-j of the Waste Management Act 1996 as amended

To comply with the requirements of the Waste Management Act 1996 as amended, the activity concerned must comply with Sections 40(4) a-j of the Act. Section 40(4) a-j relates to compliance with emissions standards, avoidance of environmental pollution, application of BAT principles, the technical competence of the operator and financial provisions.

In summary, a Detailed Quantitative Risk Assessment (DQRA) was carried out for the site in order to identify and determine the significance of risks to human health and the surrounding environment. Following on from this mitigation measures were identified to reduce/eliminate such risks to suitable levels. Emissions were compared to relevant Generic Assessment Criteria (GACs). Premised on the back of the DQRA an EIS was completed for the project, which has determined that the proposed remediation works will have a positive impact on the surrounding environment.

While this application is for a hazardous waste landfill, the hazardous classification has been conferred on the site by virtue of a minority component which cannot be isolated from the non-hazardous component (which is in the majority). A hazardous waste licence is the statutory mechanism used to ensure the proposed works are carried out and regulated appropriately.

Construction of a Perimeter Engineered Structure and low permeability capping system are considered BAT for this project and meet the requirements of the DQRA and as such are considered to provide a high level of protection to the environment. The only works proposed are those to facilitate the remediation of an existing landfill with the objective of reducing the existing potential for environmental pollution emanating from the site in its current state.

The proposed remediation project is in line with the objectives of the Cork County Waste Management Plan.

This project is subject to an ECJ ruling and the DAFM is committed to providing the necessary funding to meet the requirements of this ruling.

Energy efficient measures will be implemented where technically and feasibly practicable during this project.

Waste Hierarchy

The waste hierarchy sets out the preferred methods of waste management which member states must adhere to as a priority order. Statutory authorities are required to take measures to encourage options that deliver the best overall environmental outcome.

This is a remediation project and as such will not involve acceptance of any further waste material for disposal at the site. Any material imported into the site will be used to facilitate remediation, End use, Maintenance and Aftercare activities at the site. The remediation strategy proposed was developed on the basis of a DQRA completed to determine risks posed by the site and to determine measures necessary to deliver the best environmental outcome. Based on the DQRA, the design option found to deliver the best environmental outcome was one involving the use of a capping/ cover system across the top of the site and installation of a perimeter engineered structure a.

Please refer to Section L of this Application and Chapter 4 (Alternatives) of the EIS for further detail.

SECTION B GENERAL

A.1 Applicant's Details

Name*: The Minister for the Department of Agriculture Food and the Marine

Address Agriculture House

:

Kildare street

Dublin 2

Tel: 01-607 2000

Fax:

e-mail: info@agriculture.gov.ie

* This should be the name of the applicant which is current on the date this Waste Licence Application is lodged with the Agency. It should be the name of the legal entity (which can be a limited company or a sole trader). A trading/business name is not acceptable.

Name and Address for Correspondence

Only application documentation submitted by the applicant and by the nominated person will be deemed to have come from the applicant.

Name: Cormac Ó Súilleabháin

Address: Cork County Council

Environment Directorate,

Inniscarra,

Co. Cork

Tel: 021-4532733

Fax: 021- 4532727

e-mail: Cormac.OSuilleabhain@CorkCoCo.ie

Address of registered or principal office of Body Corporate (if applicable)

Address: Not Applicable

Tel: Not Applicable

Fax: Not Applicable

e-mail: Not Applicable

If the applicant is a body corporate, the following information must be attached as **Attachment B1:**

- a) a Certified Copy of the Certificate of Incorporation or Memorandum and Article of Association;
- b) the Companies Registration Number from the Companies Registry Office; and
- c) a list of the Company Directors.

Has an Article 11 request been submitted previously in relation to this site?

Yes	<input type="checkbox"/>
No	<input checked="" type="checkbox"/>

If yes, please provide the Article 11 request number:-

State the interest of the applicant in the land which is subject to the application. The applicant is (please check):

Landowner	<input checked="" type="checkbox"/>
Lessee	<input type="checkbox"/>
Prospective Purchaser	<input type="checkbox"/>
Other (please specify)	<p>The East Tip is in the ownership of the Minister for Agriculture Food and the Marine. The Minister for the Department of Agriculture Food and the Marine is the applicant. Cork County Council is acting as the Minister's agent for this project.</p> <p>Please refer to Drawing DG1001 Land ownership in Attachment B1.</p>

Name and address of all occupiers of the land on which the Activity is situated (if different from applicant named above).

Name: Naval Services (DOD)

Address: Naval Headquarters,
Naval Base,
Haulbowline,
Cobh,
Co Cork

Tel: 1890 262828 or 021 486 4731

Fax:



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e-mail: navy.manpower@defenceforces.ie

Name:

Address:

Tel:

Fax:

e-mail:

Name and address of the current owner(s) and lessees of the land, buildings and ancillary plant on which the activity is or will be situated (if different from applicant named above). An appropriately scaled drawing (≤A3) showing the above details should be included in Attachment B1.*

Name:

Address:

Tel:

Fax:

e-mail:

*Current at the time the application is submitted

Name:

Address:

Tel:

Fax:

e-mail:

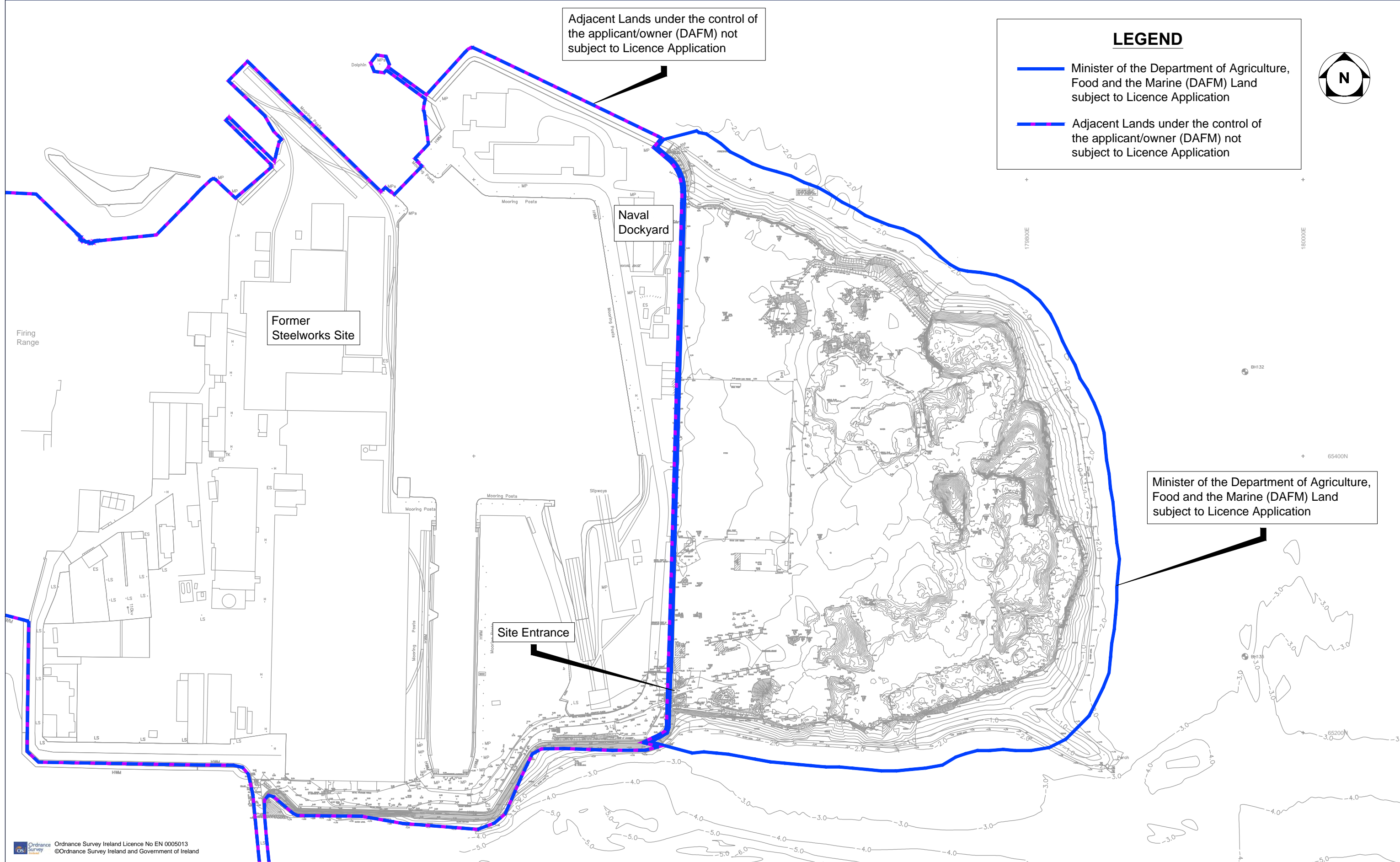
*Current at the time the application is submitted

All lands at the East Tip are in the ownership of the Minister for Agriculture Food and the Marine. The Navy's current interest relates solely to the football pitch.

Attachment B1 Land Ownership Drawing (DG1001)

Attachment B.1

DG1001- Landownership Drawing



LEGEND

— Minister of the Department of Agriculture, Food and the Marine (DAFM) Land subject to Licence Application

— Adjacent Lands under the control of the applicant/owner (DAFM) not subject to Licence Application



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No.	Date	Chk.	App.	Amendment / Issue
F01	07.11.13	RH	ER	FINAL ISSUE
A01	24.04.13	RH	ER	ISSUE FOR APPROVAL
D02	Apr. 13	RH	ER	DRAFT ISSUE
D01	Apr. 13	RH	ER	DRAFT ISSUE
No.	Date	Chk.	App.	Amendment / Issue



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Drawn	RH
Checked	ER
Approved	ER
Date	March 2013
Scale	NTS @ A1 1:2500 @ A3
Job No.	MCE0734

Project	EAST TIP REMEDATION PROJECT		
Title	LANDOWNERSHIP PLAN		
File Ref.	MCE0734DG1001F01.dwg	Drg. No.	DG1001
Rev.	F01		

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A.2 Location of Activity

Name: The East Tip

Address*: Haulbowline Island
Cork

Tel: Not Applicable

Fax: Not Applicable

e-mail: Not Applicable

* Include any townland

NationalGrid Reference (8 digit 4E,4N)	E79532, N65455
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Location maps ($\leq A3$), appropriately scaled, with legible grid references should be enclosed in **Attachment B.2**. The site boundary must be outlined on the map in colour.

Attachment B.2 Location Maps

It should be noted that the planning site boundary and the waste licence site boundary differ in that the planning boundary includes a portion of the access route to the site. Please refer to Figure 1.7 in the EIS.

Please find enclosed the following site location drawings:

- Drawing DG1002 Site Plan
- Drawing DG1003 Location Map
- Drawing DG1004(a-f) Existing Services Plan

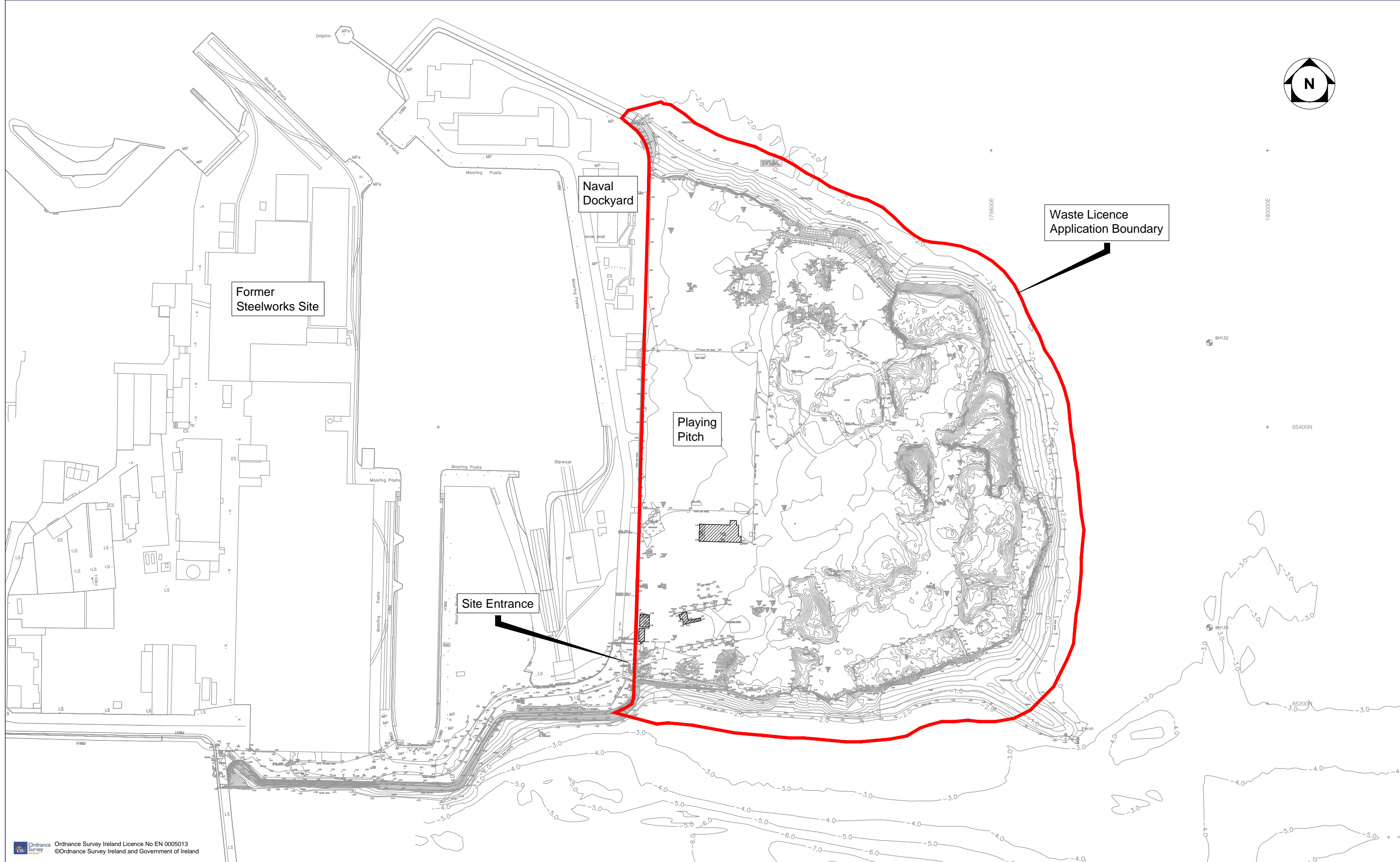
Attachment B.2

Drawings

DG1002 Site Plan

DG1003 Location Map

DG1004(a-f) Existing Services Plan



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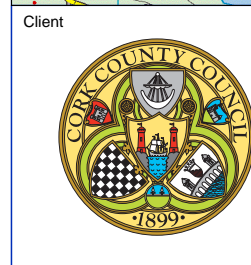
No.	Date	Drawn/Checked	Amendment / Issue	App
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A01	24.04.13	RH/ER	ISSUE FOR APPROVAL	ER
D02	Apr. 13	RH/ER	DRAFT ISSUE	ER
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Drawn RH	Project	EAST TIP REMEDIATION PROJECT	
Checked ER			
Approved ER			
Date March 2013	Title	SITE PLAN	
Scale NTS @ A1 1:2500 @ A3			
Job No. MCE0734	File Ref. MCE0734DG1002F01.dwg	Drg. No. DG1002	Rev. F01

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F01	07.11.13	RH	ER	FINAL ISSUE
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D01	Apr. '13	RH	ER	DRAFT ISSUE

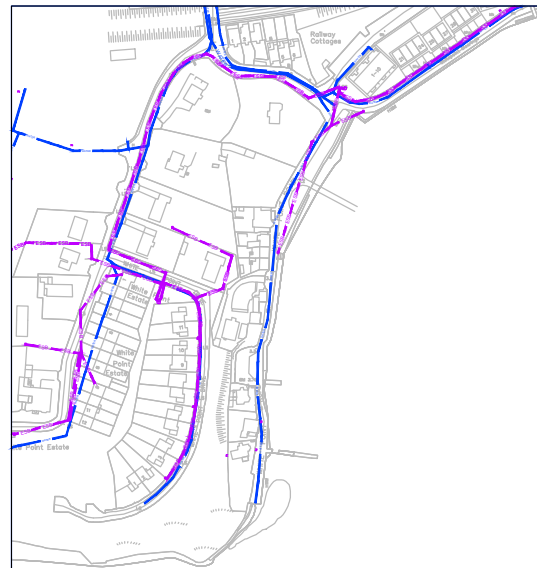


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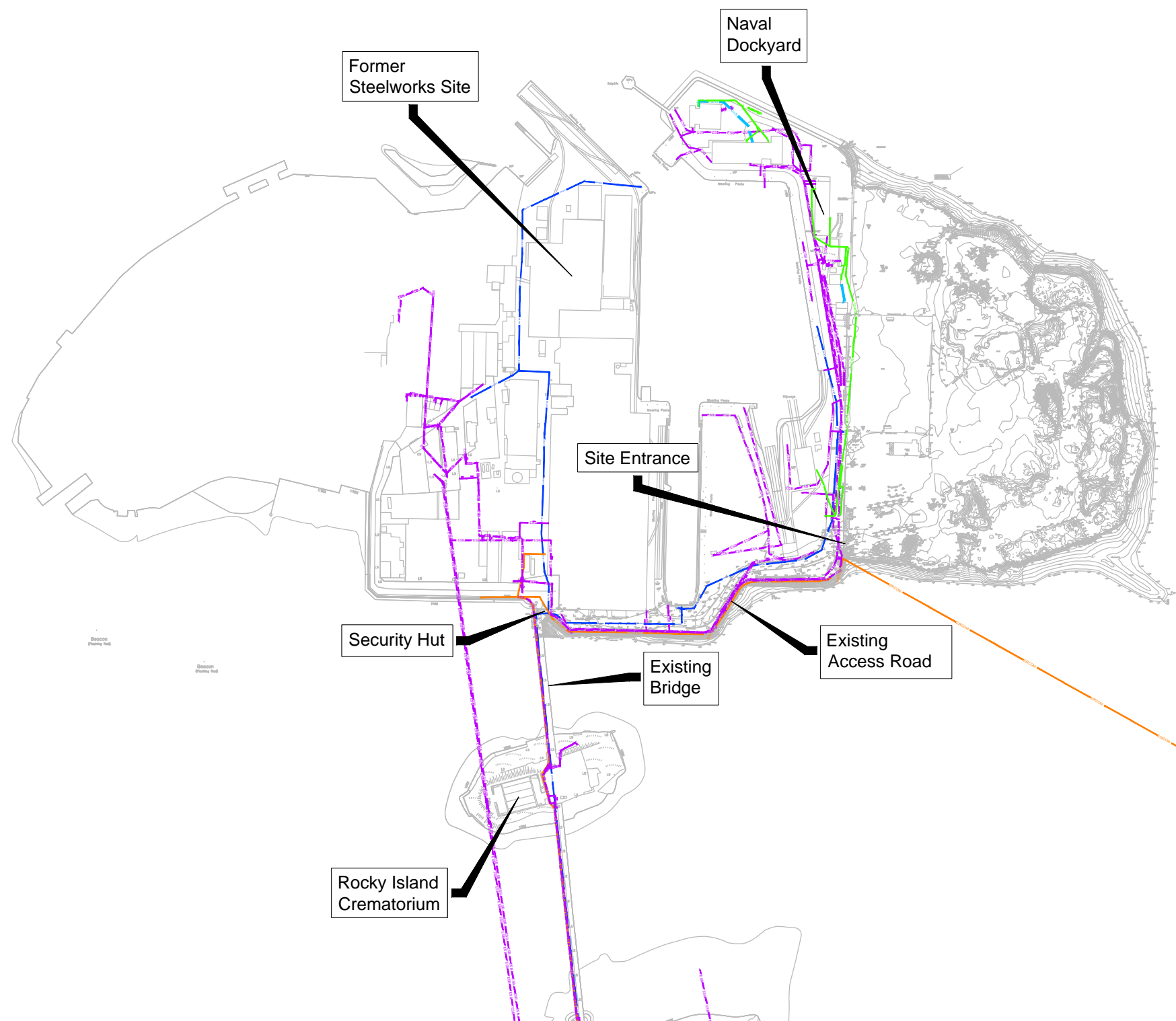
Drawn	RH	Project	EAST TIP REMEDICATION PROJECT	
Checked	ER			
Approved	ER			
Date	March 2013	Title	SITE LOCATION PLAN	
Scale	NTS @ A1 1:7500 @ A3			
Job No.	MCE0734	File Ref.	MCE0734DG1003F01.dwg	Rev.
		Dr. No.	DG1003	F01


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LEGEND

EIRCOM SERVICES  EIRCOM
WATER NETWORK  WATER
ELECTRICAL SERVICES  ESB
SEWER  SEWER
GAS / OIL  GAS



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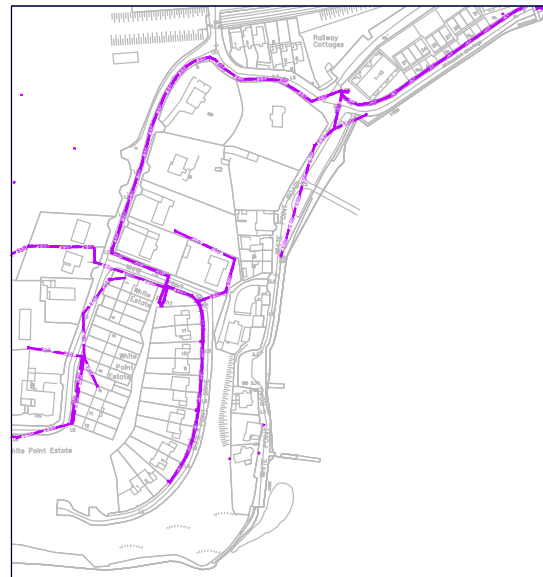
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F01	07.11.13	DH ER		FINAL ISSUE
A01	24.04.13	DH ER		ISSUE FOR APPROVAL
D02	Apr. '13	DH ER		DRAFT ISSUE
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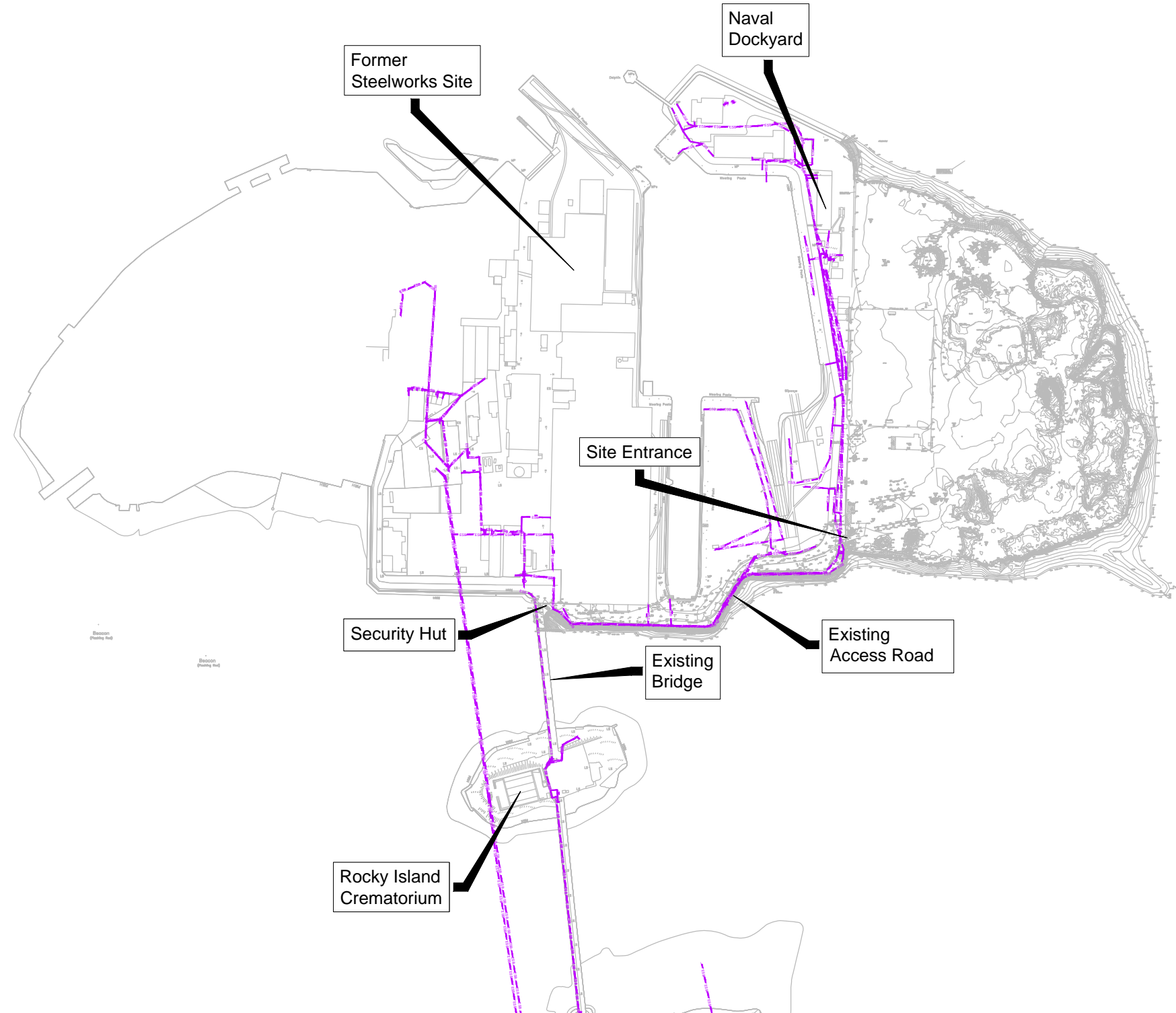
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Date	March 2013	Title	SERVICES PLAN	
Scale	NTS @ A1 1:5000 @ A3			
Job No.	MCE0734	File Ref.	MCE0734DG1004F01.dwg	Rev.
		Drg. No.	DG1004a	F01

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LEGEND

ELECTRICAL SERVICES 



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A01	24.04.13	DH/ER		ISSUE FOR APPROVAL
D02	Apr. '13	DH/ER		DRAFT ISSUE
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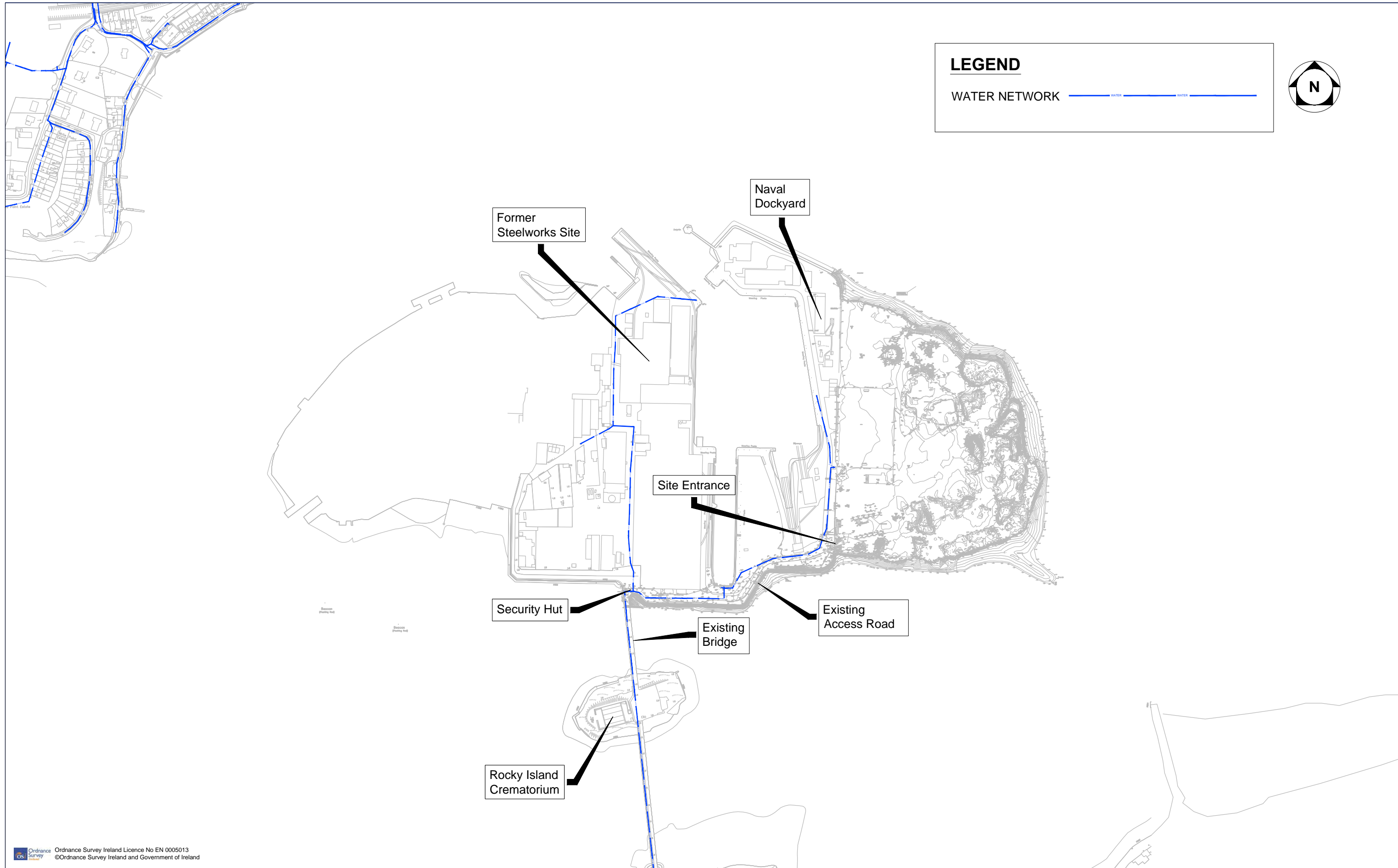


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Approved ER	Title		
Date March 2013	ELECTRICAL SERVICES PLAN		
Scale NTS @ A1 1:5000 @ A3	Job No.	File Ref.	Rev.
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WATER NETWORK 



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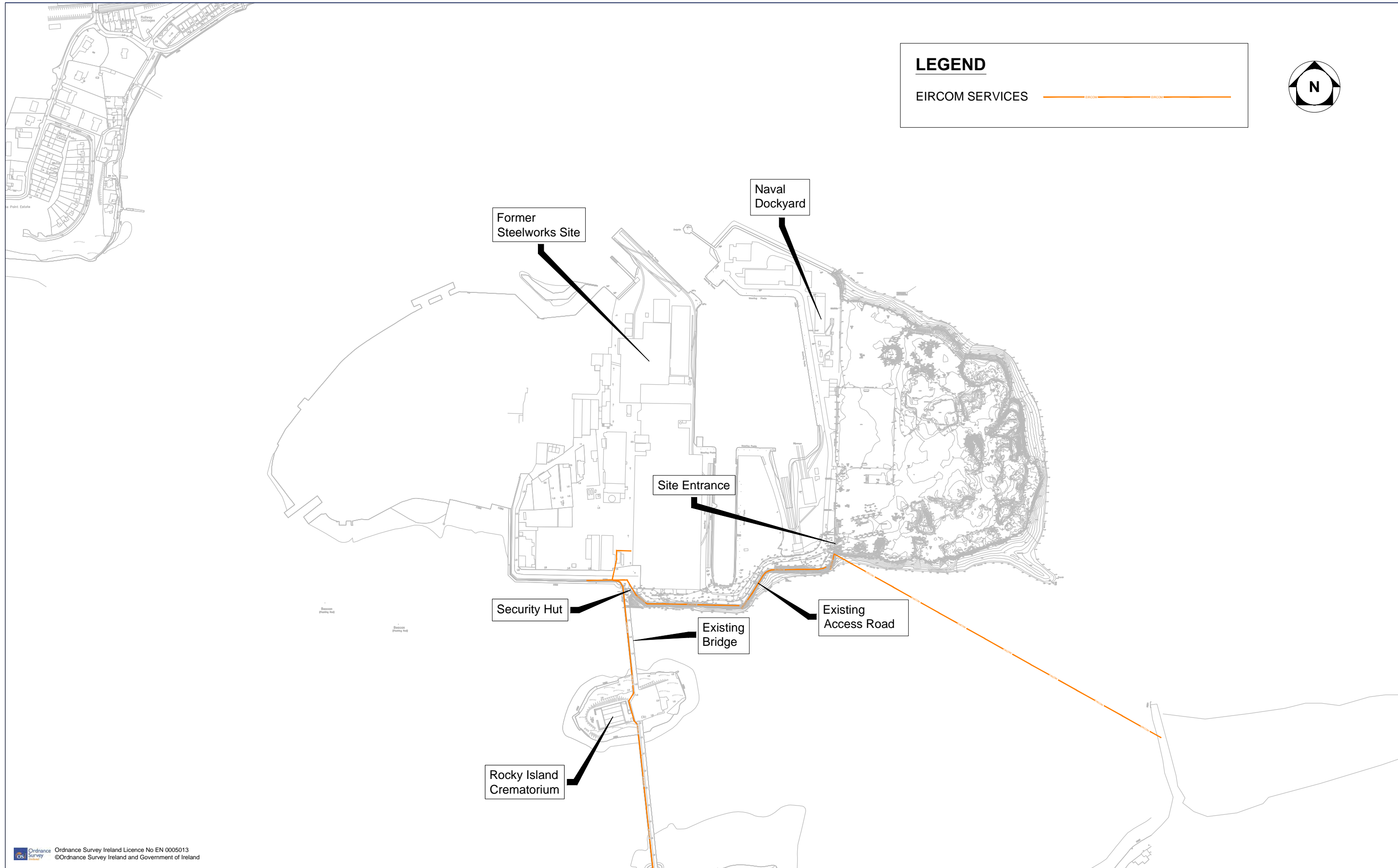
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F01	07.11.13	DH	ER		FINAL ISSUE
A01	24.04.13	DH	ER		ISSUE FOR APPROVAL
D02	Apr. '13	DH	ER		DRAFT ISSUE




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Approved	ER	Title	
Date	March 2013	WATER NETWORK PLAN	
Scale	NTS @ A1 1:5000 @ A3	Job No.	MCE0734
File Ref.	MCE0734DG1004F01.dwg	Drg. No.	DG1004c
Rev.	F01		

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EIRCOM SERVICES 



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D02	Apr. '13	DH ER		DRAFT ISSUE
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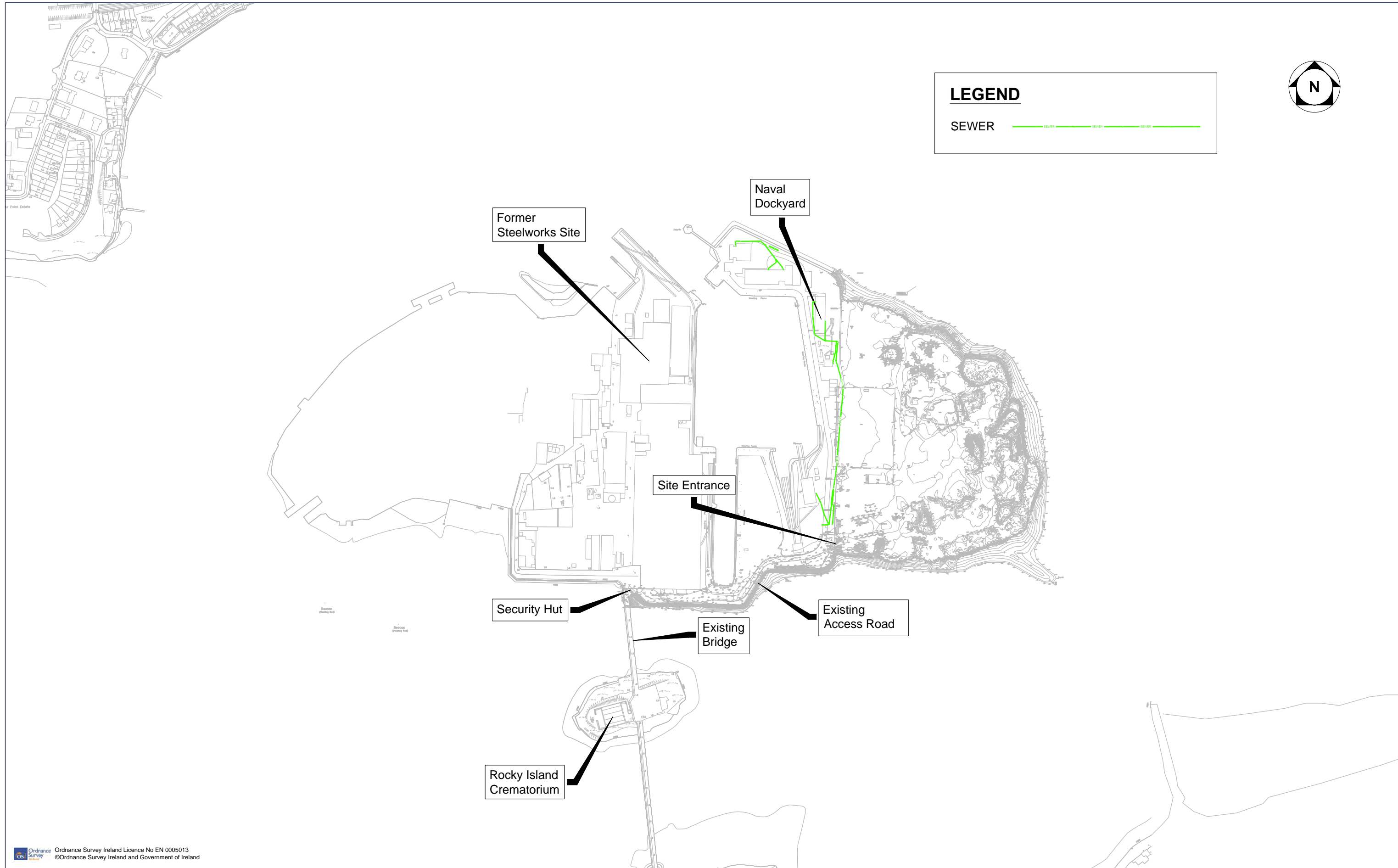


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Approved ER	Title		
Date March 2013	EIRCOM SERVICES PLAN		
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Job No. MCE0734	MCE0734DG1004F01.dwg	DG1004d	F01

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SEWER



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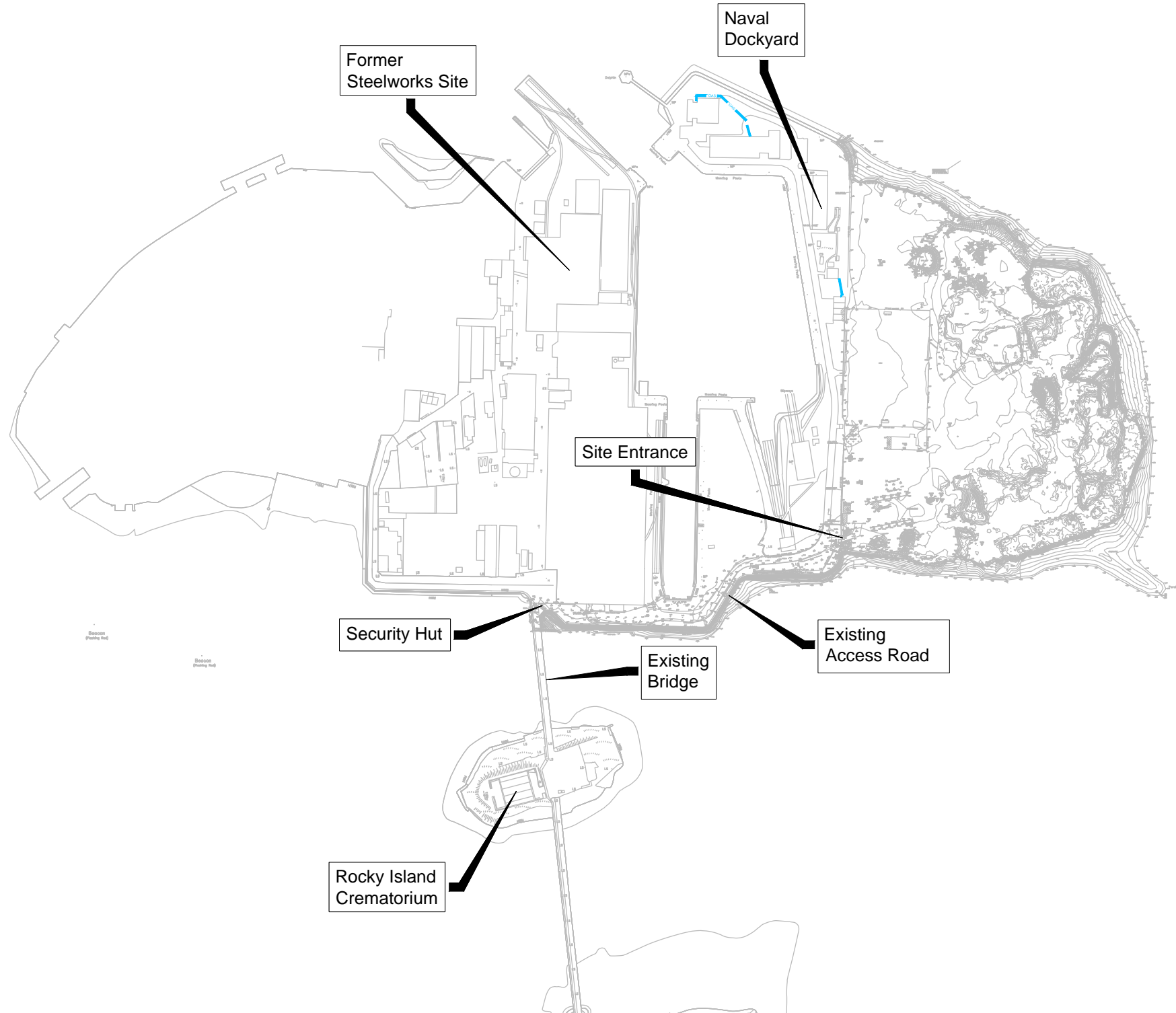
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Date March 2013	SEWER SERVICES PLAN		
Scale NTS @ A1 1:5000 @ A3	File Ref.	Drg. No.	Rev.
Job No. MCE0734	MCE0734DG1004F01.dwg	DG1004e	F01

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LEGEND

GAS/OIL 



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Checked	ER			
Approved	ER			
Date	March 2013	Title	GAS/OIL SERVICES PLAN	
Scale	NTS @ A1 1:5000 @ A3			
Job No.	MCE0734	File Ref.	MCE0734DG1004F01.dwg	Rev.
		Drg. No.	DG1004f	F01

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A.3 Planning Authority and/or Public Authority

Give the name of the planning authority in whose functional area the activity is or will be carried out.

Name: Cork County Council

Address: County Hall,

Carrigrohane Road,

Cork

Tel: 021-4276891

Fax: 021- 4276321

Has the Planning Authority received written notification from the applicant of the application to the Environmental Protection Agency for a Waste Licence under Article 9 of the Waste Management (Licensing) Regulations?

Planning Authority notified	Yes <input checked="" type="checkbox"/>
	No <input type="checkbox"/>

Planning Permission relating to this application:-

B.3(a) is not required	
B.3(b) has been obtained	
B.3(c) is being processed	✓

Local Authority Planning File Reference N^o:	Planning permission is currently being processed by An BordPleanála
---	---

Attachment B.3

B.3(a) Planning permission not required

Where **the new activity or changes to the existing activity which require this licence/review application** does not require a grant of planning permission, the following should be included in **Attachment N^o B.3:**

- Confirmation in writing from the planning authority or An BordPleanála, as the case may be, that a grant of permission is not required,

AND

- Details of previous planning permissions granted for the development comprising the activity, including a copy of the grant of permission and a copy of all conditions.

AND EITHER

- Where the planning authority or An BordPleanála accepted or required the submission of a copy of an EIS under the Planning and Development Act 2000, as amended, for a previous planning permission application, the required number of copies of the most

WASTE Application Form

recent EIS should be submitted. A copy of the planning inspector's report associated with that EIS should also be submitted.

OR

- (b) Where an EIS was not required for any previous planning permissions granted for the development comprising the activity, submit confirmation in writing from the planning authority or An BordPleanála that an environmental impact assessment was not required for the development by or under the Planning and Development Act 2000, as amended.
- Where a grant of planning permission has never been required for the site of the activity, submit confirmation in writing from the planning authority or An BordPleanála, as the case may be, of same.

B.3(b) Planning permission already granted

Where **the new activity or changes to the existing activity which require this licence/review application** has already been granted planning permission by a planning authority or An BordPleanála, the following should be included in **Attachment N^o B.3**:

- a copy of the grant of permission and either:
 - (a) where the planning authority or An BordPleanála accepted or required the submission of a copy of an EIS under the Planning and Development Act 2000, as amended, the required number of copies of that EIS;

OR

- (b) confirmation in writing from the planning authority or An BordPleanála that an environmental impact assessment was not required for the development by or under the Planning and Development Act 2000, as amended.
- A summary of all previous planning permissions granted for the site of the activity should be provided.

B.3(c) Planning permission under consideration

Where **the new activity or changes to the existing activity which require this licence/review application** involves development or proposed development that requires a grant of planning permission, and the relevant planning application is under consideration by the planning authority or An BordPleanála, the following should be included in **Attachment N^o B.3**:

- confirmation in writing from a planning authority or An BordPleanála, as the case may be, that an application for permission comprising or for the purposes of the activity to which the application for a licence relates, is currently under consideration, and either:

- (a) the required number of copies of the EIS relating to that application for permission, where one is required by or under the Planning and Development Act 2000, as amended;

OR

- (b) confirmation in writing from the planning authority or An BordPleanála that an environmental impact assessment is not required by or under the Planning and Development Act 2000, as amended.

- A summary of all previous planning permissions granted for the site of the activity should be provided.

For B.3(b) and B.3(c) above, please note that in accordance with Section 42(1C) of the Waste Management Act 1996, as amended, the Agency shall **refuse to consider** the licence application if the applicant does not comply with the requirements of Section 42(1B).

Licences and permits

For existing activities, **Attachment N^o B.3** should also contain a table of references to all licences and permits past and presently in force at the time of submission.

Appropriate Assessment

Where applicable, provide a copy of any screening for Appropriate Assessment report and Natura Impact Statement (NIS) that was prepared for consideration by any planning/public authority as defined in Regulation 2(1) of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) in relation to the activity. Where a determination that an Appropriate Assessment is required has been made by any planning/public authority in relation to the activity, a copy of that determination and any screening report and Natura Impact Statement (NIS), and any supplemental information furnished in relation to any such report or statement, which has been provided to the planning/public authority for the purposes of the Appropriate Assessment shall be included in **AttachmentN^o B.3**.

AttachmentB.3

Please see attached the following:

- Attachment B.3.1 - An BordPleanala Confirmation Letter,
- Attachment B.3.2 - Summary of previous planning permissions,
- Attachment B.3.3 -Licences and permits (past and present)

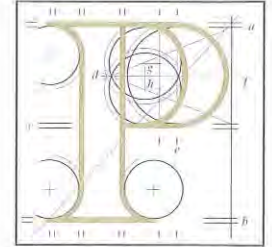
The Appropriate Assessment Screening Report and Natura Impact Statement are contained within Volume 4 of the accompanying EIS.

Attachment B.3.1

AnBordPleanála Confirmation Letter

Our Ref: MT 04.MT0001
P.A.Reg.Ref:
Your Ref: MCE0734LT0014/CP12006

An Bord Pleanála



Dr. Cormac Ó Súilleabháin
Minister for Agriculture, Food and the Marine
Environmental Directorate
Cork County Council
Inniscarra
Co. Cork

6th November 2013

Approval **Re:** East Tip Remediation Project,
Haulbowline, Co. Cork.

Dear Sir,

An Bord Pleanála has received your application for approval of the above-mentioned proposed development in accordance with section 181(3) of the Planning and Development Act, 2000, as amended. Enclosed is a receipt for the fee lodged. The matter is receiving attention.

Any submissions received by the Board will be forwarded to you for your information.

The Board will revert to you in due course in respect of this matter. If you have any queries in the meantime please contact the undersigned officer of the Board.

Please quote the above-mentioned An Bord Pleanála reference number in any correspondence or telephone contact with the Board.

Yours faithfully,

Kieran Doherty
Executive Officer
Direct Line: 01-8737248

ef01.ltr



Attachment B.3.2

Summary of previous planning permissions

1. Subject Site - East Tip

The East Tip has been the subject of only one planning application and permission in the past: (Ref: 97/4031) and is summarised below. It should be noted however that application Ref. 77/1907 which predominantly relates to the main steelworks site (west of the East Tip site), included for the deposition of waste on the East Tip site and is therefore also discussed.

Over the years, other planning applications relating to the main steelworks site on Haulbowline Island (which is separated from the East Tip by the Naval Dockyard) and planning applications relating to other lands on the mainland were made by the operators of the former steelworks. Details of these, and other planning applications related to Haulbowline Island and Rocky Island are provided in Appendix D: Planning and Licensing Context of the EIS.

(a) Cork County Council Reg. Ref. 97/4031

Under this planning application, Irish Ispat Ltd. was granted permission for the construction of a rock armour faced sea wall on the north, south and east sides of the East Tip on 19th January 1998. A foreshore licence granted in 1996 required that such a wall be constructed within 15 years of the issue of the licence or such extended time as may be agreed (ref. EPA Inspector's report on IPC licence application 2001) to protect the site against erosion.

One condition was attached to this planning permission; this relates to landscaping, including wind protection of any planting carried out.

The permitted design consisted of a rock armour wall and a geotextile filter fabric placed on top of fill material and covered by a layer of top soil. The top soil layer was proposed to be 1.5m minimum depth; the proposed rock layer on the site was to be 90cm. The proposed rock armour wall was permitted to have a slope of 1:5 and was to be 7m tall from the base. Trees and shrubs were to be planted along the top in the topsoil. The works were to extend to a width of 21m on the three seaward sides of the site and were to extend for 292 m along the southern side of the site, 296m at the eastern side and 320m at the northern site. The planner's report states: *"This is a welcome application as it will help screen the apparent ugly dumping to the east of the industrial complex."*

No works were carried out pursuant to this grant of permission.

(b) Main Steelworks Complex, Haulbowline – Cork County Council Reg. Ref. 77/1907

Irish Steel Holdings Ltd. was granted permission for extensions and modifications to the steel making plant on 1st January, 1979. Conditions of note which were attached to the permission are as follows:-

5. *Mill scale and other suspended matter shall be recovered by cyclones or lagoon system. The extracted matter shall be disposed of on the company's disposal dump.*
6. *The following solid waste materials which have been heated to a maximum of 1000 degrees C and which are non-toxic and cannot be leached by fresh or salt water shall be disposed of on the company's disposal dump in the area licensed by the Minister for Transport and Power-*
 - a) *Melting furnace slag*
 - b) *Re-Heating furnace slag (clinker scale)*
 - c) *Cyclone scale*
 - d) *Demolition rubble from furnaces and ladles*
9. *Dust collected by the bag filters shall be:-*

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- a) *Removed off site in sealed containers for export by sea or road, or*
- b) *Pelletised on site and thereafter shipped by sea in bulk, or,*
- c) *Dumped in a location in Cork County, details of which shall be agreed with the planning authority within 6 months of the grant of permission.*

Condition 13 specifies air quality monitoring locations at the naval base, Cobh, Monkstown and Ringaskiddy Village.

A report submitted with the application specified that solid waste would be disposed of by dumping to reclaim land at the eastern side of the island – Appendix G9 Areas A and B specifically, where a '*licence for dumping*² was granted by the Department of Transport and Power in 1959. Areas A and B are shown as the northern and southern parts of the East Tip.

² The licence referenced refers to a lease issued to Irish Steel Holdings Ltd. in 1964 for the reclamation of foreshore off Haulbowline within 30 years.

Attachment B.3.3 Licences and Permits

1 Subject Site

The following authorisations were issued to the steelworks facility and included authorisation for the subject site (East Tip). These are discussed in turn below.

Table 2.2: Licences and Permits Issued for the Subject Site

No.	Authorisation	Ref No.	Date	Issued by
1.	IPC Licence	Reg No. 498	2001	EPA
2.	Waste Permit	Ref No. 811/1998	1998	Cork County Council
3.	Waste Permit	Ref No. 43/1997	1997	Cork County Council
4.	Licence Agreement ³	Deed No. 1033	1996	Department of the Marine

(a) IPC Licence (Reg No. 498)

In 2001, the EPA issued an IPC licence to Irish Ispat Ltd for the facility to carry out the initial melting or production of iron or steel. The licence issue date was one week after the closure of the facility was announced. In 2002, the liquidator applied to the High Court pursuant to S.290 of the Companies Act, 1963, for leave to disclaim the IPC licence. The judgement in 2004 allowed the liquidator to disclaim the licence.

(b) Waste Permit (Ref No. 811/1998)

In 1998, Cork County Council issued a Waste Permit to Irish Ispat Ltd to treat waste (i.e. operate a scrap metal processing plant) at Haulbowline until the 31st of December 1998 subject to 31 conditions. The permit authorised the acceptance of slag for deposition on the waste heap. Dust contaminated with lead or zinc was not permitted for deposition. Dust and sludge containing reusable iron or iron compounds was required to be recovered as far as possible.

(c) Waste Permit (Ref No. 43/1997)

In 1997, Cork County Council issued a Waste Permit to Irish Ispat Ltd at Haulbowline for the treatment of waste (i.e. operate a scrap metal processing plant) at Haulbowline from January to the 31st of December 1997 subject to 33 conditions. This permit authorised the deposition of slag, millscale, spent refractories and scrap stock at the Tip head. Dust contaminated with lead and zinc was permitted to be accepted temporarily but required covering by a waterproof sheet. Dust and sludges containing reusable iron and iron compounds were required to be recovered and reused as far as possible.

(d) Licence (Deed No. 1033)

A Licence Agreement dated 22 May 1996 between Irish Ispat and the Department of the Marine required the construction of a sea wall within 3 years “to complete and secure from erosion” the area north of the sports ground. The agreement required a sea wall to be constructed around the landfill area within 15 years or such extended time as may be agreed (ref. EPA Inspector’s report on IPC licence application 2001).

Please refer to the Chapter 2 (Legislative and Policy Context) of the EIS for further details.

³Source: EPA Inspectors Report on Irish Ispat Ltd IPC Licence Application 2001.

A.4 Sanitary Authority

In the case of a discharge of any trade effluent or other matter (other than domestic sewage or storm water) to a sewer of a sanitary authority or other body, give the name of the sanitary authority in which the sewer is vested or by which it is controlled and the waste water treatment plant (if any) to which the sewer discharges.

Name: Not Applicable

Address:

Tel:

Fax:

The applicant must enclose, as **Attachment B.4**, a copy of any effluent discharge licence and/or agreement between the applicant and the body with responsibility for the sewer.

See attachment B.4 for further information.

Attachment B.4 Effluent Discharge Licence

There are currently no operational wastewater treatment systems on the East Tip site. There is however a treatment plant serving the Naval Base to the west of the site, to which the existing site foreman's office at the East Tip is connected. A sewer runs along the western boundary of the site which connects to the Naval Base treatment plant. There is currently no discharge licence applicable to the East Tip.

During the construction phase of works, the Contractor will be required to manage the wastewater generated from the site welfare facilities. It will be a requirement that all wastewater generated on site is disposed of appropriately in a waste water treatment facility. The waste water treatment plant at the Irish Navy Service (INS) is currently operating at capacity and at time of preparing this waste licence the Navy had plans of installing a new wastewater plant. If this new waste treatment plant is in place when the works commence and suitable capacity is available, the option of disposing of wastewater to this plant for the duration of the construction period may be explored at the detailed design stage. If the treatment plant is not in place or this option is not deemed suitable, wastewater will be taken to the mainland for disposal as per Contractor responsibility. Wastewater arising intermittently from the proposed wheelwash facility will be disposed of appropriately to a wastewater facility as required.

It is not proposed to discharge any trade effluent or waste water from the site post construction.

A.5 Other Authorities

The applicant should indicate the **Health Board Region** where the activity is or will be located.

Name: Health Service Executive (South Region)

Address: Model Business Park

Model Farm Road

Cork

Tel: 021 4928500

Fax:

A.6 Notices and Advertisements

Articles 6 and 7 of the Waste Management (Licensing) Regulations 2004 requires all applicants to advertise the application in a newspaper and by way of a site notice. See *Guidance Note*.

Attachment B.6 should contain a copy of the site notice and an appropriately scaled drawing ($\leq A3$) showing its location on site. **The original application must include the complete newspaper in which the advertisement was placed.** The relevant page of the newspaper containing the advertisement should be included with the original and three copies of the application.

Attachment B.6 Site Notice and Site Notice Location Drawing

Please refer to Drawing DG1003 (Attachment B.2) for location of site notices.

- Copies of the site notice and newspaper advert are given overleaf. The newspaper advertisement was placed in The Examiner.

**Attachment B.6
WLA Newspaper Advertisement
And Site Notice**

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTE LICENCE

Notice is hereby given in accordance with the provisions of the Third and Fourth Schedules of the Waste Management Act 1996 as amended and Articles 6 and 7 of the Waste Management (Licensing) Regulations 2004 (S.I. No. 395 of 2004) that Cork County Council, acting as agent for the Minister for Agriculture, Food and the Marine, will lodge an application for a Waste Licence for the proposed remediation of the East Tip, Haulbowline Island, Co. Cork (National Grid Reference E79532, N65455) with the Environmental Protection Agency on behalf of the Minister.

The Waste Licence Application boundary covers an area of approximately 11.8 hectares and the proposed development will involve works on the foreshore. It is proposed to remediate the East Tip site by:

- Constructing an engineered capping system over the surface of the waste body and installing a surface water drainage system to limit surface water infiltration.
- Constructing a Perimeter Engineered Structure (PES) to limit tidal inundation to the site.
- Re-profiling and landscaping the site to facilitate the provision of a public park (including grassland, wetland, paths, playing pitch, car park for 54 no. cars, bicycle parking area, future overflow parking area, entrance feature, boundary and other fencing, bird viewing areas, bird roosting ledge, and all associated landscaping works);

As part of these works it is proposed to recover and recycle slag, scrap metal, C&D material and millscale material where feasible. It is also proposed to reuse recovered materials where feasible.

The classes of activity concerned in accordance with the Third Schedule of the Waste Management Act 1996 (as amended) during the 'Construction phase' and/or 'End use, Maintenance and Aftercare' phases are as follows:

- Class D1. Deposit into or on to land (e.g. landfill, etc.)
- Class D4. Surface impoundment (e.g. placement of liquid or sludgy discards into pits, ponds or lagoons, etc.)
- Class D7. Release to seas/oceans including sea-bed insertion
- Class D13. Blending or mixture prior to submission to any of the operations activity referred to in a preceding paragraph of this Schedule.
- Class D15. Storage pending any of the operations numbered D1 to D14 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).

The classes of activity concerned in accordance with the Fourth Schedule of the Waste Management Acts 1996 (as amended) are as follows:

- Class R4. Recycling/ reclamation of metals and metal compounds

WASTE Application Form

- Class R5. Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials
- Class R12. Exchange of waste for submission to any of the operations numbered R1 to R11 (if there is no other R code appropriate, this can include preliminary operations prior to recovery including pre-processing such as, amongst others, dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending or mixing prior to submission to any of the operations numbered R1 to R11).
- Class R13. Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced)".

The **Principal Activity** at the site is Class D1 of the Third Schedule as detailed above.

An Environmental Impact Statement (EIS) and a Natura Impact Statement (NIS) will be submitted to the Agency with the application.

A copy of the Waste Licence Application, the EIS, the NIS and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the application will, as soon as is practicable after receipt by the Agency, be available for inspection or purchase, at the Headquarters of the Environmental Protection Agency:

Environmental Protection Agency,
Johnstown Castle Estate,
County Wexford.

It will also be available to view at the following locations:

Cork County Council
County Hall,
Carrigrohane,
Co.Cork.
(viewing hours 9.00am to 4.00pm Monday to Friday, excluding public holidays).

Cobh Town Council
Town Hall,
Cobh,
Co. Cork

(9.30am to 1.00pm and 2.00pm to 3.00pm Monday to Friday, excluding public holidays).

This site notice was erected on the: **12th November 2013**



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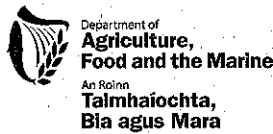
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Public Notices



APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTE LICENCE

Notice is hereby given, in accordance with the provisions of the Third and Fourth Schedules of the Waste Management Act, 1996, as amended and Articles 6 and 7 of the Waste Management (Licensing) Regulations, 2004 (S.I. No. 395 of 2004) that Cork County Council, acting as agent for the Minister for Agriculture, Food and the Marine, will lodge an application for a Waste Licence for the proposed remediation of the East Tip, Haulbowline Island, Co. Cork (National Grid Reference E79532, N65455) with the Environmental Protection Agency on behalf of the Minister.

The Waste Licence Application boundary covers an area of approximately 11.8 hectares and the proposed development will involve works on the foreshore. It is proposed to remediate the East Tip site by:

- Constructing an engineered capping system over the surface of the waste body and installing a surface water drainage system to limit surface water infiltration;
- Constructing a Perimeter Engineered Structure (PES) to limit tidal inundation to the site;
- Re-profiling and landscaping the site to facilitate the provision of a public park (including grassland, wetland, paths, playing pitch, car park for 54 No. cars, bicycle parking area, future overflow parking area, entrance feature, boundary and other fencing, bird viewing areas, bird roosting ledge, and all associated landscaping works).

As part of these works, it is proposed to recover and recycle slag, scrap metal, C&D material and millscale material, where feasible. It is also proposed to reuse recovered materials where feasible.

The classes of activity concerned in accordance with the Third Schedule of the Waste Management Act, 1996 (as amended) during the 'Construction phase' and/or 'End use, Maintenance and Aftercare' phases are as follows:

- Class D1. Deposit into or on to land (e.g. landfill, etc.)
- Class D4. Surface impoundment (e.g. placement of liquid or sludgy discards into pits, ponds or lagoons, etc.)
- Class D7. Release to seas/oceans including sea-bed insertion
- Class D13. Blending or mixture prior to submission to any of the operations activity referred to in a preceding paragraph of this Schedule.
- Class D15. Storage pending any of the operations numbered D1 to D14 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).

The classes of activity concerned in accordance with the Fourth Schedule of the Waste Management Acts, 1996 (as amended) are as follows:

- Class R4. Recycling/reclamation of metals and metal compounds
- Class R5. Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials
- Class R12. Exchange of waste for submission to any of the operations numbered R1 to R11 (if there is no other R code appropriate, this can include preliminary operations prior to recovery including pre-processing such as, amongst others, dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending or mixing prior to submission to any of the operations numbered R1 to R11)
- Class R13. Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).

The Principal Activity at the site is Class D1 of the Third Schedule as detailed above.

An Environmental Impact Statement (EIS) and a Natura Impact Statement (NIS) will be submitted to the Agency with the application.

A copy of the Waste Licence Application, the EIS, the NIS and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the application will, as soon as is practicable after receipt by the Agency, be available for inspection or purchase at the Headquarters of the Environmental Protection Agency:

Environmental Protection Agency,
Johnstown Castle Estate, County Wexford.

It will also be available to view at the following locations:

- Cork County Council, County Hall, Carrigrohane, Co. Cork. (9.00am to 4.00pm Monday to Friday, excluding public holidays).
- Cobh Town Council, Town Hall, Cobh, Co. Cork. (9.30am to 1.00pm and 2.00pm to 3.00pm Monday to Friday, excluding public holidays).

Public Notices
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Legal Notices

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District Number 16

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1955, Sections 2, 3

THE COURTS (Supplemental
Provisions) ACT, 1961

THE DISTRICT COURT RULES
ORDER 86

NOTICE OF APPLICATION
FOR A NEW PUBLIC DANCING
LICENCE

TOP POINT TAVERNS LIMITED
— Applicant

MRS. ROBINSON'S
Name of Premises

Take notice that Top Point Taverns Limited, a limited liability Company having its registered office at 5F Nutgrove Office Park, Rathfarnham, Dublin 14, being the holder of a 7 Day On Publican's Licence intends to apply to the Licensing Court at Bray District Court, The Courthouse Civic Centre, Main Street, Bray, County Wicklow, in said Court Area and District aforesaid on the 12th day of December, 2013, at 10.30am, for the grant of a Licence to use the premises now known as Mrs. Robinson's and situate at Unit 2 Barker House, Greystones, in the County of Wicklow, also known as Unit 2 Zoe House, Church Road, Greystones, County Wicklow, in the Court Area and District aforesaid to the said Applicant, for Public Dancing which said premises are more particularly described upon drawings accompanying this application. The Applicant intends to apply for Special Exemption Orders.

Dated: 11th November, 2013
LEE & SHERLOCK SOLICITORS
Solicitors for the Applicant

5F, Nutgrove Office Park
Rathfarnham, Dublin 14

To: The Superintendent
An Garda Síochána
Greystones Garda Station
Greystones, County Wicklow

To: Greystones Town Council
Civic Offices, Mill Road
Greystones, Co. Wicklow

To: The Superintendent
An Garda Síochána
Rathfarnham Garda Station
Rathfarnham, Dublin 14

To: The Chief Fire Officer
Wicklow Fire Service HQ
Boghall Road, Bray
County Wicklow

COMPANIES ACTS, 1963 to 2009
NOTICE OF APPOINTMENT
OF RECEIVER

LARABROOK LIMITED
(In Receivership)

Notice is hereby given that on 1st November, 2013, David Swinburne and Deirdre Sheahan both of KPMG, 90 South Mall, Cork, were appointed Joint Receivers of and over all of the assets of the Company referred to in and charged by the following security documents:

- Deed of Debenture dated 8th January, 1998, between (1) Larabrook Limited and (2) Ulster Bank Ireland Limited.
 - Deed of Mortgage/Charge dated 27th April, 1998, between (1) Larabrook Limited and (2) Ulster Bank Limited.
 - Deed of Mortgage/Charge dated 10th February, 2004, between (1) Larabrook Limited and (2) Ulster Bank Ireland Limited.
 - Deed of Mortgage/Charge dated 22nd June, 2007, between (1) Larabrook Limited and (2) Ulster Bank Ireland Limited.
 - Deed of Mortgage/Charge dated 22nd June, 2007, between (1) Larabrook Limited and (2) Ulster Bank Ireland Limited.
 - Deed of Mortgage/Charge dated 22nd June, 2007, between (1) Larabrook Limited and (2) Ulster Bank Ireland Limited.
 - Deed of Mortgage dated 24th August 2004 between (1) Larabrook Limited and (2) First Active plc
- Dated 8th November 2013
RONAN DALY JERMYN
Solicitors

2 Park Place, Citygate Park
Mahon, Cork

COMPANIES ACTS, 1963 to 2009

In Memoriam

Con O'Donovan

CORK AND MACROOM

ACKNOWLEDGEMENT AND FIRST ANNIVERSARY
The family of the late Con O'Donovan, Curraheen, Bishopstown, would like to sincerely thank family, friends and neighbours who sympathised with us. Sincere gratitude to the nurses and doctors of the CUH. A special word of thanks to Con's friends and colleagues in UCC. The Holy Sacrifice of the Mass will be offered for your intentions.
(Sadly missed by his loving wife, Mary, brother Jerry, sons, daughters and grandchildren)

In Memoriam



Helen Burke

COBH

TENTH ANNIVERSARY
In loving memory of a dear wife, mother and grandmother, HELEN, who died on Nov. 11th, 2003.
We hold you close within our hearts,
And there you shall remain,
To walk with us throughout our lives,
Until we meet again.
(Always remembered by Jim, James, Billy, Shane and all her friends)



Mary Healy

16TH ANNIVERSARY

In loving memory of our dear mother, MARY HEALY, St Vincent's, Lower Magazine Road, who died on November 11, 1997.
Will those who think of her today,
A little prayer to Jesus say.
(Ever remembered by her loving family Breda, Eithne, Maura, Carmel, Denis and Dermot)

BUCKLEY: In loving memory of MARIE, 3 Blackrock Park, Mallow, whose anniversary occurs at this time. (Always remembered by her loving family)

BUTLER (16th Anniversary): In loving memory of our loving mother MARY, who died on November 11, 1997. R.I.P. Masses offered. Your life was love and labour,
Your love for your family true,
You did your best for all of us,
We will always remember you.
(From your loving daughter Margaret and your son Paudie)

BUTLER (16th Anniversary): In loving memory of my Mother MARY, who died on November 11, 1997. R.I.P. I thank you for the years we shared,
The love you gave,
The way you cared,
Silent memories keep you near,
As this time unfolds another year.
(From your loving daughter Bridget)

BUTLER: In loving memory of my grandmother MARY, who died on November 11, 1997. Masses offered.

In Memoriam

In Memoriam



Arthur Kelleher

LOWER FARRAN,
OVENS, CO CORK

In loving memory of ARTHUR, whose Eighth Anniversary occurs today.
Let us live like you in the love of the Lord.
(Sadly missed by his wife Noreen and family)



Maria Smyth

NINTH ANNIVERSARY

Happiness was when you were in our lives
(Fondly remembered by family and friends)

McSWEENEY first anniversary In loving memory of our beautiful, brave and courageous little boy, DONAGH JEREMIAH DAVID McSWEENEY, who died on Remembrance Sunday 11th November 2012 aged 3½ years.
"In the end it's not the years in your life that count.
It's the life in your years"
Always on our minds forever in our hearts.
(Loved by your Dad Dave, Mum Geraldine (nee Daly) and sisters Aimee and Gina)

MORRISON (Fourth Anniversary): Cherished memories of TOM, late of 5 Old Cork Road, Middleton who died on November 11, 2009. Masses offered. Silent memories keep you near,
As time unfolds another year.
(Loved and remembered by his wife and family)

MORRISON (Fourth Anniversary): Cherished memories of TOM, late of 5 Old Cork Road, Middleton who died on November 11, 2009. Masses offered. Silent memories keep you near,
As time unfolds another year.
(Loved and remembered by his wife and family)

O'LEARY In loving memory of PATRICK O'LEARY, Knocklucy, Ballinhassig, who died on November 11, 2009.
You are our inspiration.
(His loving family)

Irish Examiner
FAMILY NOTICES

Death Notices

BROWNE (Cork and Cloyne): On November 10, 2013, peacefully, in his 101st year, at CareChoice, Ballymoe, TIM, Riverview Estate, Ballyvolane, dearly loved husband of the late Ellen (Nell) and much loved father of Maurice. Sadly missed by his loving son, daughter-in-law Fiona, grandson Paul, nephews, nieces, relatives and friends. Lying in repose at the Coburg Street Funeral Home of Jerh. O'Connor Ltd. Removal at 8pm on this (Monday) evening to St. Joseph's Church, Mayfield. Requiem Mass at 11am on tomorrow (Tuesday). Funeral afterwards to St. Colman's Cemetery, Cloyne, Co. Cork.
May he rest in peace.

COVENEY (Youghal): On November 9, 2013, peacefully, in the presence of his loving family, at Marymount Hospice, Cork, MICHAEL. Deeply regretted by his loving wife Bridget, daughter Jacqueline, son Michael, sisters, brothers, daughter-in-law, son-in-law, grandchildren, nephews, nieces, relatives, neighbours and friends. RIP. Reposing in Egan's Funeral Home, Greencloyne, Youghal from 5pm on this (Monday) evening. Rosary at 6.45pm, followed by removal to St Mary's Parish Church. Requiem Mass on tomorrow (Tuesday) at 2pm. Burial afterwards in the North Abbey Cemetery, Youghal.

CRONIN (Cork): On November 9, 2013, peacefully, at Cork University Hospital, PATRICK (PADDY), Sycamore Place, Toghre, dearly loved husband of Mary (May, nee Madden) and loving dad of Daniel, Patrick, Gerard, Colette (Hurley), Angela and Paschal and dear brother of Donie, Seán, Bernard and the late Austin. Sadly missed by his loving wife and family, brothers, daughters-in-law, son-in-law, grandchildren, great-grandson, sisters-in-law, nephews, nieces, relatives and friends. Lying in repose at the Wilton Funeral Home, Sarsfield Road of Jerh. O'Connor Ltd. Removal at 6.30pm on this (Monday) evening to Church of The Way of The Cross, Toghre. Requiem Mass at 11am on tomorrow (Tuesday). Funeral afterwards to St. James' Cemetery, Chetwynd.
May he rest in peace.

DINAN (Douglas Road, Cork): On November 9, 2013, peacefully, at Marymount Hospice, SHEILA (nee O'Regan), devoted mother of Gerard, Brian and Ann-Marie and loving grandmother of Cian and little angel Emma-Jayne (RIP). Sadly missed by her loving sons and daughter, their dad Tim, their partners Deborah, Christine and Cameron, sisters Catherine Nott and Margaret Jackson, brothers Dermot and Michael, brothers-in-law Eamonn and Tony, sisters-in-law Patricia and Christina, nephews, nieces, relatives and a large circle of friends. Lying in repose at the Temple Hill Funeral Home, Boreenmanna Road of Jerh. O'Connor Ltd. Removal at 8.30pm on this (Monday) evening to Church of Our Lady of Lourdes, Ballinlough. Requiem Mass at 2.00pm on tomorrow (Tuesday). Funeral afterwards to St. Catherine's Cemetery, Killycully. Family flowers only. Donations, in lieu, to Marymount Hospice.
May she rest in peace.

A.7 Type of Waste Activity, Tonnages & Fees

A.7.1 Specify the class or classes of activity in Table B.7.1, in accordance with the Third Schedule or Fourth Schedule to the Waste Management Acts 1996 to 2010, as amended by the European Communities (Waste Directive) Regulations, 2011, to which the application relates (check the relevant box(es) and mark the principal activity with a ‘P’).

Attachment B.7 should identify the principal activity and include a brief technical description of each of the other activities specified. **There can only be one principal activity.**

TABLE B.7.1 THIRD AND FOURTH SCHEDULES OF THE WASTE MANAGEMENT ACT 1996, AS AMENDED.

Waste Management Act 1996, as amended.					
Third Schedule Waste Disposal Operations		Y/N	Fourth Schedule Waste Recovery Operations		Y/N
D 1	Deposit into or on to land (e.g. including landfill, etc.).	P	R 1	<p>Use principally as a fuel or other means to generate energy: This includes incineration facilities dedicated to the processing of municipal solid waste only where their energy efficiency is equal to or above:</p> <ul style="list-style-type: none"> - 0.60 for installations in operation and permitted in accordance with applicable Community acts before 1 January 2009, - 0.65 for installations permitted after 31 December 2008, <p>using the following formula, applied in accordance with the reference document on Best Available Techniques for Waste Incineration:</p> $\text{Energy efficiency} = \frac{E_p - (E_f + E_i)}{0.97 \times (E_w + E_f)}$ <p>where—</p> <p>‘Ep’ means annual energy produced as heat or electricity and is calculated with energy in the form of electricity being multiplied by 2.6 and heat produced for commercial use multiplied by 1.1(GJ/year),</p> <p>‘Ef’ means annual energy input to the system from fuels contributing to the production of steam (GJ/year),</p> <p>‘Ew’ means annual energy contained in the treated waste calculated using the net calorific value of the waste (GJ/year),</p> <p>‘Ei’ means annual energy imported excluding Ew and Ef(GJ/year),</p> <p>‘0.97’ is a factor accounting for energy losses due to bottom ash and radiation.</p>	N
D 2	Land treatment (e.g. biodegradation of liquid or sludgy discards in soils, etc.).	N	R 2	Solvent reclamation/regeneration.	N

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D 3	Deep injection (e.g. injection of pumpable discards into wells, salt domes or naturally occurring repositories, etc.).	N	R 3	Recycling /reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes), which includes gasification and pyrolysis using the components as chemicals.	N
D 4	Surface impoundment (e.g. placement of liquid or sludgy discards into pits, ponds or lagoons, etc.).	Y	R 4	Recycling/reclamation of metals and metal compounds.	Y
D 5	Specially engineered landfill (e.g. placement into lined discrete cells which are capped and isolated from one another and the environment, etc.).	N	R 5	Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.	Y
D 6	Release into a water body except seas/oceans.	N	R 6	Regeneration of acids or bases.	N
D 7	Release to seas/oceans including sea-bed insertion.	Y	R 7	Recovery of components used for pollution abatement.	N
D 8	Biological treatment not specified elsewhere in this Schedule which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12.	N	R 8	Recovery of components from catalysts.	N
D 9	Physico-chemical treatment not specified elsewhere in this Schedule which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12 (e.g. evaporation, drying, calcinations, etc.).	N	R 9	Oil re-refining or other reuses of oil.	N
D 10	Incineration on land.	N	R 10	Land treatment resulting in benefit to agriculture or ecological improvement.	N
D 11	Incineration at sea (this operation is prohibited by EU legislation and international conventions).	N	R 11	Use of waste obtained from any of the operations numbered R 1 to R 10.	N
D 12	Permanent storage (e.g. emplacement of containers in a mine, etc).	N	R 12	Exchange of waste for submission to any of the operations numbered R 1 to R 11 (if there is no other R code appropriate, this can include preliminary operations prior to recovery including pre-processing such as, amongst others, dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending or mixing prior to submission to any of the operations numbered R1 to R11).	Y
D 13	Blending or mixing prior to submission to any of the operations numbered D 1 to D 12 (if there is no other D code appropriate, this can include preliminary operations prior to disposal including pre-processing such as, amongst others, sorting, crushing, compacting, pelletising, drying, shredding, conditioning or separating prior to submission to any of the operations numbered D1 to D12).	Y	R 13	Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).	Y
D 14	Repackaging prior to submission to any of the operations numbered D 1 to D 13.	N			

D 15	Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).	Y			
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ATTACHEMENT B.7 CLASS OR CLASSES OF ACTIVITY

The **Principal Activity** at the site is Class D1 of the Third Schedule of the Waste Management Acts 1996 as amended namely:

Class D1. Deposit into or onto land (e.g landfill, etc.)

This application proposes to remediate the East Tip by re-profiling the existing landform and constructing a Perimeter Engineered Structure (PES), an engineered cap and surface water drainage system. It is not proposed to accept any further waste for disposal within the site.

During the construction stage of the project it is proposed to collect, re-circulate and infiltrate surface water and seepages from the perimeter of the site to settlement tanks, ponds or lagoons prior to discharge to the groundwater flux underlying the waste body.

For these reasons Class D4 and Class D7 of the Third Schedule (Waste Disposal Activities) of the Waste Management Acts 1996 as amended have been included.

Class D4. Surface impoundment (e.g placement of liquid or sludgy discards into pits, ponds, lagoons, etc.)

Class D7. Release into seas/oceans including sea-bed insertion

During construction it will be necessary to excavate some material and stockpile it pending placement in areas that require infilling to meet the re-profiling requirements of the site to facilitate the capping system. Furthermore, some excavated material may require separation and screening for onward recovery and the remaining material backfilled. In addition, material may be encountered which requires removal off site for treatment or disposal. For these reasons Class D13 and Class D15 of the Third Schedule (Waste Disposal Activities) of the Waste Management Acts 1996 as amended is included.

Class D13 Blending or mixing prior to submission to any of the operations numbered D 1 to D 12 (if there is no other D code appropriate, this can include preliminary operations prior to disposal including pre-processing such as, amongst others, sorting, crushing, compacting, pelletising, drying, shredding, conditioning or separating prior to submission to any of the operations numbered D1 to D12).

Class D15. Storage pending any of the operations numbered D1 to D14 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).

It is also proposed to include Class R4 and Class R5 of the Fourth Schedule (Waste Recovery Activities) of the Waste Management Acts 1996 as amended as it is proposed to recover scrap metal, slag, C&D waste and potentially millscale during the construction phase. Scrap metal and millscale material will be removed off site for further recovery/recycling if feasible, while it is proposed to reuse the slag and C&D material within the PES and drainage system where feasible.

Class R4. Recycling/ reclamation of metals and metal compounds

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Class R5. Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials

Processing of certain materials excavated on site may be carried out to produce materials that are suitable for use in the remediation works. This may include C&D waste and slag which could be used for construction of the PES and drainage layers subject to them meeting the physical and chemical properties required. Processing may include screening, separating, washing, drying or other processes required to produce a suitable material. It will also be necessary to stockpile this material pending laboratory test results to determine the chemical suitability of the material for reuse. For these reasons it is proposed to include Class R12 and Class R13 of the Fourth Schedule (Waste Recovery Activities) of the Waste Management Acts 1996 as amended.

Class R12. Exchange of waste for submission to any of the operations numbered R1 to R11 (if there is no other R code appropriate, this can include preliminary operations prior to recovery including pre-processing such as, amongst others, dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending or mixing prior to submission to any of the operations numbered R1 to R11).

Class R13. Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

TABLE B.7.2 MAXIMUM ANNUAL TONNAGE

The maximum annual tonnage of waste to be handled at the site should be indicated and the year to which the quantity relates indicated.

Maximum Annual Tonnage (tpa)	Not Applicable ^{Note 1}
Year	1960's to 2001

Note 1: The East Tip is an area of land reclaimed by infilling with process waste from the adjacent steelworks. The proposed EPA waste licence application covers an area of 11.8 hectares. It is estimated that approximately 650,000m³ (1.3 – 1.7 million tonnes) of waste material was deposited at this site since the start of the steelworks operation in the 1960s up until 2001. However the exact quantity is unknown. It is not proposed to accept any further waste for disposal at the site. This licence application is for the remediation of the East Tip to reduce or eliminate risks associated with waste material on site. The proposed remediation design is based on the DQRA (Detailed Quantitative Risk Assessment).

Please refer to Chapter 5 (Project Description) and Chapter 6 (Construction Activities) of the EIS for further details.

B.7.3 FEES

State each class of activity for which a fee is being submitted as per Part I of the Second Schedule of the Waste Management (Licensing) Regulations 2004, S.I. No. 395 of 2004. Note: two fees are required if disposal and recovery are to occur.

Waste Activity	Fee (in €)
Disposal of Waste (appropriate disposal activity 1.1 – 3.3)	30,000 (Activity 2)
Recovery of Waste (4)	10,000 (Activity 4)
	40,000

TABLE B.7.4 (FOR A LANDFILL APPLICATION)

STATE WHICH OF THE FOLLOWING IS RELEVANT TO THE CURRENT APPLICATION.

(a) landfill for hazardous waste	<input checked="" type="checkbox"/>
(b) landfill for non-hazardous waste	<input type="checkbox"/>
(c) landfill for inert waste	<input type="checkbox"/>

Note: While this application is for a hazardous waste licence, the majority of waste present is non-hazardous.

TABLE B.7.5 (FOR A LANDFILL APPLICATION)

In accordance with the requirements of Article 9(b) of the Landfill Directive, state the total quantity of waste for which authorisation is sought to be deposited in the landfill – complete the following table:

Total quantity of waste to be deposited at the landfill facility	Tonnes*	Void in cubic metres (m ³)
(a) Waste deposited to date	1.7 million tonnes	Not Applicable
(b) Total waste to be deposited over lifetime of development (<u>including deposited to date</u>)	1.7 million tonnes	Not Applicable

* Explain any conversion/density factors used in calculating tonnage from void, or vice versa.

The East Tip is an area of land (approximately 9 hectares) reclaimed from the sea by infilling with processing waste. It is thought that the deposition of steel making waste on the East Tip of Haulbowline Island has been taking place since the 1960's (KTC, 1995) but intensified in the late 1970's (EA, 2002) and continued until 2001. Drawing DG1005 delineates the extent of waste on the site up until 2008.

In 2008, WYG estimated the approximate percentage composition of the East Tip waste material. Applying both the average bulk density for material in East Tip specified in the DQRA Addendum (Appendix A of the EIS) and conversion factors specified in the Waste

WASTE Application Form

Facility Permit and Registration Regulations Guidance Manual 2012 coupled with calculated conversion factors for scrap metal ($5t/m^3$) and slag ($3t/m^3$), it is estimated that there is between 1.3 – 1.7 million tonnes of waste deposited at the East Tip (based on approximate estimate of $650,000m^3$ deposited at the site). For the purposes of this application the maximum extent of waste within the East Tip is assumed (1.7 million tonnes- please refer to DG1006).

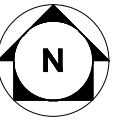
In 2013 Cork County Council commissioned RPS to investigate the extent of waste at East Tip in the foreshore zone. The anticipated extent of wastes and deposited materials arising from these investigations is outlined in Drawing DG1006. These site investigations have identified waste in the foreshore of the East Tip which, in some locations, extends to the mean low water mark (MLWM). Please refer to Chapter 5 (Project Description) for further detail and Figure 1.2 of the EIS.

Section H of this application details the estimated waste types and quantities present on site.

It should be noted that this application is for the remediation of existing waste on site. It is not proposed to accept any further waste for disposal at the East Tip site.

ATTACHMENT B.7.5

DG1005- Site Progression drawing
DG1006- Existing Site Layout drawing



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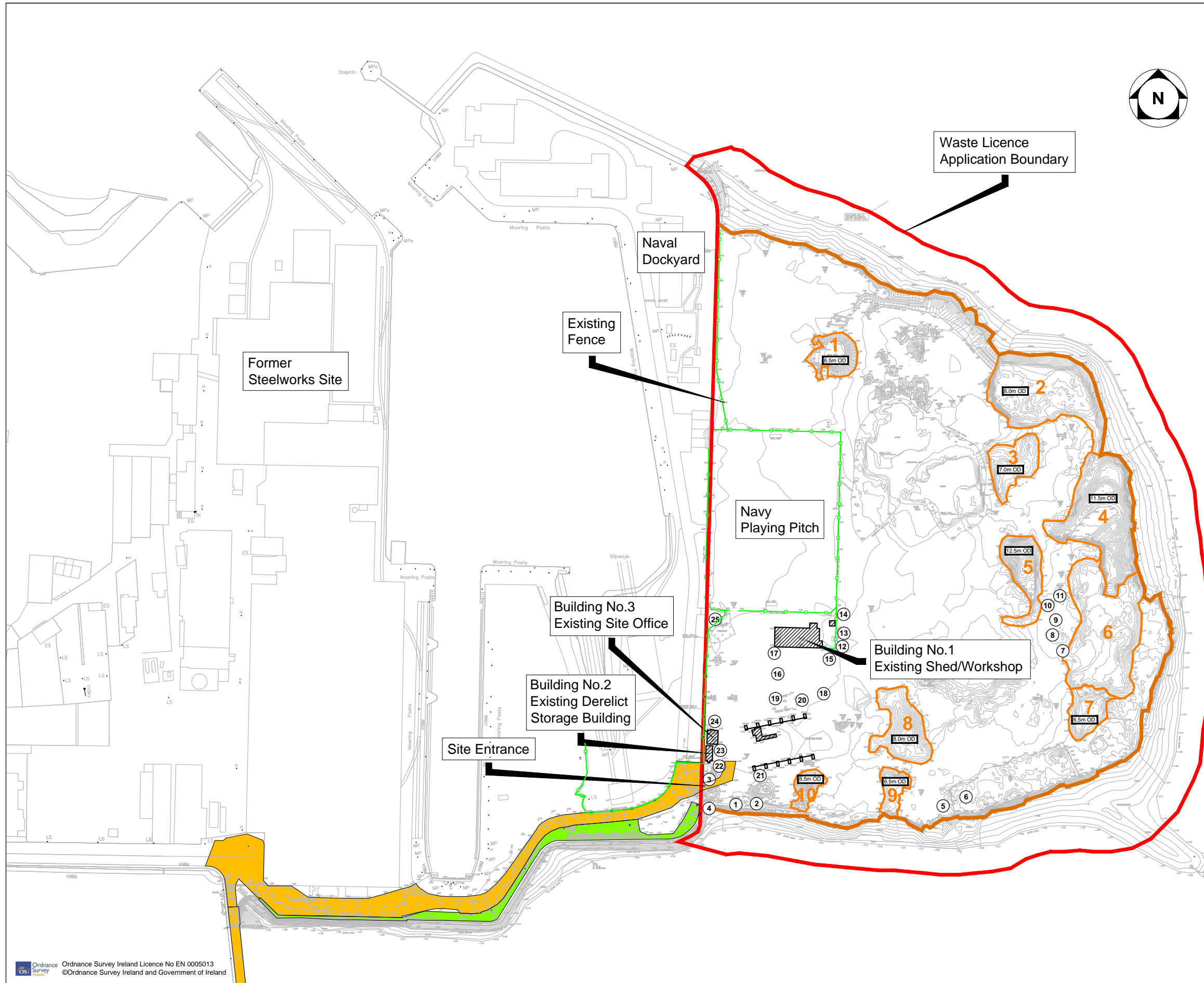
No.	Date	Drawn/Checked	App	Amendment / Issue
F01	07.11.13	RH/ER		FINAL ISSUE
A01	24.04.13	RH/ER		ISSUE FOR APPROVAL
D01	Apr. '13	RH/ER		DRAFT ISSUE

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Drawn	RH	Project	EAST TIP REMEDATION PROJECT	
Checked	ER			
Approved	ER			
Date	March, 2013	Title	SITE PROGRESSION PLAN	
Scale	NTS @ A1 1:2500 @ A3			
Job No.	MCE0734	File Ref.	MCE0734DG1005F01.dwg	Rev.
		Drg. No.	DG1005	F01



LEGEND

- Waste Licence Application Boundary
- Bottom of Bank of Bulk Waste
- Existing Fencing
- Existing Slag Heaps
- 25 Existing On-site Structures
- Existing Road
- Existing Grassed Area
- 12.5m OD High Point on Slag Heap

INVENTORY OF ALL ON-SITE STRUCTURES

ID	Description
1	Steel Lighting Mast
2	Steel "Blacksmiths Hammer"
3	Steel Heat Exchangers
4	Storage Tank
5	Mobile Conveyor Belt
6	Steel Trailer
7	Steel Trailers (2 no.)
8	Steel Slag Screener
9	Steel Conveyor Belt
10	Steel Container
11	Steel Retaining Walls
12	Diesel Storage Tank
13	Diesel Pump
14	Steel Framed Two-Storey Storage Building
15	Engine Parts
16	Articulated Trailer
17	Steel Portal Framed Shed
18	Truck
19	Steel Gantry Crane
20	Steel Storage Tank
21	Steel Gantry Crane
22	Steel Container
23	Masonry Single-Storey Building
24	Masonry Two-Storey Building
25	Steel Lighting Mast

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No.	Date	By	Check	Amendment / Issue	App
F01	07.11.13	RH	ER	FINAL ISSUE	ER
A01	24.04.13	RH	ER	ISSUE FOR APPROVAL	ER
D02	Apr. 13	RH	ER	DRAFT ISSUE	ER
D01	Apr. 13	RH	ER	DRAFT ISSUE	ER
No.	Date	By	Check	Amendment / Issue	App



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Drawn RH	Project	EAST TIP REMEDATION PROJECT	
Checked ER			
Approved ER			
Date March 2013	Title	EXISTING SITE LAYOUT PLAN	
Scale NTS @ A1 1:2500 @ A3			
Job No. MCE0734	File Ref. MCE0734DG1006F01.dwg	Drg. No. DG1006	Rev. F01

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B.8 SEVESO II DIRECTIVE

State whether the activity is for the purposes of an establishment to which the European Communities (Control of Major Accident Hazards involving Dangerous substances) Regulations, 2006 (S.I. No. 74 of 2006), apply.

Regulations Apply	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
--------------------------	------------------------------	--

If yes, **Attachment B.8** should include the relevant details. Supporting information, as well as copies of any Hazardous Operation Studies (HAZOP) carried out for the site, should also be included in the attachment.

Attachment B.8 Seveso II Directive

In November 2008, White Young Green Ireland (WYG) on behalf of the Department of the Environment, Heritage and Local Government (at the request of the HSA) classified stockpile material at East Tip site to establish whether the requirements of the Seveso II Directive 96/82/EC are applicable to the site.

The European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2006 came into force in February 2006, and implements the Seveso II Directive 96/82/EC, on the control of major accident hazards involving dangerous substances.

The Regulations apply to establishments where dangerous substances are present in amounts equal to or exceeding the application thresholds. There is a two tier system depending on the quantities involved.

Based on the quantity of certain substances present, it was concluded that the East Tip site does not require regulation under the European Communities (Control of Major Accident Hazards involving dangerous substances) Regulations 2006.

Please refer to the Attached Report 'Seveso II Directive Classification, WYG Ireland, November 2008' for further details.



SECTION C MANAGEMENT OF THE FACILITY

Advice on completing this section is provided in the *Guidance Note*.

C.1 Technical Competence and Site Management

This information should form **Attachment C 1**.

Details of the applicant's experience and qualifications, along with that of other relevant employees, should be summarised as shown below. Statements of duties, responsibilities, experience and qualifications should be submitted for each position named below. Additional information, including the management structure and an organisational chart, should be included in **Attachment C 1**.

Attachment C 1 Technical Competence and Site Management

The applicant (the Minister for Agriculture Food and the Marine) has appointed Cork County Council as agent to oversee the regularization of the site. On the Minister's behalf, Cork County Council will appoint a suitably qualified and experienced consultant to carry out the detailed design for remediation works and upon completion Cork County Council will appoint suitably qualified and experienced contractor(s) to carry out the remediation works (construction phase). This process will be subject to independent peer review as appropriate.

The following section sets out the roles and responsibilities of the principal parties involved in the construction of the proposed remediation solution. The roles and responsibilities outlined below are indicative, based on experience of similar contracts, and these will be updated upon appointment of Employer's Representatives, Designers and the Contractor. Any such updates as relevant shall be notified to the relevant consenting authority and detailed in the updated Construction Environmental Management Plan (CEMP) to be prepared by the appointed Contractor.

The responsibilities of the Contractor's site staff shall be as follows:

Project Manager /Contracts Manager

The Contractor's Project Manager for the Works reports directly to the Contractor. He/she is responsible for:-

- (a) The development and implementation of the CEMP including:-
- The development and implementation of the Dust Management Plan;
 - The development and implementation of the Odour Management Plan;
 - The implementation of the Traffic Management Plan;
 - The implementation of an Invasive Species Management Plan;
 - The development and implementation of the Surface Water Management Plan;
 - The implementation of the Asbestos Management Plan ;
 - The implementation of the Landscape Management Plan.
 - The implementation of all construction phase mitigation measures and relevant conditions specified in the waste licence, planning consent and foreshore consent.
- (b) Management of the overall Project Programme;
- (c) Co-ordinating the construction teams/contractors;
- (d) Management of quality issues relating to the project
- (e) Implementing the Contractor's Health and Safety Plan;
- (f) Liaison with the client representative staff;
- (g) Preparation of a Communications Plan

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- (h) Production of construction programmes; and
- (i) Maintaining a project diary.

Site Agent

The Contractor's Site Agent reports to the Project Manager. He/She is responsible for:-

- (a) Implementing the Construction Environmental Management Plan;
- (b) Management of the project, particularly in relation to the remediation works;
- (c) Management of all plant and labour activities relating to the section of works for which he is responsible;
- (d) Ensuring that method statements are in place
- (e) Implementing the Contractor's Health and Safety Plan;
- (f) Liaison with the client representative staff;
- (g) Production of construction programmes; and
- (h) Maintaining a project diary.

Senior Engineers

The Contractor's Senior Technical Engineers report to the Project Manager. They are responsible for:-

- (a) Implementing the Construction Environmental Management Plan;
- (b) Materials procurement;
- (c) Design of Temporary Works;
- (d) Administration;
- (e) Programming and planning;
- (f) Implementing the Contractor's Health and Safety Plan; and
- (g) Maintaining a project diary.

Health and Safety Officer

The Contractor's Health and Safety Officer for the Works is appointed by the Contractor and reports to the Project Manager. He/She is responsible for:-

- (a) Carrying out the duty of Health & Safety Coordinator at Construction Stage;
- (b) Safety induction of all staff and personnel on site;
- (c) Implementing the Dust Management Plan;
- (d) Implementing the Asbestos Management Plan;
- (e) Implementing the Contractor's Health and Safety Plan; and
- (f) Auditing the Site Health and Safety and updating the H&S Plan as necessary.

Environmental Officer

The Environmental Officer is appointed by the Contractor and reports to the Project Manager. He/she is responsible for:-

- (a) Implementing the Environmental Requirements of the CEMP and updating it as necessary in particular ensuring the mitigation and monitoring measures specified in the EIS, waste licence, planning consent and foreshore consent are incorporated into the CEMP
- (b) Management of all environmental aspects of the construction works;
- (c) Ensuring all relevant mitigation measures are implemented as required;
- (d) Ensuring all monitoring proposals are implemented in accordance with EIS and Waste Licence;
- (e) Ensuring Dust, Invasive Species, Odour, Surface Water, Noise, Traffic and Asbestos Management Plans are implemented;
- (f) Reviewing monitoring results;
- (g) Training of staff in all environmental issues;
- (h) Provision of Tool Box talks to contractors as required;

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- (i) Ad-hoc environmental inspections;
- (j) Liaison with the client representative staff (Environmental Clerk of Works);
- (k) Auditing the construction works from an environmental viewpoint;
- (l) Maintaining regular contact and liaison with environmental specialists;
- (m) Producing update reports on environmental compliance;
- (n) Reporting on any non-compliances;
- (o) Implementing measures for ensuring close out of non compliances;
- (p) Implementing ecological enhancement measures outlined in Chapter 14;
- (q) Inspection of drainage system to ensure its operating effectively;
- (r) Advise on relevant archaeological issues including liaison with the site archaeologist who will be on site to supervise all construction related topsoil stripping, excavation and ground disturbance works; and
- (s) The Environmental Officer will coordinate and be the site focal point for communication with the Environmental Clerk of Works (COW).

In addition to the above, Cork County Council will appoint an Environmental Clerk of Works to oversee environmental works carried out by the contractor. Responsibilities will include:

- (a) Liaise with the Contractor and the Environmental Officer in relation to environmental matters;
- (b) Check to ensure the contractor is adhering to the CEMP;
- (c) Check to ensure the contractor is implementing the specified mitigation measures and monitoring requirements;
- (d) Ensure measures are being carried out in accordance with the relevant standards and best practice;
- (e) Liaise with relevant statutory bodies.

The following figure illustrates the on-site management structure.

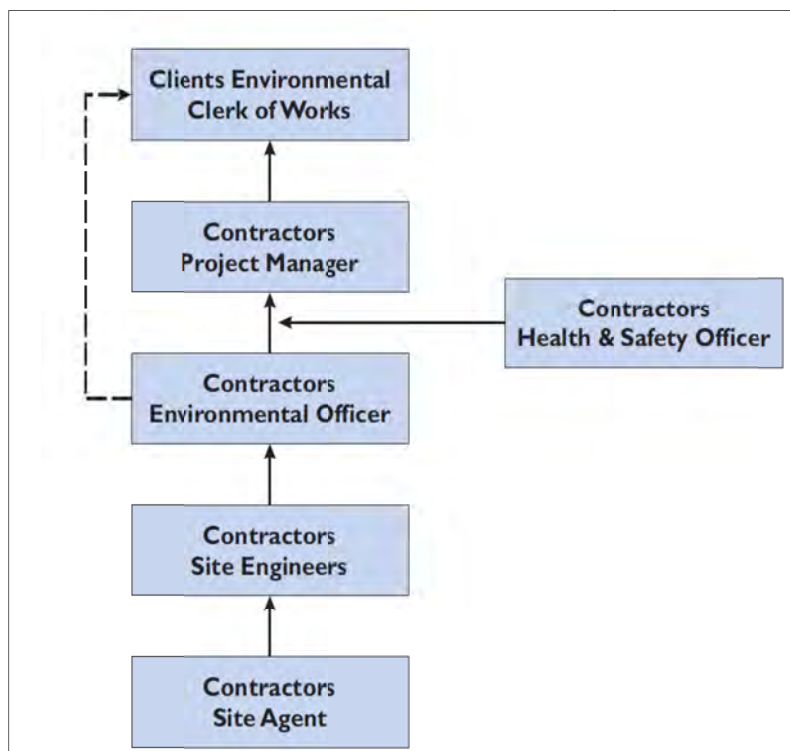


Figure C.1 Site Environmental Management Structure



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Following completion of the remediation (construction) works, a suitably qualified and experienced party will be appointed to carry out any aftercare requirements, such as monitoring, maintenance of equipment etc. Details of qualifications and experience including management structure and organisation charts will be submitted to the EPA as required.

C.2 Environmental Management System

Attachment C 2 should contain the Environmental Management System (EMS) details required.

Attachment C.2 Environmental Management System

An Environmental Management System (EMS) will be developed to cover both the Construction phase of works and the Enduse and Maintenance Phase of the project. It will form part of the overall management system for the site and will deal with the environmental issues relating to construction of remediation works and the control of potential environmental impacts during and after construction. The EMS will be developed in accordance with the requirements of ISO14001 and ISO9001. An integral part of the EMS will be the preparation of an Environmental Management Plan (EMP) for the Construction and End use and Maintenance phases. This document will act as a site manual to inform the Construction and End use and Maintenance phases of work.

The EMP for the site will include as a minimum the elements specified below;

- Environmental Policy
- Environmental Objectives & Targets
- Management Procedures, method statements and mitigation measures to include requirements of the EIS, Waste Licence, Planning consent and foreshore consent
- Structure, roles and responsibility
- Communication Protocols
- Monitoring requirements
- Non-conformances, corrective & preventative action
- Records Procedure
- Audit and Review

Environmental Policy Statement

An environmental policy should be developed which is appropriate to the nature and scale of the environmental aspects of the East Tip site. This document should be implemented and maintained. It should be communicated to all employees and made available to the public if requested. A signed policy should be displayed in the site office.

Objectives and Targets (O&T)

O&T are important in directing and assessing an EMS and help to maintain a high standard of environmental performance. The setting of the O&T should be based on environmental policy and environmental considerations, which are significant. Objectives should be divided into individual targets where appropriate, but which sum to achieve the overall environmental objective.

O&T should be demanding, qualitative, subject to timescale, achievable and fair. O&T should also be reviewed on an annual basis and contained in the Annual Environmental Report and the Environmental Management Programme.

Procedures and Method Statements (to include mitigation measures)

Procedures and Method Statements should describe the manner of carrying out a relevant activity and should be clear, logical and understandable. Both procedures and method statements are an essential part of the environmental management system.

Structure, Roles and Responsibility

Clear management structures should be defined for the facility. Experienced staff comparable with the level of expertise required should be assigned to each role.

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Communications Plan

A Communications Plan is important as it documents the communication protocol for interested parties.

Monitoring

Environmental monitoring at the facility should be undertaken in accordance with the requirements of the Waste Licence, Planning Consent and Foreshore Consent. Monitoring equipment should be calibrated when required and records maintained. Samples should be analysed at an accredited laboratory. Procedures should be developed to ensure monitoring is carried out.

Non-Conformances, Corrective and Preventive Action

A corrective action procedure should be established to define who is responsible to investigate non-conformances and to determine corrective action to be taken.

Records

Environmental records are required as:

- Verification of the on-going operation of the EMS.
- To provide information for reporting to the Environmental Protection Agency as per licence requirements
- To meet legal and regulatory requirements

Record requirements will be included as part of the individual procedures.

Audits and review

Audits of the site should be undertaken to ensure that licence requirements are being met and Environmental Management System is being properly implemented and maintained.

A review to reconsider the effectiveness of the Environmental Management Plan and Objectives set out as a result of changing circumstances, commitment to continual improvement and to initiate any required change should also be carried out.

Please refer to Chapter 6 of the EIS for details on specific requirements to be included in the Construction EMP for the East Tip.

C.3 Hours of Operation

Attachment C 3 should contain details of hours of operation for the waste facility, civic waste facilities and other facilities.

- (a) Proposed hours of operation.
- (b) Proposed hours of waste acceptance/handling.
- (c) Proposed hours of any construction and development works at the facility and timeframes (required for landfill facilities).
- (d) Any other relevant hours of operation expected.

Attachment C.3 Hours of Operation

(a) This will not be an operational landfill facility.

(b) It is not proposed to accept any waste for disposal at the site. Existing waste materials present on site will be handled as part of the construction and development phase of works.

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(c) The proposed hours of construction and development works at the facility and associated timeframes are as follows:

- 7.00am - 7.00pm Monday to Friday; and
- 9.00am and 4.00pm on Saturdays.

However, depending on the construction methodology adopted by the Contractor, the installation of the PES may involve an element of working with the tidal cycle. In this instance an extended working day may be preferable to the Contractor in order to optimise work during periods of low water.

It is estimated that the construction programme will take up to 18 months to execute.

Working hours for works required in the tidal area of the East Tip:

During periods where low water is achieved outside the normal working hours as outlined above an extended day, up to a 24hour work period, may be required. Works undertaken outside the normal working hours to accommodate the tidal cycle will be limited to works in the foreshore area where tides have an impact.

Work in the tidal area which requires an extended day will be agreed in advance with the EPA. In addition to this every effort will be made by Cork County Council and the appointed Contractor to notify the residents of the surrounding areas of the extended working hours and the reasons for them. In this regard it should be noted that the site Contractor will be required to conform with relevant standards and regulations for Health and Safety on site (*Safety, Health and Welfare (Construction) Regulation 2006*), which will mitigate any risks to the temporary working community.

Haulage of materials hours:

- 9.30am - 6.00pm Monday to Friday; and
- 9am-3pm on Saturdays.

The primary construction activities and associated timelines are provided in the following table:

Table C.3.1 Phasing of Works

Item	Indicative Programme	Construction Activity
Contractor Mobilisation & Compound Set-Up	Months 1 and 2	Mobilisation Remedial road works required prior to importation of materials (month 1) Set up the site compound (offices, welfare facilities, storage areas, canteen) Demolition and Site Clearance Removal of waste off site Regrading of site and side slopes Commence processing of material on site Commence importation of topsoil/subsoil/rock armour/PES materials/geosynthetic materials Creation of Stockpile areas Temporary surface water management
Construction	Months 2 to 4	Continue processing of material on site Continue regrading of site Construction of Perimeter Engineered Structure (PES)/tidal protection i.e. rock armour/Pull back of waste at foreshore & associated temporary works Continue Importation of topsoil/subsoil/rock armour/PES and horizontal barrier materials/geosynthetic materials Ongoing pavement remedial works as necessary
Construction	Month 5 - 10	Continue processing of material on site Placement of rock armour– may happen in tandem with PES construction Removal of temporary works e.g. coffer dam if constructed Regrading of surface of site Preparation of surface for lining Application of regulation layer Placement of Liner including anchoring in PES Placement of Surface Water Geocomposite Placement of subsoil Continue importation of topsoil/subsoil (if required quantity not met to date) Ongoing pavement remedial works as necessary
Construction	Months 11 – 14	Construction of Surface Water Drainage System Continue importation of topsoil (if required quantity not met to date) Ongoing pavement remedial works as necessary
End Use and Landscaping	Months 14 -18	Continue Importation of topsoil (if required quantity not met to date) Topsoiling Landscaping Construction of car park Construction of pavement layers for the access road (from the public car park to the amenity site (excluding the bridge). Construction of footpaths, kerbs etc. Construction of pathways, recreational areas etc Ecological enhancement areas.

It should be noted that the above programme is intended to give a general indication of the sequence and timescales associated with the various elements of work. This could change

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significantly depending on particular methodologies for the works proposed at tender stage and also depending on the availability of materials to be imported.

Should the contractor's preferred construction methodology adopt a principle of working with the tides –i.e. execute works when the tide is out and abandon works when the tide is in, then this may result in an extension to the programme. Alternatively it may also result in the working day being extended to capitalise on periods of low water particularly during spring tides.

Furthermore, the importation of materials for the capping system and PES may commence at the beginning of the programme, if such materials are available at the time. If early importation does occur the contractor shall be required to establish a dedicated stockpile area in which to store imported material.

Further details on Construction activities are provided in Chapter 6 (Construction Activity) of the accompanying EIS.

SECTION D INFRASTRUCTURE & OPERATION

D.1 Infrastructure

Complete the following table detailing the site infrastructure. **Attachment D 1** should contain the appropriate documentation. Information provided should follow the sequence, and use the headings, established in Table D.1. Additional advice on completing this section is provided in the application *Guidance Note*.

Table D.1. Infrastructure		y/n	Comments
D.1.a	Site security arrangements including gates and fencing	y	Refer to section D.1.a below
D.1.b	Designs for site roads	y	Refer to section D.1.b below
D.1.c	Design of hard-standing areas	y	Refer to section D.1.c below
D.1.d	Plant	y	Refer to section D.1.d below
D.1.e	Wheel-wash	y	Refer to section D.1.e below
D.1.f	Laboratory facilities	n	Refer to section D.1.f below
D.1.g	Design and location of fuel storage areas	y	Refer to section D.1.g below
D.1.h	Waste quarantine areas	y	Refer to section D.1.h below
D.1.i	Waste inspection areas	n	Refer to section D.1.i below
D.1.j	Traffic control	y	Refer to section D.1.j below
D.1.k	Sewerage and surface water drainage infrastructure	y	Refer to section D.1.k below
D.1.l	All other services	y	Refer to section D.1.l below
D.1.m	Plant sheds, garages and equipment compound	y	Refer to section D.1.m below
D.1.n	Site accommodation	y	Refer to section D.1.n below
D.1.o	A fire control system, including water supply	y	Refer to section D.1.o below

D.1.p	Civic amenity facilities	n	Not Applicable
D.1.q	Any other waste recovery infrastructure	y	Refer to section D.1.q below
D.1.r	Composting infrastructure	n	Not Applicable
D.1.s	Construction and Demolition waste infrastructure	y	Refer to section D.1.s below
D.1.t	Incineration infrastructure (if applicable). Provide information to fulfil Article 4 (2) & (3) of the Incineration of Waste Directive	n	Not Applicable
D.1.u	Any other infrastructure	n	Not Applicable

Attachment D.1 Infrastructure

D.1a Site security arrangements including gates and fencing

Existing

Haulbowline Island is currently linked to the main land via a bridge from Ringaskiddy. Access to the East Tip is controlled by a single barrier at the northern end of the Haulbowline access bridge. Once access through the barrier is gained, an access road runs to the south of the former Ispat site and the Naval Dockyard and leads to the security gate at the south western corner of the site.

The Irish Naval Dockyard borders the western boundary of the East Tip. The western boundary is approximately 400m long. There is a 2.4m high security fencing almost continuous along this boundary. The fencing comprises approximately 150m of chainlink fence from the curve of the sea wall at the north of the common boundary to the northern end of the existing playing pitch. There is a gap in fencing of approximately 7-10m where a building on the Navy property forms the boundary with the playing pitch; there is a small gap just south of this building between the building and the fence. Chainlink fencing is then provided along the remainder of the western side of the playing pitch, bar the access gate, and continues south to a point close to the naval dock security hut (>200m). From this point, palisade fencing is provided (c.30m). A double palisade security gate (6-7m) is located in this area, which provides access to the East Tip at the south west corner.

The playing pitch is also fenced off with chainlink fencing on its northern, eastern and southern sides. Access is permitted from the Naval Dockyard only, other than access for environmental testing purposes via the East Tip.

Cork Harbour borders the north, south and eastern border of the site. The coastal perimeter of the site measures approximately 900m in length.

At present access is restricted and any person entering the East Tip site must attend a site induction prior to entry, sign a visitors register and wear appropriate Personal Protective Equipment.

Construction Phase

During the construction period it will be a requirement for the appointed Contractor to ensure the site is secure from trespassers for the duration of the construction works.

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The existing lockable vehicular entrance gate to East Tip located at the south western corner of the site will be maintained during construction and requirements for accessing the site will be maintained in accordance with the Contractor's requirement as part of the fulfilment of his duties as Project Supervisor Construction Stage (Safety, Health and Welfare at Work (Construction) Regulations 2006) i.e. site induction, PPE, visitors sign in records etc.

End-use, Maintenance and Aftercare Phase

As part of the remediation works it is proposed to construct 2 x 2 lane carriageways one leading to the East Tip and the other leading to the Naval Dockyard. This will allow two-way traffic flow to the remediated East Tip and Naval Dockyard and the roads will be separated by a security fence. Having separate access roads will allow for designated traffic routes for Navy traffic and visitor traffic to the remediated East Tip.

Two footpaths will be also be provided, one for Navy use and one for Public use to allow pedestrians to safely gain access to the site from the L2545 once the site is remediated. Please refer to Drawing DG1009h and DG1009i.

Two additional lockable security gates will also be provided, one at the end of the bridge (in vicinity of existing barrier) and the other at the start of the road to the East Tip. The former is to facilitate the lock down of the Island by the Navy if a security situation were to arise. The location of the latter gate at the entrance roundabout will allow any cars traversing the bridge to turn around if necessary.

As part of the remediation works, the East Tip site will be converted to a landscaped parkland area that will serve as a public amenity. In addition to this the remediation area shall include a Football/ GAA pitch. Please refer to Drawing DG1008a.

The parkland area will open during daylight hours only. At all other times, the facility will be closed off by locking entrance gates.

The Football/GAA pitch, which is located at the west side of the East Tip, will be fenced off with access only from the Naval Base. A 2.4m high green security fence will be provided on three sides with the existing chain link fence on the Navy boundary side replaced. A gate suitable for vehicular access will be provided along the Navy boundary fence.

Security fencing will be installed along the western boundary of the East Tip (adjacent to Naval Dockyard)

D.1b Design of Site Roads

Given that as part of the remediation works the East Tip is to be converted to a parkland amenity there shall be no end-use requirement in terms of site roads with the exception of the short section of access road leading from the site entrance to the car park, access within the site after development as a parkland amenity will be limited to footpaths. Where new permanent pavements are to be provided within the site boundary including the short section of access road from the entrance to the rear car park, these will be constructed in line with the permanent details prescribed in Section 8.3 of Chapter 8 (Traffic and Transport) of the EIS.

Designated haul routes for the construction stage within the remediation area will be agreed with the Contractor in advance of the Construction works as part of his Traffic Management Plan (TMP) for the works.

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In addition to this, as part of the remediation works the Contractor will be required to affect a number of off-site road improvement works along the access route to the East Tip. These improvement works include the following:

Improvements to Access Roads in Advance of Construction

As detailed in Chapter 8 "Traffic and Transport" of the EIS on pavements along Sections 1, 2 and 3 it is proposed that some remedial works take place in advance of construction (please refer to Section 8.3.5 of Chapter 8 "Traffic and Transport" of the EIS). These remedial works will be confined to the areas that are showing the most significant signs of distress. The pavement will need to be assessed on an on-going basis during the construction phase and it may be necessary to carry out some additional remedial works during the construction phase.

Improvements to Access Roads Post Construction

As detailed in Chapter 8 "Traffic and Transport" of the EIS following completion of the import and export of material to/from the East Tip site, it is proposed that a new pavement (overlay or full pavement construction) be provided along the entire length of Sections 1, 2 and 3 and upgrades to the footpaths will be undertaken as outlined in Section 8.3.5 of Chapter 8 "Traffic and Transport" of the EIS.

D.1c Design of hardstanding areas

Hardstanding areas will be constructed where required to facilitate the construction phase of the remediation. A preliminary site layout plan has been prepared for the construction phase (please refer to drawing DG1007a) which details proposed locations for potential hardstand/semi-hardstand areas such as the site compound area, stockpile storage areas, slag processing area and quarantine area. The location and design of the hardstanding areas will be finalized at detailed design stage.

Drawing DG1007b details the typical phasing of works for the construction stage.

In addition to this, post remediation, as part of the landscape plan a car park area is proposed. (Please refer to Drawing DG1008a)

Construction Phase

Site Compound

At the commencement of the remediation works, the Contractor will set up a site compound, which will include site offices, welfare facilities, storage areas, canteen, laboratory for asbestos testing (if required) at the area shown on Drawing DG1007a.

The area shown is indicative and will be confirmed on the appointment of the Contractor. In addition to the area as shown on Drawing DG1007a, it is expected that the Contractor appointed to the works and Cork County Council will establish offices off site for the purposes of general contract administration.

It should be noted that for the final phase of works, i.e. the capping of the area and installation of the section of the PES that falls within the proposed area for the site compound, the site compound will need to be relocated. At that stage the number of personnel and plant on site should be reduced and a smaller compound can be facilitated within the balance of the site area.

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Processing and Stockpile Area

It is proposed that slag material is to be re-used on site as an engineering fill (see Section 6.4.1 of Chapter 6 "Project Construction" of the EIS) and an area will be set aside for the processing of such material. This processing area may move depending on the location of the source material on site, but in any case the location of the processing area will have due regard to sensitive receptors and will operate within the requirements of the waste licence with respect to noise and dust etc.

Designated areas will also be set aside for the stockpiling of imported materials. Such areas may include the existing pitch. Areas for stockpiling will be prepared to ensure there is no cross contamination of imported materials with the waste material on site.

Quarantine area

A quarantine area will also be provided for the storage of any suspect material uncovered on site as part of the remediation work pending transfer off site, if deemed necessary, to an appropriate waste disposal or recovery facility.

Wheelwash area

Sufficient hard standing area will be required between the wheel wash unit and the site entrance to ensure washed vehicles have sufficient length of hard stand to maximise removal of soil material from vehicles prior to exiting the site.

Detailed design of the above areas will be determined by the appointed contractor.

All of these hard standing areas will be removed as part of the conversion of the site to a parkland amenity.

End-use, Maintenance and Aftercare Phase

Car Park

As part of the landscape plan for the remediated East Tip a car park is proposed. The proposed car park can accommodate approximately 54 spaces (including 4 mobility impaired spaces and bicycle spaces) and will be laid out in asphalt with concrete kerbs. (Please refer to drawing DG1008a).

D.1d Plant

Section C.3 of this application details the plant and equipment required for the Construction phase and End use of the facility.

It should be noted that this is an indicative list of anticipated plant and equipment associated with the various stages of work. The Contractor may require additional plant to be mobilised at any stage of the works to ensure that the works can be carried out safely to the required standards and to an agreed programme.

D.1 e Wheel-wash

The contractor will also be required to ensure that all local roads, including the access road to the site, are maintained and kept clean as far as is reasonably practicable. This shall be achieved by providing a self contained wheelwash and sufficient hard standing area for parked vehicles and sufficient length of hard standing between the wheel wash facility and the site entrance to ensure that there is maximum removal of soil material prior to exiting the site. The wheel wash water will be recycled within this unit in order to reduce the quantity of water required and to reduce the quantity of waste water generated.

In addition to this the Contractor shall be required to employ road sweepers to ensure local roads are kept clean and free of debris which may have originated from the site during construction.

D.1.f Laboratory facilities

It is not proposed to have laboratory facilities on site. It is proposed that the contractor will retrieve the necessary samples and have adequate facilities in place to facilitate the preparation and storage of samples for the duration of the construction phase. Samples will be sent to an accredited laboratory for independent analysis.

D.1g Design and location of fuel storage areas

Fuel required for mechanical excavators and generators on site shall be contained in a designated fuel point of the Contractor's choice to ensure that surface water and ground water is protected from potential adverse impacts. The fuel storage facility will be double bunded and comply with the necessary regulations and EPA IPC Guidance Note on –'The Storage and transfer of materials for scheduled transfer', 2004.

D.1h Quarantine area

In the event that construction works uncover a waste type that requires off site disposal, then measures to remove and dispose/recover such materials will be undertaken in accordance with the Construction Environmental Management Plan. Such measures will include the provision of a waste quarantine area where suspect material will be placed pending removal if deemed necessary.

D.1i Waste inspection areas

It is not proposed to have a waste inspection area as no waste will be accepted at the site.

D.1j Traffic control

A Traffic Management Plan will be prepared prior to Construction works onsite and shall be in accordance with the requirements as set out in Chapter 8 "Traffic and Transport" of the EIS.

D.1k Sewerage and surface water drainage infrastructure

Construction Phase

Surface Water Drainage

The appointed contractor will be required to prepare a surface water management plan which will be incorporated into the Construction Environmental Management Plan prior to commencement of construction works on site. Please refer to Section F of this application for further details.

During reprofiling of the site and construction of the PES, it is proposed to allow infiltration of surface water into the waste body and collect recirculate and infiltrate marine water seepage into the waste body.

Several infiltration areas will be used to spread the recirculation. These infiltration areas may have to be supplemented by settlement tanks or ponds provided by the contractor to ensure that there is no localised head build up or wash out.

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The Contractor will be required to address this issue as part of his surface water management plan as part of the CEMP. Contaminated water from 'hot spots' uncovered during excavation may have to be tanked off site for further treatment.

Further detail is provided in Section 13.4 of Chapter 13 (Soils, Geology and Hydrogeology) of the EIS.

Sewage/ Wastewater

The appointed contractor will provide suitable temporary sanitary facilities for site workers for the duration of construction works. Such facilities will be removed following construction works. In addition to this a self contained wheel wash unit will be provided. The water in the wheel wash unit shall be recycled however there may be an intermittent requirement to treat some of the waste water from the unit. It shall be a requirement that all wastewater generated on site is disposed of appropriately in a wastewater treatment facility.

Please refer to Section F of this application for further details.

End-use, maintenance and aftercare Phase

Surface Water Drainage

There will be two aspects to the surface water drainage on the remediated East Tip site, the sub-surface drainage system and the 'top of cap' surface water drainage system (refer to Drawings DG1009d-f). These systems are explained in more detail below.

Sub-Surface Drainage System

The purpose of the sub-surface drainage system will be to collect surface water which percolates through the top 1m of soil capping layer and reaches the low permeability barrier layer. The sub-surface drainage system will take this water away from the low permeability barrier layer and will ensure that the soil capping layer remains relatively free draining. The subsurface drainage systems will consist of the following elements:-

- A geo-composite drainage layer or equivalent 300mm drainage stone layer. The minimum conveyance of these layers will be equivalent to the maximum permeability of the subsoil capping layer.
- Field drains – given the nature of the East Tip site and the naturally low lying areas that will remain following the re-profiling of the site the subsurface drainage system may need additional augmentation through the use of field drains.

It is the intention that the sub-surface drainage system will discharge, for the most part, to the top of cap surface water drainage system prior to discharge to the Cork Harbour. There may be some instances to the east of the site where it may be necessary for the sub-surface drainage to discharge directly to the Cork Harbour via a diffuse drainage channel.

The subsurface drainage system shall consist of a geocomposite drainage layer or a 300mm layer of drainage stone. Where geocomposites are used, these will be held in place through the use of an anchor trench at the top of slopes. Low ground pressure vehicles may have to be used for the placement of material over the geocomposite. Should drainage stone be used it will be placed with care to ensure that there is no damage to the capping system.

'Top of Cap' Surface Water Drainage System

The purpose of the top of cap surface water drainage system will be to collect surface water from the surface areas, attenuate the flow and reduce sediments where necessary prior to discharge.

It is proposed that the top of cap surface water drainage system will include a number of sustainable urban drainage systems (SUDS) such as:-

- French drain systems;
- Swales;
- Contour drains; and
- Wetland area – to provide attenuation and also a beneficial ecological habitat.

Depending on the nature of the surface water system (*active drainage* – French drains or *flow + attenuation* – swale, contour drains and wetland area) the surface water drainage system will be designed for a 1 in 2 year short duration high intensity storm or 1 in 100 year return period storm. Attenuation will be designed to limit outflow to green field run-off rates.

It should be noted that, while the top capping layer is underlain by a low permeability liner, the surface of the remediated site will not act like a low permeability surface. The top 1m soil capping layer will allow a portion of the precipitation that falls on the East Tip to naturally percolate through this soil layer prior to being collected by the sub-surface drainage system. In addition to this the top 1m of the soil capping layer will be vegetated allowing evapotranspiration at normal rates and a significant element of sediment removal.

The majority of the surface water flow generated on site will discharge initially to the wetland area. A portion will also discharge to the swale. Following attenuation in the swale and wetland, surface water collected on the site will discharge to the Cork Harbour area via diffuse drainage channels where possible. It will also be necessary to have some point discharges which will operate as an emergency overflow to the drainage systems during exceedances of the design return period.

The 'top of cap' drainage systems will be constructed in accordance with the NRA 'Specification for Road Works', "The SUDS Manual" CIRIA C697 and "The Site Handbook for the Construction of SUDS" CIRIA C698.

Sewage/ Wastewater

It is not proposed to install a sewerage system on site for the End use, Maintenance and Aftercare of the site.

Please refer to Section F of this application for further details.

D.1 I All other services

It is not proposed to intensify the existing public lighting along this improved access road. However, an existing lighting column may need to be moved or replaced.

D.1m Plant sheds, garages and equipment compound

Construction phase

The appointed contractor will determine the plant sheds, garages and equipment compounds required to facilitate construction works. In any event all such facilities will be located within the site compound boundary identified on Drawing DG1009a with the exception of the existing steel shed on site which may be maintained by the Contractor to facilitate the works.

End-use, Maintenance and Aftercare Phase

No permanent buildings are proposed as part of the landscape masterplan which has been prepared for the East Tip.

D.1n Site accommodation

Construction phase

Please refer to Section D.1c above for site accommodation details.

End-use, Maintenance and Aftercare Phase

No permanent building are proposed as part of the landscape masterplan which has been prepared for the East Tip. Please refer to Dg1008a.

D.1o A fire control system, including water supply

The appointed contractor will be required to take all reasonable measures to prevent the outbreak of a fire on site during construction works and to ensure, as far as reasonably practicable and in line with their obligations in accordance with all relevant Safety, Health and Welfare Regulations, the safety of persons on site.

The contractor will be required to install appropriate fire fighting equipment on site. Furthermore, the contractor will be required to ensure the temporary site compound is constructed on a hardstanding area and surrounded by a berm to ensure the containment of fire water should an incident occur.

Should an incident occur fire water will be tankered off-site for treatment if required.

D.1p Civic amenity facilities

As it is not proposed to develop a Civic Amenity at the site this is not applicable.

D.1q Any other waste recovery infrastructure

Infrastructure will be required for the recovery of slag material and metal compounds.

It is proposed to recover slag material for use in the Perimeter Engineered Structure (PES) and in the drainage layer. This material accounts for approximately 64% (412,880 m³) of the material on site. It is proposed to recover this material by excavation, crushing, screening and washing existing material on site to achieve the required engineering grade. Therefore plant to facilitate this activity will be required on site.

Metals account for approximately 7% (43,225 m³) of waste material on site. It is proposed to collect and recover approximately 10,000 tonnes of scrap metal from the site (5tonnes/m³) plus scrap metal recovered from the demolition of existing buildings and the gantry cranes. Scrap metal shall be picked from the surface of the site using an excavator and grab. Metals will be extracted from the lower levels using a magnet which may also be used to remove scrap metal from processed material following the crushing process. The collection of scrap will be dependent on market value at the time of construction and the grade of the scrap. Scrap metal will be removed off site for final recovery.

Options for the removal and recovery of millscale will also be explored. It is estimated that approximately 400m³ (600 tonnes) of stockpiled material on site is millscale. Potential recovery will be dependant on market value and demand at the time of proposed works. If this material cannot be recovered, then it will be used within the reprofiling works.

Please refer to Chapter 5 of the EIS for further details.

D.1r Composting infrastructure

It is not proposed to develop composting infrastructure at the site. This is therefore not applicable.

D.1s Construction and Demolition waste infrastructure

There is currently a large stockpile of C&D material on site. It is proposed that this material may be processed on site and re-used as part of the remediation works on site where appropriate (subject to testing and approval requirements). It should be noted that this material may also be used as a general fill in order to achieve the formation level contours.

Any processing activity associated with the C&D waste shall be similar to that as outlined in section D.1q of this application.

**D.1t Incineration infrastructure (if applicable).
Provide information to fulfil Article 4 (2) & (3) of the Incineration of Waste Directive**

It is not proposed to develop incineration infrastructure at the site. This is therefore not applicable.

D.1 u Any other infrastructure

Monitoring infrastructure as detailed in Section F of this application is proposed.

A Perimeter Engineered Structure (PES) is to be constructed around the East Tip. Further detail is provided in Section D2 of this application.

D.2 Facility Operation

In **Attachment D 2** describe the plant, methods, processes and operations of the waste facility, as required by the *Guidance Note*.

The requirements of article 12(1)(t bis) of the Licensing Regulations should be addressed in **Attachment D.2** by outlining the main alternatives to the proposals contained in the application which were studied by the applicant.

Attachment included	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>	not applicable <input type="checkbox"/>
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Attachment D.2 Facility Operation

The East Tip will not operate as a landfill. As this application is for the remediation of an existing landfill it is considered that the operational phase and the end-use phase are the same phases. Details of the proposed remediation works and process flow / sequencing of same are detailed in Section C.3 and Section D.1 of this application. This section of the application addresses the possible remediation options and the preferred proposed remedial option.

In addition, this section shall address the management and maintenance plans associated with the parkland end-use.

D2.a Alternative Remedial Solutions

Chapter 4 “Assessment of Alternatives” of the accompanying EIS provides significant detail on the main alternatives and should be read in conjunction with this section of the application. It describes the main alternatives considered for the remediation of the East Tip and the main reasons these options were not adopted for the proposed development. Alternative design options and alternative construction methods were considered taking into account technical aspects, including the risk posed by the site as presented in the DQRA, and likely environmental impacts. This was done to ensure the design options and construction methods proposed for the remediation of the East Tip result in the least environmental impact.

Section 7 of the DQRA (See Appendix A of the EIS) outlines that *‘the primary aim of any remediation will be to mitigate risks to human health and reduce the contaminant flux to the waters of Cork Harbour and secondly to prevent erosion of the waste material into Cork Harbour.’* In addition to this the DQRA states *“...the sensitivity analysis indicated that decreasing the lateral hydraulic conductivity to 10^{-5} m/s would be sufficient to reduce the theoretical impact of dissolved phase contaminant discharge into the harbour”*. It is on this basis that alternatives were considered.

A number of ex-situ and in-situ technologies were reviewed, the details of which are presented in **Table D.2.1** along with the main environmental and technical aspects associated with each of the options.

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Table D.2.1: Alternative Solutions

Item	Option	Description	Environmental Considerations	Technical Considerations
1	Do Nothing	Leave site in its current state.	<p>Risk to human health through direct contact and ingestion of waste.</p> <p>Potential for contaminants to leach from the waste and enter the water as the Harbour water is flowing through the site resulting in a <u>theoretical</u> impact in the immediate vicinity of the East Tip (i.e. within 50m). It should be noted that this impact has not been recorded as part of the surface water monitoring programme of the waters surrounding the East Tip</p> <p>Potential for erosion of the East Tip and contaminant release.</p>	Remediation required to avoid risks to human health through direct and indirect (air and water) pathways.
Available Ex-Situ Remedial Technologies				
1	Removal of materials off site –no treatment.	Removal of all materials and disposal off site and no treatment of the material.	<p>Significant volumes of haulage traffic associated with this option potentially resulting in significant impacts to the community including impacts from traffic congestion, noise and air pollution.</p> <p>Significant risk to marine environment due to the nature of construction works that would be required, particularly when excavating waste down to original sea bed level.</p> <p>Requirement to identify suitable site(s) for disposal. Unlikely that such a site currently exists in Rol.</p> <p>Possible requirement to import significant volumes of material from a fill. replacement perspective.</p> <p>Health and safety risks for workers.</p> <p>Risk posed by the site as</p>	<p>Lengthy programme.</p> <p>Nature of waste would be difficult to excavate.</p> <p>Waste would have to be excavated down to original ground which because of settlement is several metres lower than it was prior to filling. Would require extensive temporary works.</p> <p>Controls required in marine environment.</p> <p>Constraints (technical and economic) associated with securing suitable disposal site(s) for the volume and nature of material</p>

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			presented in the DQRA does not warrant this level of remediation.	present at the East Tip.
2	Removal of all materials and off site – treatment	Removal of all materials off site and ex-situ treatment of all materials.	<p>General environmental considerations as outlined for point 1 above.</p> <p>Transference of risks to another site.</p> <p>Risk posed by the site as presented in the DQRA does not warrant this level of remediation.</p>	In addition to those outlined for point 1 for this option the end-use or outlet for treated waste would be needed.
In-Situ Remedial Technologies				
1	In-situ treatment of waste using Stabilisation/Solidification techniques.	The addition of a binder or additive to lock up the contaminants .	<p>The level of excavation required in order to execute these works would be significant and therefore could present a potentially significant impact from a noise, air, surface water, groundwater and marine perspective.</p> <p>Health and safety concerns associated with the works.</p> <p>Potential to change physical characteristics of materials on site with unknown long term consequences.</p> <p>Risk posed by the site as presented in the DQRA does not warrant a remediation solution of this nature</p>	<p>Stabilisation and solidification techniques would require the use of chemical additives which would have to be appropriately managed on site but which may increase the risk of a spillage incident.</p> <p>And other similar considerations as included in point 1 of the ex-situ remediation technology.</p>
2	Remediation of East Tip using low permeability* capping and low permeability* perimeter system.	The use of a low permeability perimeter system to either cut off the pathway of groundwater flow or to reduce contaminant loading as it passes through the perimeter system.	<p>Meets requirements of remedial solution outlined in DQRA. However, the risk posed by the site as presented in the DQRA does not warrant a remediation solution of this nature.</p> <p>Could result in a change in the current groundwater flow beneath the site.</p> <p>Potential increase in (contaminated groundwater) levels within the waste.</p>	<p>Could result in rise in leachate levels within the waste in short term which would require ongoing maintenance systems for leachate management (pumping and treatment) and bowsers/tankers to remove leachate from the site for treatment at an appropriate waste water</p>

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			Use of such highly engineered system is not proportionate to risks highlighted in DQRA.	treatment plant.
3	Remediation of East Tip using low permeability* capping and reactive barrier.	As above but with the use of a low permeability capping and a reactive barrier.	Meets requirements of remedial solution outlined in DQRA. Use of such highly engineered system not proportionate to risks highlighted in DQRA.	Maintenance systems required including leachate management and ongoing requirement for replacement and disposal of reactive barrier material.
4	Remediation of East Tip using low permeability* capping and permeable perimeter system (The Perimeter Engineered Structure).	Capping and PES	Meets requirements of remedial solution outlined in DQRA. Protection of human health.	Meets requirements of remedial solution outlined in DQRA.

*Note – for the purposes of the EIS and Waste Licence Application the term low permeability is defined as a maximum permeability of $1 \times 10^{-9} \text{m/s}$

The DQRA recommended a preferred approach of pathway management involving the use of a capping or cover system across the top of the site and installation of a perimeter engineered structure (PES). Due to the unique setting of the East Tip i.e. an island of waste within Cork Harbour, ex-situ treatment approaches were not considered further given the risk posed by the site as presented in the DQRA does not warrant this level of remediation, the environmental and technical difficulties associated with such technologies as outlined in Table D.1 above and also the significant costs that would be associated with these works with limited and possibly no long term environmental benefits and higher environmental risks in the short term. Similarly, in-situ treatment of waste was not considered further due to the risks associated with this method which could include potential impacts to sensitive receptors from noise and dust and potential impacts to surface, ground and marine waters which would not be acceptable especially given the fact that the risk posed by the site does not warrant this level of remediation. Use of low permeability or reactive barriers as part of the perimeter system, although they would still meet the aims of remediation, were not considered further on the grounds of sustainability due to the requirements for on-going pollution control and maintenance systems and the additional costs associated with the installation and management of these systems when the risk posed by the East Tip, as outlined in the DQRA, does not warrant this level of remediation.

Please refer to Chapter 4 (Assessment of Alternatives) of the EIS for further details.

Proposed Preferred Option – Remediation of East Tip using low permeability capping layer and Perimeter Engineered Structure.

Capping layer

The DQRA has concluded that a low permeability capping system is required on the horizontal surface of the East Tip. The DQRA states that “*The capping system will break the pathway associated with risks to human health by preventing direct contact with the identified lead, arsenic and asbestos for future site users, and secondly it will reduce infiltration of rainwater and therefore contaminant leaching to groundwater and migration to the Cork Harbour*”(Refer to Appendix A of the EIS:DQRA).

A Waste Characterisation study has been conducted, the results of which are presented in Appendix C ‘*East Tip Remediation Classification of Slag Waste*’ (RPS, 2013) of the EIS. This study has demonstrated that the majority of the waste deposited at East Tip is non-hazardous however a (minor) fraction of the waste is hazardous and cannot be isolated. The EU Landfill Directive on Waste sets out specific requirements with respect to the capping of hazardous waste landfills and these requirements have been transposed into the EPA Landfill Site Design Manual. These requirements provide a prescriptive solution to the risks posed by hazardous waste sites which include risks to human health, surface water and groundwater from the contaminants within the wastes, However Section 3.4 of Annex 1 of the Landfill Directive states that the requirements of paragraphs 3.2 and 3.3 (relating to lining and capping systems) may be reduced accordingly if it has been established that the landfill poses no potential hazard to soil, ground water or surface water. The remediation of this site will be carried out under a hazardous Waste Licence as this is the statutory mechanism used to ensure that the proposed works and the methods to achieve the same are appropriately regulated and carried out. This project is however a remediation project rather than a landfill project and the remediation solution has been informed primarily by the DQRA which has been prepared for the site. Therefore whilst the Design Manual and the EPA Landfill BAT guidance note can be used as guidance, they should not prescribe the proposed capping system for this site. It is more appropriate that the detailed design for the capping system at the East Tip is undertaken having regard to CIRIA Special Publication 106 - Remedial Treatment for Contaminated Land - Volume VI: Containment and hydraulic measures and other associated CIRIA documents where relevant and is based on the risk posed by the site as detailed in the DQRA.

Therefore the proposed capping system design will be based on the particular risks and generic recommendations as set out in the DQRA. Based on this and the proposals for the end-use the proposed capping system should contain a subsoil and topsoil layer to provide support for landscaping and vegetation. It should also contain a sub-surface drainage layer and alternatives include a geocomposite drainage layer or drainage stone, either of which is acceptable. A barrier layer is also required to act as a separation layer between the future public users and the contaminants in the underlying waste. It is considered that a low permeability layer such as LLDPE, a 600mm low permeability clay layer or a geosynthetic clay liner are appropriate barriers. Given that the waste deposited at East Tip is non-putrescible and is not producing gas it is considered that a gas collection layer is not required.

It is considered that there are limited alternative options that can be considered in relation to the capping system required for the East Tip. The capping system proposed above meets the requirements of the recommendations in the DQRA and will enable the site to be converted to amenity use as a public park. It is commensurate with the level of risk posed by the site and appropriately breaks the source-pathway-receptor linkages. On this basis it is considered that the proposed capping system constitutes use of ‘Best Available Techniques’ (BAT). A typical detail of the capping system for the remediation of contaminated land is detailed on drawing DG1009b and is described in Chapter 5 ‘Project Description’ of the EIS.

Perimeter Engineered Structure (PES)

As described in Chapter 5 'Project Description' of the EIS a permeable perimeter engineered structure is proposed as the design solution for the East Tip site in conjunction with the engineered capping system. A perimeter engineered structure (PES) will be installed around the East Tip at the location as identified on Drawings DG1007a and b (Figure 1.2 Section 5.3.1.3 of the EIS). The overall purpose of the PES is to reduce and control the flow of seawater through the site and potential flow of leachate out of the site on the outgoing tide in order to lower groundwater contamination movement and prevent erosion of bulk waste material into Cork Harbour (see Chapter 14 'Ecology' of the EIS for further details on the control of leachate from the site). The PES will have a maximum permeability of 1×10^{-5} m/s.

The DQRA states that "...the sensitivity analysis indicated that decreasing the lateral hydraulic conductivity to 10^{-5} m/s would be sufficient to reduce the theoretical impact of dissolved phase contaminant discharge into the harbour". Therefore the installation of the PES with the proposed maximum permeability of 1×10^{-5} m/s meets the requirements of the DQRA and the sensitivity analysis conducted therein.

The installation of a PES will remove the requirement to actively manage leachate generated within the East Tip site. Therefore, not only does the PES remove the risk associated with potential contaminant flux from the waste body to the Cork Harbour waters, it also represents a more environmentally sustainable solution and a more cost effective solution than a low permeability perimeter system.

The PES will require routine inspection and maintenance however this will be minimal when compared to the maintenance requirements which would be associated with other perimeter systems (e.g. reactive barriers).

The potential for the re-use of processed slag as outlined in Chapter 6 (Project Construction) of the EIS as part of the PES presents an opportunity to minimise the impact of the importation of the fill required to create the PES. Should the re-use of slag to form the perimeter system be approved this will further support the environmentally sustainable nature of the proposed PES.

It is on this basis that the installation of a permeable PES is considered use of BAT for the remediation of Haulbowl East Tip and as such the impacts associated with the installation of a permeable PES have been assessed as part of the preparation of the EIS.

Proposed PES

Full details of the proposed PES are provided in Chapter 5 (Project Description) of the EIS and the proposed construction of same is provided in Chapter 6 (Project Construction) of the EIS and Drawing DG1009a.

Position of the PES

As described in Chapter 5 (Project Description) and Chapter 6 (Project Construction) of the EIS the position of the PES has been selected in order to encapsulate the majority of the material in the East Tip whilst also having due cognisance of issues pertaining to constructability and potential impacts during the construction stage, particularly the control and management of sediments from the construction works which is a concern expressed by a number of bodies and which has been addressed in the EIS. At all locations there is a minimum of 5m between the outer most line of the PES and the mean Low Water Mark (LWM) and, along the western boundary, a minimum of 10m between the outermost line of the PES and the top of the old 19th century sea wall. It is estimated, based on site

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investigations undertaken to date, that approximately 5% of the waste deposited at the East Tip site will remain permanently outside the proposed PES.

In addition to this an average side slope of 1:3 has been selected as the average side slope of the finished PES along the boundary with the Cork Harbour (please refer to Drawing DG1009a for cross section details of the PES (Figure 5.1 and 5.2 of the EIS). This is the current average side slope around the perimeter of the East Tip and has been selected in order to minimize the amount of regrading that will be required in order to facilitate the installation of the PES. It is accepted that this gradient may change at detailed design stage and for this reason a typical detail showing a 1:1.5 side slope has also been included on DG1009a (Figure 5.1 in Chapter 5 (Project Description) of the EIS).

Alternatives to the Creation/Construction of a PES

There are a number of different alternatives that may be selected at detailed design or at Tender stage for the construction of the PES. These alternatives are as detailed in Chapter 6 'Project Construction' of the EIS. The list of alternatives detailed in Chapter 6 'Project Construction' is not exhaustive and whilst the specifics may alter at detailed design or at Tender Stage the impacts associated with the possible alternatives have been assessed as part of the EIS.

Based on an engineering assessment the recommended minimum thickness of the PES is 0.5m. However based on a number of factors, including constructability, it is recommended that the PES has a minimum thickness of 1m. As detailed in Chapter 5 'Project Description' this can be provided through the construction of an engineered berm or wedge or trench or a combination of these elements constructed of engineering fill. Three options for the creation of the PES have been provided in drawing Dg1009a.

Materials for Construction of PES

The materials required for the construction of the PES are outlined in Chapter 5 (Project Description) and Chapter 6 (Project Construction) of the EIS.

Alternative Construction Methods for the installation of the PES

The exact nature of the construction of the PES will not be determined until detailed design or Tender Award Stage. The reason for this being that there are a number of different construction methods which may be employed in order to achieve the minimum requirements of the PES.

A Technical Dialogue has been conducted with a number of contractors with experience working in the marine environment and on waste and contaminated sites to explore the various different options for the construction of the PES. The Technical Dialogue proved that there were a number of ways the requirement for the PES, as set out in Chapter 5 'Project Description' of the EIS, could be achieved (Refer to Appendix F: Technical Dialogue Report of the EIS).

Some possible temporary works methods to facilitate the construction of the PES are outlined below but it should be stated that this list is not exhaustive. These include:-

PES – Cork Harbour Boundary

- Installation of a permeable/semi permeable control berm with geo-textile wrapping at a level between mean LWM and LWMS. The height of this berm will be set at a level between mean HWM and HWMS. It is the intention that the tide will pass through this berm as opposed to overtopping the berm. The use of this temporary works method will require the Contractor to work with the tidal cycle. Construction works for the installation of the PES may be undertaken during low water. During high water the work may have to be abandoned. Prior to being abandoned the works would be made good to ensure that there would be no deterioration of the works or significant mobilisation of sediments as a result of the tidal inundation. The geotextile wrapped berm would protect against wash-out and sediment release as the tide goes out. This method would also require the management of water originating from elevated water levels within the East Tip where necessary.
- Use of silt screens or turbidity curtains where necessary to prevent the release of sediments into the Cork Harbour area.
- Use of temporary barriers, such as geo tubes to facilitate working in the dry from the perspective of tidal inundation and cut off drains with pump sumps to control water originating from elevated waters levels within the East Tip where necessary.
- Installation of sheet piles to facilitate working in the dry from the perspective of tidal inundation and cut off drains with pump sumps to control water originating from elevated waters levels within the East Tip where necessary.

PES – Navy Boundary

- Use of trench boxing combined with working with the tidal cycle and controlled pumping of water.

The appointed Contractor will decide on the best approach for temporary works. However, such works will be required to be undertaken in accordance with the mitigation measures outlined in the EIS.

D.2b Alternative End Uses

As outlined in Chapter 2 (Legislative and Policy Context) of the EIS which sets out the policy context for the proposed development, a number of alternative end-uses have been identified at strategic and local policy levels for Haulbowline Island including the East Tip site.

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Table D.2.2: Summary of Alternative End Use Options

Options	Description	Environmental Considerations	Planning Considerations
1. Major medium to high density mixed-use redevelopment.	Employment, residential and cultural projects could be included.	Landscape and Visual. Wastewater treatment capacity. Water supply inadequate. Traffic and Transport impacts. Water quality impacts. Impacts to Natura 2000 sites.	Security issues for naval service. Traffic issues, having regard to single bridge access. Uncertainty for investors due to historic waste on site. Limited commercial interest in new residential and employment related uses in the current economic climate. Costs associated with development of such a site.
2. Historic uses on site.	Naval Service uses including education.	As existing.	As existing.
	Industrial.	Landscape and Visual. Wastewater treatment capacity. Water supply inadequate. Traffic and transport impacts. Water quality impacts. Impacts to Natura 2000 sites.	Limited access. Uncertainty for investors due to historic waste on site. Costs associated with development of such a site.
3. Passive amenity function.	Landscaped park and playing pitch for Navy.	No requirement for waste water treatment or water supply. Visual enhancement of the area.	No access issues. No security issues for naval service. Community gain.
4. Doming of the landform.	Domed Cap (i.e. laying of waste and/or cover material above original ground contours).	Landscape and visual impacts. Noise and Air impacts.	Reduced landscape and visual value for end users and Reduce level of amenity for end users

Option 3 emerged as the preferred option largely due to improved landscape and visual impacts, provision of an amenity site for the local community and enhancing the overall area. Please refer to Drawing DG1008a-c.

D.2c Landscape Plan and final contours – assessment of alternatives

A series of options were considered for the re-grading and profiling of the site and for the proposed optimal location for trees, playing pitch, viewing areas, walkways, higher ground etc. It was concluded the option proposed in the landscape masterplan (DG1008a-c) was the optimum option as it aimed to:-

- Maximise the existing location of stockpiles reducing the volumes that require double handling or transportation around the site;
- Maximise the existing location of stockpiles minimising the need to import material onto the site for landscaping purposes;
- Locate the higher profiles to the north, east and south of the East Tip improving shelter within the site for walkers, bird watchers, etc;
- Avoid use of paths along the edge of the island which not only reduces impacts to wildlife but avoids potential impacts from a health and safety aspect with respect to the public from accessing water and intertidal areas. Further the path networks has been designed to:-
 - Maximise visitors stay at the site by offering points of interest, maximising the length of path network and offering panoramic viewpoints of the Harbour.
 - Allow opportunities for local community and navy staff to use the paths for walking and running.
 - Take cognisant of the wildlife sensitivities in the area and will encourage observation of wildlife by visitors from the paths. Potential for disturbance has been minimised by use of screen planting and fences.

The biodiversity at the East Tip site will be significantly increased through the use of extensive native woodland and scrub with wildflower meadows and a wetland habitat rather than the alternatives of ornamental or non-native species.

Further, measures for bird enhancement have also been considered including a bird roosting ledge.

D.2g Access and Road Widening Alternatives

Alternative access routes to the East Tip site are limited. A single bridge connects the Island to the mainland to the south. The relocation of this bridge or construction of a new bridge would be very costly and therefore was not considered as part of this proposal. Upgrading the existing bridge prior to any works has however been considered (See Chapter 5 (Project Description) of the EIS).

From the Haulbowline Bridge to the site there is a single access road and the general location of this roadway is constrained due to the location of the naval base to the north and the foreshore to the south. Therefore alternatives in respect of the access route were based on design and layout rather than alternative locations.

In relation to the design of the roadway from the end of the bridge into the site three alternative options were considered. Detailed consultation and discussion took place with respect to these options with Cork County Council and the Naval Base. Figure 4.1 (a-c) illustrates the three Alternative Access Options considered. These options are discussed in more detail in Chapter 4 (Assessment of Alternatives) of the EIS

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Preferred Alternative for Road Access

On review of the various layout and design options as set out above, Option 2 - Construct a completely new 2-way access road with a footpath on one side which is totally independent of the existing road. The existing road will be used exclusively by the Navy and the new road by the public. This appears to be the most favourable in meeting the development criteria requirements and therefore this option has been progressed as the preferred alternative as part of the design for the subject scheme.

This option was largely chosen to ensure security and ease of access for the naval base.

LANDFILLS

The following Sections D3 to D7 should only be completed for Landfill Applications. Reference should be made to the Agency landfill manual, ‘Landfill Site Design (2000)’, when completing this section.

D.3 Liner System

Complete the following table regarding the liner system to be used for the landfill/landfill extension and detail the information requested as **Attachment D.3. Items D3c to D3g should only be completed for immediate projects** (i.e., years 1 & 2). A schedule of liner construction activities for the medium to long term need only be listed in item D3a below, since Condition 3 of any licences granted will provide reporting requirements for any future projects.

TABLE D.3 LINER SYSTEM

		y/n	Comments
D.3.a	Provide information to fulfil Annex 1 of the Landfill Directive	y	Refer to section D3.a below
D.3.b	What type of liner system is specified?	n	Not applicable
D.3.c	Has a Quality Control Plan been specified?	n	Not applicable
D.3.d	Has a Quality Assurance Plan been specified?	n	Not applicable
D.3.e	Has independent, third-party supervision, testing and controls been specified?	n	Not applicable
D.3.f	Have basal gradients for all cells and access ramps to the cells been designed?	n	Not applicable
D.3.g	Has a leak detection survey been specified?	n	Not applicable

D3.a Information to fulfil Annex 1 of the Landfill Directive

Section 3.4 of Annex 1 of the Landfill Directive states that the requirements of paragraphs 3.2 and 3.3 (relating to lining and capping systems) may be reduced accordingly if it has been established that the landfill poses no potential hazard to soil, ground water or surface water.

The DQRA for the East Tip concluded that: *the waste is underlain by alluvium of a lower permeability which is confining the underlying limestone. Consequently the limestone is considered to be confined, with the alluvium inhibiting downward groundwater and contaminant movement towards the confined limestone.* The alluvium layer has a thickness ranging from 6.2 – 15 meters beneath the site (refer to Table 13.4 of the EIS).

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In addition to this the DQRA also concluded that there was a theoretical, although not measured, impact to the waters of Cork Harbour immediately surrounding the site (i.e. within 50m) for chromium VI and from manganese. The outputs of the sensitivity analysis undertaken as part of the DQRA demonstrated that decreasing the lateral hydraulic conductivity to 10^{-5} m/s would be sufficient to remove any predicted impacts to the Cork Harbour waters.

As detailed in Chapter 13 “Soils, Geology and hydrogeology” potential impacts after the construction of the remedial solution will be positive for the environment:-

- Groundwater – groundwater quality within the waste material is expected to remain broadly similar to current baseline conditions although there will be a significant reduction in rainfall infiltration due to the emplacement of the low permeability cap which will reduce rainfall infiltration and potential leachate generation, particularly in the centre of the waste mass where tidal effects are smallest. In addition, the installation of the perimeter engineered structure will significantly reduce the volume of seawater inflow to the waste during high tide as the permeability will have been reduced to a maximum value of 1×10^{-5} m/s. This structure will also reduce the volume of groundwater discharge from the site during low tide, thereby significantly reducing the flux of dissolved phase contamination emanating from the site. Additional geochemical modelling (see Addendum to DQRA (WYG 2013b)) concluded that overall groundwater chemistry is expected to become more reducing and that some of the contaminants of concern (notably chromium VI) were predicted to decrease over time following the remediation as chromium III is more stable under reducing conditions than chromium VI. Chromium oxide precipitates were also predicted, which will further reduce total chromium concentrations in groundwater.
- Receiving Marine water – the reduced flux of contamination from the site following the installation of the Perimeter Engineered Structure and emplacement of the low permeability cap will have a positive (beneficial) impact on the quality of the receiving waters in the adjacent Cork Harbour as a result. The residual waste in the foreshore area is not predicted to have a detrimental impact on water quality in Cork Harbour (see Addendum to DQRA (WYG 2013c)).

The cumulative impact of dissolved phase discharge from the remediated East Tip (i.e. with CAP & PES) and from the waste remaining in the foreshore were calculated in the Foreshore Addendum DQRA (WYG 2013c). This conservative assessment predicted concentrations in surface water within 10m of the East Tip will be below the Water Quality Standards (WQS) used in the risk assessments.

- Human health risks – the site will become available for public amenity use as the pathways between contaminated material in the waste (source) and human health (receptors) by direct contact, ingestion, and inhalation (pathways) will have been removed through provision of a barrier between the waste and site end users.

A revised Conceptual Site Model (CSM) based on that prepared for the DQRA and illustrating the changes to the Source Pathway Receptor Linkages following the remediation of the East Tip is included in Drawing DG1015. Source, pathway and receptor definition and numbering (e.g. R1 - Future Park Users) has been replicated from the DQRA for consistency.

Table D.3.1: Summary Potential Impacts and Revised Conceptual Site Model (CSM) During the End-Use Stage

Aspect of the Project	Potential Impact	Changes to CSM	Proposed Mitigation
<p>Emplacement of surface cap across the site.</p>	<p>Human health risks - will have been significantly reduced for future end users of the site for public amenity as the pathways between contaminated material in the waste and human health by direct contact, ingestion, and inhalation will have been removed. In addition, further risk assessment has been completed that concludes there is no significant risk to human health from leaving residual waste material outside the line of the perimeter engineered structure.</p>	<p>Receptor R1 (future Park Users) and R3 (Navy football pitch users) are able to use the site safely as Pathways P1 (dermal contact, ingestion & inhalation) and P2 (inhalation of dusts and vapours) have been broken. Receptors R2 (construction workers) will require appropriate PPE based on health and safety planning for the construction activity associated with the placement of the cap. After which time PPE shall be required for construction workers which is appropriate to the nature of the maintenance works or construction works being undertaken.</p>	<p>Passive venting of ground gas via the PES.</p>
<p>Emplacement of surface cap across the site and perimeter engineered structure.</p>	<p>Groundwater – groundwater quality within the waste material will remain similar to current baseline conditions although there will be a significant reduction in rainfall infiltration due to the emplacement of the low permeability cap which will reduce rainfall infiltration and potential leachate generation, particularly in the centre of the waste mass where tidal effects are smallest. In addition, the installation of the perimeter engineered structure will significantly reduce the volume of seawater inflow to the waste during high tide as this structure will have a permeability 100 times lower than the average permeability of the waste (used in the DQRA Tier 4 assessment). This structure will also reduce the volume of groundwater discharge from the site during low</p>	<p>Pathway P3 (solid phase leaching to groundwater) will be significantly reduced in the unsaturated zone due to the emplacement of the low permeability cap that will reduce rainfall infiltration through the waste. Pathway P4 (contaminant migration in groundwater) will continue albeit at significantly reduced flux due to the reduction in rainfall infiltration and reduced flow through the perimeter engineered structure with lower permeability than the average permeability of the waste (by up to a factor of 100). Pathway P5 (migration of ground gas) will continue and will be passively vented so as to avoid potential impacts to the adjacent naval base (R4).</p>	<p>Groundwater quality monitoring to ensure effectiveness of the solution.</p>

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Aspect of the Project	Potential Impact	Changes to CSM	Proposed Mitigation
	tide, thereby significantly reducing the flux of dissolved phase contamination emanating from the site.		
Emplacement of the perimeter engineered structure.	Receiving Marine water – the reduced flux of contamination from the site following the installation of the PES will have a positive (beneficial) impact on the quality of the receiving waters in the adjacent Cork Harbour as a result.	The significant reduction in P4 (contaminant transport in groundwater) exiting the site through the perimeter engineered structure will significantly reduce the contaminant loading to receptors R5 (Cork Harbour) and R6 (Ecology – flora & fauna).	Surface water monitoring to ensure effectiveness of solution. Perimeter inspection to ensure effectiveness of solution.
Residual waste in the foreshore area outside the PES	Potential tidal interaction and flux of dissolved contaminants from the waste to receiving waters in Cork Harbour.	Waste retained in the foreshore area will be capped by rock armour in part to minimise future erosion. Potential dissolved phase migration P6 within tidal flux has been risk assessed.(WYG 2013c)	Surface water monitoring to ensure effectiveness of solution.

On the basis of the foregoing and the risk posed by the remediated East Tip the existing system fulfils the requirements of Annex I of the landfill Directive. As such it is not proposed to install a liner at the base of the existing fill material.

D.4 Leachate Management

Complete the following table detailing leachate management arrangements. Further information should be included in **Attachment D.4**.

TABLE D.4.1 LEACHATE MANAGEMENT ARRANGEMENTS

		y/ n	Comments
D.4.a	Is there a Leachate Management Plan?		refer to section D.4.a below
D.4.b	Have annual quantities of leachate been calculated?	y	refer to section D.4.b below
D.4.c	Has the total quantity of leachate been calculated?	n	Refer to section D.4.c below.
D.4.d	Has the size of the cells been specified taking account of the water balance calculations?	n	Not Applicable
D.4.e	Has a leachate collection system been specified?	n	refer to section D.4.d
D.4.f	Has a leachate storage system been specified?	n	Not applicable
D.4.g	Has a system for monitoring the level of leachate in the waste been designed?	y	Refer to section D.4g
D.4.h	Is leachate recirculation proposed/practised?	n	Not applicable
D.4.i	Has leachate treatment on-site been specified?	n	refer to section D.4i&j
D.4.j	Has leachate removal been specified?	n	refer to section D.4i&j

Attachment D.4a Leachate Management

It should be noted that this is a contaminated land remediation project and not a landfill development project.

A DQRA has been undertaken with respect to the site at it has concluded the following points:

- There is no perched groundwater table on site within the waste material. Instead the mass of the waste material is in perpetual state of hydraulic interaction with the surrounding water of the Cork Harbour, with tidal hydraulic head fluctuations present in the waste, alluvium, sands and gravels and limestone

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- The sensitivity analysis indicated that decreasing the lateral hydraulic conductivity to 10^{-5} m/s would be sufficient to reduce the theoretical impact of dissolved phase contaminant discharge into the harbour”.
- The capping system will break the pathway associated with risks to human health by preventing direct contact with the identified lead, arsenic and asbestos for future site users, and secondly it will reduce the infiltration of rainwater and therefore contaminant leaching to groundwater and migration to the Cork Harbour.
- The addendum to the DQRA prepared in response to a specific query from the EPA as part of the EIS scoping concluded that the concentrations of the key contaminants of concern in the groundwater body within the waste shall decrease slightly post remediation of the East Tip.
- A further Addendum to the DQRA concluded that the residual waste in the foreshore area is not predicted to have a detrimental impact on water quality in Cork Harbour (see Appendix A of the EIS (WYG 2013c).

The conclusions of the DQRA have been a primary consideration in developing an appropriate remediation solution for the East Tip site.

The installation of the proposed capping system and the proposed PES shall be sufficient to effectively remediate the East Tip and as a result effectively manage any contaminated groundwater (leachate). As such no additional groundwater (leachate) management plan is required for the site post remediation. However it should be noted that a detailed surface water management plan will be required for the construction works associated with the remediation. This surface water management plan shall form part of the CEMP. Additional information with respect to the management of surface water on site is provided in Chapter 6 “Project Construction” of the EIS.

D4.b

The DQRA report presented the results of a conservative bespoke assessment (Mass Transport model) of theoretical impact to the Cork Harbour waters. A key component of the Mass Transport model was a flux model which quantified the volume of water flux from the site. For the purpose of the East Tip, given its unique setting, this flux model can be considered the current estimate of leachate generated on site.

Based on these calculations it is, conservatively, estimated that the daily flux from the site is currently 4,341 m³/day. It is expected that following remediation this flux will drop by two orders of magnitude i.e 43 m³/d.

Details of these calculations are provided in Appendix AA of the DQRA

D4.c

As stated previously the purpose of this licence application is to facilitate the remediation of the East Tip and as such the East tip will not be an active landfill. Therefore, no calculation of total leachate has been conducted as it is not relevant.

D.4.d

There shall be no active abstraction of contaminated groundwater (leachate) from the East Tip. As outlined in the preceding sections the aim of the remediation solution for the site is to reduce the potential contaminant flux to the Cork Harbour through the installation of a low permeability capping system and a Perimeter Engineered Structure (PES). Therefore as part of the final remediation there shall still be an element of flux through the proposed PES and, given that contribution from rainfall will be limited, no active leachate abstraction will be required.

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D.4g

A detailed groundwater monitoring programme has been proposed in Chapter 13 “Soils, Geology & Hydrogeology” of the EIS. This provides for monitoring during construction of the remediation solution and post remediation. Please also refer to Section F of this application for further details. Monitoring will be undertaken at a frequency stipulated by the Environmental Protection Agency.

D.4.i & j

As stated in section D.4.d of this application the aim of the remediation solution for the site is to reduce the potential contaminant flux to the Cork Harbour through the installation of a low permeability capping system and a Perimeter Engineered Structure (PES). Therefore as part of the final remediation there shall still be an element of flux through the proposed PES and, given that contribution from rainfall will be limited and no active leachate abstraction will be required neither leachate treatment on site or removal is required.

D 5 Landfill Gas Management

All landfill sites should have suitable arrangements for the management of landfill gas. **Attachment D.5** should contain the appropriate documentation. Information provided should follow the sequence, and use the headings, established in Table D.5. ***Items D5g to D5m should only be completed for immediate or current gas collection projects (i.e., years 1 & 2).*** A schedule of gas management aspects for the medium to long term need only be listed in item D5f below, since Condition 3 of any proposed decision/licence will provide reporting requirements for any future projects.

Table D.5. Landfill Gas Management

		y/n	Comments
D.5a	<p>Is there a Landfill Gas Management Plan?</p> <p>Provide estimates of the volumes of landfill gas which will be produced by the waste disposed of in the site for the next 20 years, and compare to the EPER list for methane:</p>	n	Not required – The East Tip is not generating significant quantities of ground gas.
D.5b	Is there a passive venting system?	y	refer to section D.5 below
D.5c	Does the passive system cover all of the filled area?	y	refer to section D.5 below
D.5d	Have gas alarm systems been installed in the site buildings?	n	refer to section D.5below
D.5e	Have measures been installed to prevent landfill gas migration (e.g. barriers)?	n	Not applicable
D.5f	Has a time-scale been proposed for the installation of landfill gas infrastructure?	n	Not applicable
D.5g	Is gas flaring undertaken at the site?	n	Not applicable
D.5h	Is there an active (i.e., pumped) landfill gas extraction system?	n	Not applicable
D.5i	Does the active system cover all of the filled area?	n	Not applicable
D.5j	Is landfill gas used to generate energy at the site?	n	Not applicable
D.5k	Have emissions from the	n	Not applicable

	flarestackand utilisation plant been assessed for source, composition, quantity and level and rate?		
D.5l	Has a maintenance programme for the control system been specified?	n	Not applicable
D.5m	Has a condensate removal system been designed?	n	Not applicable

D 5 Landfill Gas Management

The ground gas assessment in Appendix O of the DQRA identified that the waste material is typically not generating significant concentrations of gas and this finding is consistent with the waste types present in the tip which have been subject to detailed characterisation. However boreholes installed into the underlying alluvium have shown elevated concentrations of ground gas (BH316, 126, 116 & 306D). The source of the ground gas was considered to be the underlying natural organic alluvium as opposed to waste. Therefore on this basis no active gas management is proposed for the East Tip. It is proposed that any gas generated on site in the underlying alluvium will vent passively through the Perimeter Engineered Structure (PES).

The DQRA has recommended, as a precaution, that further monitoring and assessment and/or gas protection measures will be required for any buildings constructed on site as a result of the elevated ground gas concentration identified in the alluvium. It should be noted that there are no buildings planned for the East Tip as part of the parkland amenity end-use option. The Contractor executing the remediation works will be required to undertake the appropriate risk assessment for any building proposed on site as part of the works.

D.6 Capping System

Complete the following table detailing the design of the capping system. **Attachment D.6** should contain the appropriate documentation. ***Items D6e to D6k should be completed for immediate projects only (i.e., years 1 & 2).*** Condition 10 of any proposed decision/licence will provide reporting requirements for capping requirements beyond this timeframe.

Table D.6 Capping System

		y/n	Comments
D.6a	Has the daily cover been specified?	n	Not applicable
D.6b	Has the intermediate cover been specified?	n	Not applicable
D.6c	Has the temporary capping been specified?	n	Not applicable
D.6d	Has the Capping System been designed and does it meet the requirements of the Landfill Directive Annex 1 (3.3)?	y	refer to section D.6
D.6e	Does the Capping System include a flexible membrane liner?	y	refer to section D.6
D.6f	Have all capping materials been specified?	y	
D.6g	Has a Method Statement for construction been produced?	n	Contractor to provide once appointed
D.6h	Has a Quality Control Plan been produced?	n	An independent Construction Quality Assurance company will be appointed to oversee placement of synthetic capping materials. This company will be responsible for preparing the Quality Control Plan.
D.6i	Has a Quality Assurance Plan been produced?	n	An independent Construction Quality Assurance company will be appointed to oversee placement of synthetic capping materials. This company will be responsible for preparing the Quality Assurance Plan.
D.6j	Has a programme for monitoring landfill stability been developed?	n	
D.6k	Has a programme for monitoring landfill settlement been developed?	n	Not applicable

Attachment D.6 Capping System

The DQRA has concluded that a low permeability capping system is required on the horizontal surface of the East Tip. The DQRA states that “*The capping system will break the pathway associated with risks to human health by preventing direct contact with the identified lead, arsenic and asbestos for future site users, and secondly it will reduce infiltration of rainwater and therefore contaminant leaching to groundwater and migration to the Cork Harbour*”(Refer to Appendix A of the EIS:DQRA).

A Waste Characterisation study has been conducted, the results of which are presented in Appendix C ‘*East Tip Remediation Classification of Slag Waste*’ (RPS, 2013) of the EIS. This study has demonstrated that the majority of the waste deposited at East Tip is non-hazardous however a minor fraction of the waste is hazardous but cannot be isolated. The EU Landfill Directive on Waste sets out specific requirements with respect to the capping of hazardous waste landfills and these requirements have been transposed into the EPA Landfill Site Design Manual. These requirements provide a prescriptive solution to the risks posed by hazardous waste sites which include risks to human health, surface water and groundwater from the contaminants within the wastes, however Section 3.4 of Annex 1 of the Landfill Directive states that the requirements of paragraphs 3.2 and 3.3 (relating to lining and capping systems) may be reduced accordingly if it has been established that the landfill poses no potential hazard to soil, ground water or surface water.

The remediation of the site will be carried out under a hazardous Waste Licence as this is the statutory mechanism used to ensure that the proposed works and the methods to achieve the same are appropriately regulated and carried out. This project is however a remediation project rather than a landfill development project and the remediation solution has been informed primarily by the DQRA which has been prepared for the site. The proposed capping system design will be based on the particular risks and generic recommendations as set out in the DQRA. Based on this and the proposals for the end-use the proposed capping system should contain a subsoil and topsoil layer to provide support for landscaping and vegetation. It should also contain a sub-surface drainage layer and alternatives include a geocomposite drainage layer or drainage stone, either of which is acceptable. A barrier layer is also required to act as a separation layer between the future public users and the contaminants in the underlying waste. It is considered that a low permeability layer such as LLDPE, a 600mm low permeability clay layer or a geosynthetic clay liner are appropriate barriers. Given that the waste deposited at the East Tip is non-putrescible and is not producing gas it is considered that a gas collection layer is not required.

Whilst the Design Manual and the EPA Landfill BAT guidance note can be used as guidance, they should not prescribe the proposed capping system for this site. It is more appropriate that the detailed design for the capping system at the East Tip is undertaken having regard to CIRIA Special Publication 106 - Remedial Treatment for Contaminated Land - Volume VI: Containment and hydraulic measures and other associated CIRIA documents where relevant and is based on the risk posed by the site as detailed in the DQRA.

The capping system proposed above meets the requirements of the recommendations in the DQRA and will enable the site to be converted to amenity use as a public park. It is commensurate with the level of risk posed by the site and appropriately breaks the source-pathway-receptor linkages. On this basis it is considered that the proposed capping system constitutes use of ‘Best Available Techniques’ (BAT).

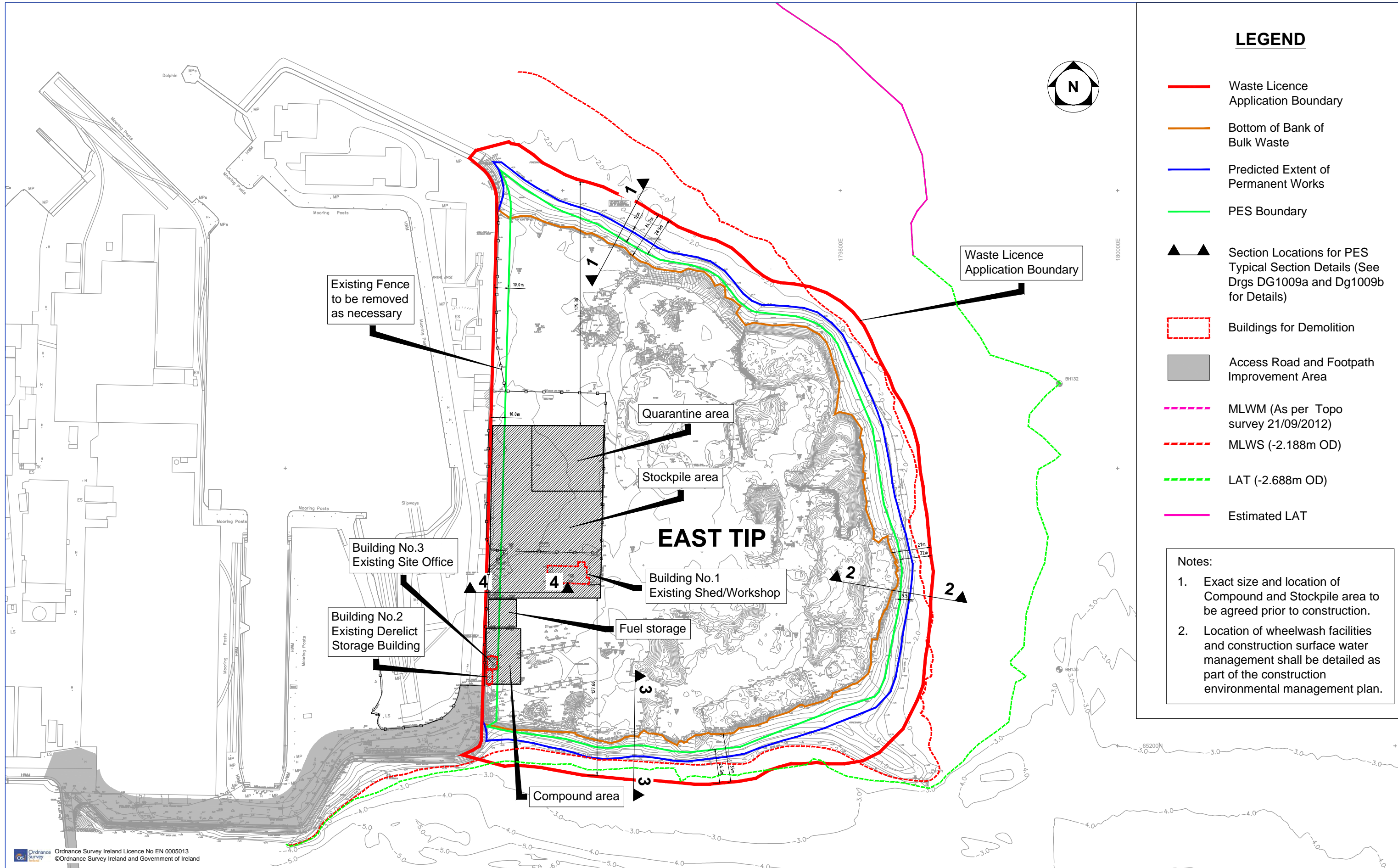
A typical detail of the capping system for the remediation of contaminated land is detailed on drawing DG1009b and is described in Chapter 5 ‘Project Description’ of the EIS.

ATTACHMENT D DRAWINGS

DG1007 (a) – Construction Phase Site Layout
DG1007 (b) – Typical Phasing of Works

DG1008 (a) – Post Remediation Site Layout
DG1008 (b) – Landscape details
DG1008 (c) – Landscape and Planting details

DG1009 (a) –PES Sectional detail
DG1009 (b) –Capping detail
DG1009 (c) –Section through site
DG1009 (d) –Site section and Swale section
DG1009 (e) –Sub-surface drainage
**DG1009 (f) –Diffuse outfalls, wetland and
emergency outfall**
DG1009 (g) –Final Contours
DG1009 (h) –Upgrade Access Road
DG1009 (i) –Footpath Improvements

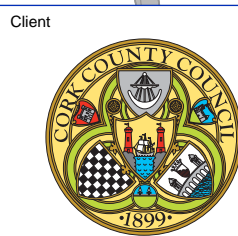


LEGEND

- Waste Licence Application Boundary
- Bottom of Bank of Bulk Waste
- Predicted Extent of Permanent Works
- PES Boundary
- ▲▲ Section Locations for PES Typical Section Details (See Drgs DG1009a and Dg1009b for Details)
- Buildings for Demolition
- Access Road and Footpath Improvement Area
- MLWM (As per Topo survey 21/09/2012)
- MLWS (-2.188m OD)
- LAT (-2.688m OD)
- Estimated LAT

- Notes:**
1. Exact size and location of Compound and Stockpile area to be agreed prior to construction.
 2. Location of wheelwash facilities and construction surface water management shall be detailed as part of the construction environmental management plan.

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CORK COUNTY COUNCIL

General Notes

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- (ii) All Levels refer to Ordnance Survey Datum, Malin Head.
- (iii) DO NOT SCALE, use figured dimensions only, if in doubt ask.
- (iv) Hard copies, .dwg and .pdf will form a controlled issue of the drawing. All other formats (.dwg etc) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipient's own risk. RPS will not accept any responsibility for any errors from the use of these files, either by human error by the recipient, listing of the un-dimensioned measurements, compatibility with the recipient's software, and any errors arising when these files are used to aid the recipient's drawing production, or setting out on site.

No.	Date	By	App	Amendment / Issue
F01	07.11.13	RH/ER	ER	FINAL ISSUE
A01	24.04.13	RH/ER	ER	ISSUE FOR APPROVAL
D02	Apr. 13	RH/ER	ER	DRAFT ISSUE
D01	Apr. 13	RH/ER	ER	DRAFT ISSUE



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Drawn RH	Project	EAST TIP REMEDIATION PROJECT	
Checked ER			
Approved ER		CONSTRUCTION PHASE SITE LAYOUT PLAN	
Date March 2013	Title		
Scale NTS @ A1 1:2500 @ A3			
Job No. MCE0734	File Ref. MCE0734DG1007aF01.dwg	Drg. No. DG1007a	Rev. F01

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