This Report has been cleared for submission to the Board by Senior Inspector, Mr Brian Meaney

Signed: Dorota Richards

Date: 15th August 2016

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

OFFICE OF ENVIRONMENTAL SUSTAINABILITY

INSPECTOR'S REPORT ON A LICENCE APPLICATION

To:	Directors
From:	CAITRÍONA COLLINS - **LICENSING UNIT**
Date:	15TH AUGUST 2016
RE:	Application for a Waste Licence from Port of Cork Company, Licence Register W0290-01

Application Details	
Licence application received:	31st March 2016
Classes of activity under the Waste Management Act 1996 as amended. (**P** = principal activity)	4th Schedule: R5 (**P**), R11 and R13
Category of activity under First Schedule to the EPA Act 1992, as amended	None
CRO number:	262368
EIS received:	Yes
NIS received:	Yes
Submissions received:	3
Site visit and site notice inspection:	23rd May 2016

1. Applicant and Facility

The Port of Cork Company is a private company, established as a corporate entity in 1997. The site which is the subject of the waste licence application is located at Bantry Inner Harbour. Bantry Bay Port Company is a wholly owned subsidiary of the Port of Cork Company. There are four main industries in Bantry Bay: aquaculture, oil transhipment, stone export and tourism. Bantry Inner Harbour is located adjacent to Bantry Town, which is approximately 90km west of Cork City.

The proposed activity is for the treatment of contaminated dredge sediment from Bantry Inner Harbour and recovery of the treated sediment through infill in two locations: a new amenity area to the north of the inner harbour mouth, and expansion of the town pier and quayside to the south of the inner harbour mouth, as indicated in Figure 1 and Figure 2 below.

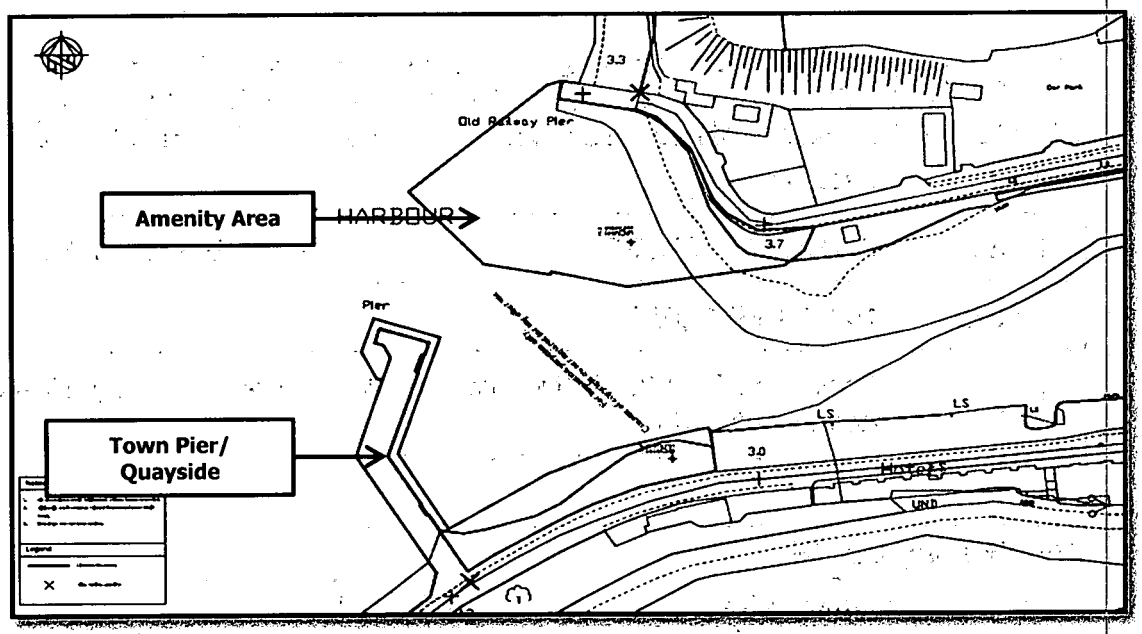

Figure 1 Site Boundary (red line also indicates infill areas using treated sediment)

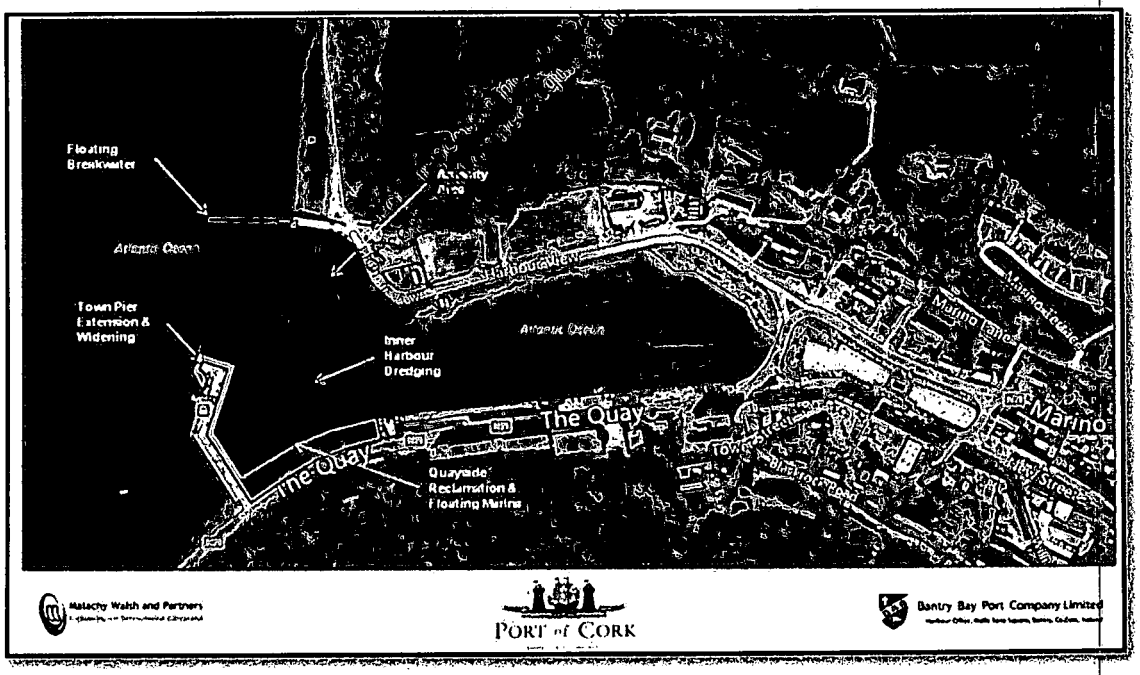

Figure 2 Site Location and Scheme Outline

The quantity of sediment to be dredged is estimated to be 45,000m^3 (72,000 tonnes), of which it is estimated that:

- 12,000m^3 is potentially contaminated fine grained sediment,
- 13,000m^3 is clean fine grained sediment and
- 20,000m^3 is clean coarser grained sediment.

The contamination in the fine grained sediment has been identified as comprising variable concentrations of the following:

- Heavy metals such as mercury, tributyl tin and lead;
- Petroleum hydrocarbons, including mineral oil;
- Polycyclic aromatic hydrocarbons (PAHs); and,
- Polychlorinated biphenyls.

Treatment will consist of stabilisation and solidification of the fine grained sediment (both contaminated and uncontaminated) using approximately 8-12% cement additive. The coarse grained sediment will not require treatment and will be used directly in the fill areas. The proposed hours of operation of the treatment and infill activity are Monday to Friday 8.00-18.00 and Saturday 8.00-13.00 and the hours of waste acceptance are the same.

The proposed activity is part of the Inner Bantry Harbour Development Phase 1 project, for which planning permission was granted by Cork County Council in 2013 (Ref: 12/00735). An EIS was prepared as part of the planning application and that EIS has been provided with the application for the waste licence.

2. Process description

The treatment activity will comprise of ex-situ stabilisation and solidification of the contaminated and uncontaminated fine grained sediment. The contaminated sediment has been assessed by the applicant using the HazWasteOnline™[1] tool and has been deemed to be non-hazardous waste.

The applicant assessed the characteristics of the dredge sediment against the Marine Institute's *Guidelines for the Assessment of Dredge Material for Disposal in Irish Waters*. The results indicated that nickel, mercury and arsenic were above the lower Guideline Limits across the work area, while other parameters including TBT, copper, chromium, cadmium, lead and zinc were elevated at sporadic locations. A small number of samples were also determined to be above the Marine Institute's upper limits. It was therefore determined that the dredge sediment was unsuitable for dumping at sea.

The fine grained sediment will be dredged and loaded onto a barge, from where it will be transferred to a treatment cell at either the quayside or the amenity area. The coarse grained sediment will not require treatment and will be placed directly into position in the infill areas. Prior to infill at the quayside area, in-situ stabilisation and solidification of the sediments underlying the fill area will be carried out, for the

[1] HazWasteOnline™ is web-based software for classifying hazardous waste.

purpose of preventing potential downward percolation of contaminants from the treated mass placed above.

Cement will be used in the treatment of the fine-grained sediment. The cement will serve two functions. First it will improve the handling characteristics of the waste and make it more amenable as an engineering material. Second it will contain and immobilise the contaminants in the sediment, decreasing their potential to move into the marine environment after use. The actual treatment ratio of sediment to cement will be determined onsite by trial mixes. The process flow for the waste treatment activity is illustrated in Figure 3. The treatment and recovery activities will take place concurrently at the amenity and quayside areas within the facility.

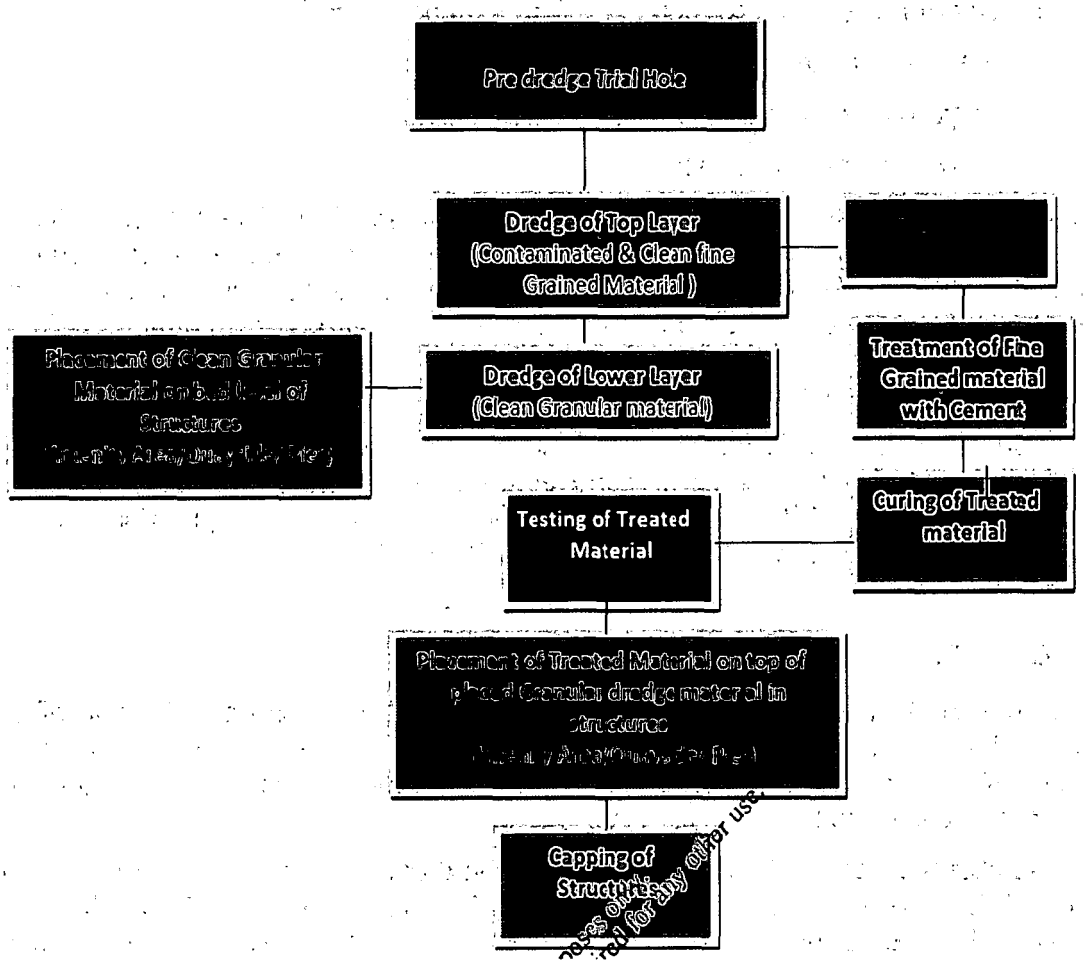

Figure 3 Process flow diagram for the dredging and waste treatment activities

Prior to stabilisation, dredge sediment will be placed in the treatment cells and water will drain away from the dredge sediment and will naturally filter through the permeable geotextile membrane lining the base of the treatment cell, into the area behind a Perimeter Engineered Revetment Structure (PERS) which will have been built in advance to contain the fill and form the boundary of the new amenity area. At the quayside, the drained water will remain behind an impermeable sheet pile system installed to contain the fill and form the boundary of the new quayside.

Inputs	Process	Outputs	Emissions

Contaminated* and uncontaminated sediment List of Waste codes 17 05 04 17 05 06	Stabilisation and solidification, cement additive	Stabilised, solidified sediment for infilling	Diffuse emissions of dust and odour Noise emissions Water draining from treatment cells

* Contaminated sediment has been analysed and deemed to be non-hazardous

3. Planning Permission, EIS and EIA Requirements

3.1 EIA Screening

In accordance with Section 40(2A) of the Waste Management Act 1996, as amended, the Agency must ensure that before a licence or revised licence is granted, that the application is made subject to an environmental impact assessment (EIA), where the activity meets the criteria outlined in Section 40(2A)(b) and 40(2A)(c). In accordance with the EIA Screening Determination, the Agency has determined that the activities are likely to have a significant effect on the environment, and accordingly is carrying out an assessment for the purposes of EIA. An EIS was submitted by the applicant in support of this waste licence application on 31 March 2016.

3.2 Planning status

Cork County Council has determined that the developments (Inner Bantry Harbour Development Phase 1 project) associated with these activities are likely to have a significant effect on the environment and that an EIA is required.

Cork County Council required an Environmental Impact Statement (EIS) in support of the planning application for the Inner Bantry Harbour Development Phase 1. The applicant has submitted the most recent EIS required by Cork County Council. This EIS relates to planning permission 12/00735.

The applicant has also confirmed that it applied to the Department of Environment, Community and Local Government (DECLG) for a Foreshore Licence and submitted an EIS as part of that application, being the same EIS submitted as part of the waste licence application.

Having specific regard to EIA, this report is intended to identify, describe and assess for the Agency the direct and indirect effects of the proposed activity on the environment, as respects the matters that come within the functions of the Agency, including any interaction between those effects and the related development forming part of the wider project, and to propose conclusions to the Agency in relation to such effects.

The EIS submitted, the licence application, the submissions and observations received from third parties, the assessments carried out by Cork County Council, consultations with Cork County Council and DECLG, the planning decisions and any additional information submitted by the applicant have been examined and assessed and are considered below for that purpose.

3.3 Content of EIS and licence application

I have considered and examined the content of the licence application, the EIS and other relevant material submitted with it and supplementary information provided by the applicant.

All of the documentation received was examined and I consider that the information as submitted contains a satisfactory description of the project, the alternatives studied by the applicant, the aspects of the environment likely to be significantly affected by the activity, the likely effects of the activity on the environment, the forecasting methods used, the prevention and mitigation measures envisaged, the lack of difficulties and deficiencies encountered and a non-technical summary.

I consider that the EIS, when considered in conjunction with the licence application, also complies with the requirements of the Waste Management (Licensing) Regulations 2004.

I have considered and examined the documents furnished by Cork County Council in relation to the impacts assessed by it, in particular the planners' reports and the decision dated 29 August 2013 (Ref: 12/00735).

I consider the issues that interact with the matters that were considered by the above authorities and which relate to the activity in Section 14 of this report.

Having considered the application and EIS, the submissions of state and public authorities, and the matters resulting from the planning authority decision, I consider that the likely significant effects of the activities on the environment are as set out in Section 14 below.

3.4 Consultation with Competent Authorities

Consultation was carried out between Cork County Council and the Agency as follows:

Consultation	**Date**
Notice under Section 42(1E)(a) (request for observations) issued:	8th April 2016 to Cork County Council
Response to Section 42(1E)(a) Notice received:	12th May 2016 from Cork County Council

Cork County Council confirmed in its response that it had no observations to make.

Consultation was carried out between the Department of Environment, Community and Local Government and the Agency as follows:

Consultation	**Date**
Request for observations issued:	18th May 2016 to DECLG
Response received:	18th May 2016 from DECLG

The Department of Environment, Community and Local Government confirmed that it received an application for a foreshore licence, which was accompanied by an EIS and the Department did not provide any additional observations to the Agency on the licence application and EIS. A determination on the foreshore licence application has not been made to date.

4. Submissions

Three submissions were received by the Agency in relation to the licence application. The submission points are summarised below followed by the Inspectors response, however the original submission should be referred to for full details.

4.1 Health Services Executive (10th May 2016 and 15th July 2016)

Two submissions were received from the Health Services Executive. In both submissions, the HSE stated that it had no adverse comments to make in relation to the waste licence application.

Comment: The submission is noted.

4.2 Inland Fisheries Ireland (18th May 2016)

Inland Fisheries Ireland requested in its submission that a sampling and monitoring programme of water and fish should be required under the licence, and proposed the parameters that should be monitored. The submission made reference to the dredging and construction phase of the operation.

Comment: The submission is noted. The RD includes conditions for monitoring of water quality from the commencement of licensable activities and the parameters included are those which were identified as potential contaminants of concern during the site investigations carried out.

5. Consideration of Best Available Techniques (BAT)

I have examined and assessed the application documentation and I am satisfied that the site, technologies and techniques specified in the application and as confirmed, modified or specified in the attached Recommended Decision comply with the requirements and principles of BAT (as described in *Final Draft BAT Guidance Note on Best Available Techniques for the Waste Sector: Waste Transfer and Materials Recovery,* 2011). I consider the technologies and techniques as described in the application, in this report, and in the RD, to be the most effective in achieving a high general level of protection of the environment having regard - as may be relevant - to the way the facility is located, designed, built, managed, maintained, operated and decommissioned.

6. Emissions

6.1 Emissions to Air

There will be no point source emissions to air. However, diffuse emissions to atmosphere may occur from activities carried out at the facility. Waste that requires treatment will be placed directly into stabilisation cells from the barge used in the dredging process. Uncontaminated coarse grained sediment will be placed directly into position as it will not require treatment. The waste will have an inherently high moisture content; therefore the risk of dust nuisance occurring is very low. There is potential for dust emissions to arise at the amenity area as the top layer of the treated sediment dries out prior to placement of the geotextile membrane and the final capping with topsoil.

Dust emissions may also occur from vehicle movement within the facility. A dust management plan will be put in place which will include measures aimed at minimising dust nuisance. The RD also includes standard conditions to control dust, including controls on site roads, wheel wash facilities and materials management.

Diffuse odour emissions may also occur, particularly as a result of hydrogen sulphide potentially being released during dredging which may continue to be released during treatment of the sediment. An odour management plan will be put in place and the RD also includes standard conditions to control odour nuisance (conditions 2.2.2.3 and 3.19).

Greenhouse gases will likely be emitted from vehicle traffic within the facility. Standard conditions are included in the RD to address energy efficiency through a maintenance programme for plant and equipment and design of new plant and infrastructure (condition 2.2.2.8)

6.2 Emissions to Sewer

There will be no emissions to sewer.

6.3 Emissions to Water

The sediment to be treated will be placed into treatment cells of which there will be six, three on either side of the harbour. The treatment cells are proposed to be lagoons lined with a geotextile membrane. Dewatering will take place in the treatment cells by percolation through the permeable base of the treatment cells into the fill areas that are contained behind the perimeter engineered revetment structure (PERS) at the amenity area and the impermeable sheet pile structure at the town pier and quayside area.

An Environmental Quantitative Risk Assessment (EQRA) was prepared by the applicant and presents an assessment of the potential contamination risk arising from the regulated waste activities and, in particular, the placement of treated sediment as a fill material into the natural environment. With regard to the dredging activity (which is not proposed for regulation under a waste licence) the EQRA considered the disturbance of fine sediments during the dredging activity. This contamination risk is short lived due to dilution and dispersion in the open harbour environment. The worst case scenario calculations predicted that, while there was potential for average TBT concentrations to be elevated just above the annual average surface water EQS[2] in the immediate area of the dredging work, all other concentrations were below their respective EQS values. Taking this assessment and applying it to the water draining from the treatment cells, the EQRA concludes that the contamination risk is very low due to the low volume of water draining from the treatment cells, its containment behind the semi-permeable PERS and the dilution effects from gradual seawater ingress and egress between the inner harbour waters and the amenity area. At the town pier and quayside treatment area, the impermeable sheet pile will prevent any contact between the infill area behind the

[2] Environmental quality standard, as set out in the European Communities Environmental Objectives (Surface Water) Regulations 2009 as amended (S.I. No. 272 of 2009 s amended by S.I. No. 386 of 2015).

sheet piles and the inner harbour waters. This will serve also to ensure that there is no risk of contamination arising from the in-situ treatment of the sediments beneath the fill area at the quayside.

Leachate testing of the untreated and treated sediments was undertaken. Results of leachate testing of the untreated sediment indicate that that there is potential for concentrations of chromium, copper and mercury in eluate to be elevated above the average and maximum EQS; however, the EQRA concludes that, using a dilution factor of 0.003 (based on tidal prism modelling of the dissolution by marine water of contaminants in treated sediments exposed along the edge of the amenity area), the concentration of these parameters that could, in a worst case scenario, arise in adjacent marine waters do not exceed the EQSs for the relevant parameters. The calculations undertaken can be considered to be conservative as they did not consider the mitigating effect of the semi-permeable PERS which will in fact decrease the inflow and outflow of water between the fill area and Bantry Bay and reduce the contaminant flux. Also it is a fact that the sediment will be treated and the mobility of contaminants consequently reduced.

Rainwater falling on the site will percolate through the surface of the material and, based on the leachate testing of the untreated and treated sediment presented above, will not cause environmental pollution of the harbour waters. A wheel wash will be provided at both areas of the facility and runoff from the wheel wash will be directed to a dedicated settlement lagoon. The silt will be collected from the settlement lagoon and stabilised for use in the fill areas. Clean water from the wheel wash will percolate through the deposited waste.

6.3.1 Receiving waters and impact

The licensable activities are to take place in the Inner Bantry Bay transitional water body. The Water Framework Directive ecological status of the Inner Bantry Bay is "good" while the water quality is classified as "Unpolluted". The deposition of treated dredge sediment has the potential to impact on water quality due to increased suspended sediments in the water body and potential dispersal of contaminants.

Before filling the amenity area, the PERS will be constructed at the amenity area, which will have a low permeability geotextile to further reduce the connectivity of the harbour waters with the treated sediment, and will also protect the deposited waste from tidal flows and potential erosion. An impermeable sheet pile structure will be constructed at the town pier and quay extension side of the facility. There is no connectivity between the groundwater in the area and the fill areas in the facility.

6.3.2 Environmental objective for treatment of waste

Leachate limits for treated sediment are prescribed in Schedule B.6 of the RD, which have been presented by the applicant as part of the EQRA. As stated above, a dilution factor of 0.003 is derived from a tidal prism calculation, which calculated the volume of solidified sediments that will become saturated during neap tide. This is a conservative approach as it does not take into account the presence of the geotextile lined PERS. For the purpose of deriving leachate limits, a further degree of conservatism is introduced by increasing the hydraulic conductivity of the treated sediments by a factor of 10 (increasing the contaminant flux), giving a dilution multiplier of 0.03. The leachate limits proposed by the applicant have been derived by dividing the annual average EQS by the dilution multiplier of 0.03. See Table 1.

Table 1 Proposed leachate limits presented by the applicant

Parameter[1]	Annual Average EQS (mg/l)	Proposed leachate limits (mg/l)	Average leachate concentration (as measured by applicant) (mg/l)	
			Untreated sediment	Treated sediment (min-max)
Arsenic	0.02	0.67	0.0091	
Cadmium	0.0002	0.007	0.0001	
Chromium	0.015	0.50	0.0254	
Copper	0.005	0.17	0.0074	
Lead	0.0013	0.043	0.0011	
Mercury	0.00005	0.0017	0.0007	
Nickel	0.0086	0.287	0.0027	
Zinc	0.04	1.30	0.0131	
Total of 17 PAHs	0.005[2]	0.17		0.00359 – 0.179
Tributyl Tin	0.000002	6.7×10^{-5}		4.93×10^{-7} – 2.47×10^{-5}

[1] The annual average values for lead and nickel were revised in the European Union Environmental Objectives (Surface Water) (Amendment) Regulations 2015 (S.I. No. 386 of 2015), and these have been reflected in the proposed leachate limits presented above. These amendment regulations also removed the annual average value for mercury; however, the EQS as previously published in 2009 has been used to derive the proposed leachate limits.

[2] Source: UK Environment Agency Chemical Standards Report. The standard (annual average) for Naphthalene (one of the total of 17 PAHs) for the protection of aquatic life in coastal waters and relevant territorial waters was used as a conservative surrogate for the total of 17 PAHs.

The predicted leachate concentrations from untreated sediment have been determined by the applicant and are presented in Table 1. It is stated by the applicant that the predicted leachate concentrations from treated sediment will be significantly lower due to the high degree of sorption resulting from the treatment process.

Periodic monitoring of the treated waste, as prescribed in Schedule C.4 of the RD, will ensure the protection of the surface water EQSs. The applicant has proposed that the laboratory testing will be completed using the monolithic tank test in accordance with an Environment Agency standard NEN 7375:2004. The cement curing process that will take place as a result of treatment is considered to be complete after about 28 days. Each leachate sample will be tested at days 1, 2, 4

and 9 and in the event of three consecutive results exceeding the leachate limits, the treated material will be deemed to be unsuitable for fill. In such cases, the treated material will be excavated either for re-treatment or for appropriate disposal. This commitment is reflected in condition 8.10 of the RD.

Automatic surface water quality monitoring will take place in two locations near the facility boundary, which will comprise total suspended solids and turbidity monitoring. In addition, a further daily manual water quality monitoring point will be located in close proximity to the site. Daily samples will be collected and dispatched on a weekly basis and analysed for suspended sediment concentration, turbidity and heavy metals including TBT. This monitoring schedule has been reflected in Schedule C.2.2 of the RD.

6.3.3 Storage/Bunding

The waste treatment activity will be carried out in two locations, at the amenity area and at the town pier/quayside. Treatment will take place in three cells at each location, with each of the three cells being used in sequence; there will be no storage of waste prior to treatment. Small quantities of fuel will be stored in the onsite chemicals store, in double bunded tanks.

6.4 Emissions to ground or groundwater

There will be no emissions to ground or groundwater at the facility. There is no hydraulic connection between the facility's fill areas and groundwater in the area and emissions emanating from the deposited waste or treatment cells will be to the surface water environment.

6.5 Waste generation at the facility

The generation of waste at the facility will be minimal and will comprise only mixed municipal waste from staff facilities and residual waste that may arise from debris contained in the dredge sediment. All waste generated will be removed off site for recovery or disposal by authorised operators. Condition 8 of the RD provides for waste generated at the facility to be managed in accordance with the waste hierarchy. If dealt with in accordance with the conditions of the RD, waste management at the facility will be in accordance with the requirements of section 29(2A) of the Waste Management Act 1996 as amended.

6.6 Noise

The facility is located in an urban setting adjacent to the town of Bantry. Sensitive receptors include residential, retail and leisure interests. The N71 Cork to Killarney road runs along the south side of the port area, resulting in typical urban background noise. The facility will result in additional traffic and construction noise associated with licensable activities.

A noise survey was carried out to characterise the worst-case scenario regarding noise emissions during the construction phase of works. Noise levels from various construction works were estimated and worst-case noise levels were predicted over a 1-hour period assuming continuous activity, at distances of 50m, 100m, 150m and 200m from the facility. The predicted noise at the distances stated were in the range

48-74 dB_{LAeq}. Therefore the construction activities have the potential to cause noise levels considerably above background at the nearest sensitive receptors.

A number of mitigation measures are proposed in the EIS, including:

1. Limitation on operating hours (condition 1.7 of the RD);
2. Use of modern, silenced and well-maintained equipment;
3. Shutting down equipment when not in use, where this is practicable;
4. A noise management plan (proposed in condition 2.2.2.3 of the RD as a noise and vibration management plan) that will deal with timing of works, minimisation of noisy work close to the sensitive receptors;
5. Use of acoustic screening in relevant locations.

The harbour porpoise is a protected species that may be negatively impacted by noise-producing activities at the facility. Specific measures have been included in the RD in this regard, including the engagement of a Marine Mammal Observer, which are also discussed in the appropriate assessment presented in this report, appendix 3 in particular. The RD also includes other specific conditions to address noise at the facility, such as the requirement to carry out a noise survey, as may be required by the Agency, and general provisions for the prevention of nuisance from noise.

Activities at the site will take place for a finite time only and as such any impacts will be short lived. Once construction works are completed, there will no noise emissions from the facility.

7. Use of Resources

Large volumes of fuel to power vehicles and large machinery will not be stored onsite. Instead, such vehicles and large machinery will be refuelled directly from delivery trucks. Small quantities of fuel will be held in the onsite chemicals store to power small plant and tools onsite. Other materials used at the facility will include cement additive to be used in the treatment process.

8. Waste Management Plans

The Southern Regional Waste Management Plan recognises the importance of infrastructure to manage waste in a manner which optimises the value of the material and future market opportunities, as well as striving to move from a linear to a circular economy approach to resource use.

9. Measures to prevent accidents and limit their consequences

There is the potential for an accident/hazardous and emergency situation arising from the operation of a waste treatment activity at Bantry Harbour. The waste undergoing treatment is contaminated but non-hazardous in nature and the purpose of treatment is to immobilise the contaminants in the dredge sediment to prevent their release to the environment, as well as improving the engineering properties of the dredge sediment.

The treatment process will be undertaken within a controlled reaction vessel and will therefore have a high degree of control and monitoring associated with it. In the event of untreated dredge sediment being released to the environment, the receiving water may become contaminated with metals and/or suspended solids.

Preventative Measures

Preventative measures are incorporated into the design of and procedures for the facility to prevent accidents and include:

- An Emergency Management Plan
- Bunding of the treatment site within the facility.
- Bunding of all storage tanks and containers within the facility.
- Provision of spill plates at the barges delivering dredge sediment to the facility for treatment.

Mitigation Measures

The following mitigation measures will reduce the likelihood of accidents and mitigate the effects of the consequences of an accident:

- Emergency management procedures
- Requirement in the RD for tank, container and drum storage areas (Condition 3);
- Requirement in the RD that contaminated storm water may not be discharged;
- Requirement in the RD that specifies accident prevention and emergency response requirements (Condition 9).

10. Compliance with E.U. Directives

10.1 Habitats Directive (92/43/EC) & Birds Directive (79/409/EEC)

Appropriate Assessment

The facility is not within or adjacent to any European Site. SACs and SPAs in the vicinity of the facility are listed in Table 2.

Table 2 SACs and SPAs in the vicinity of Bantry Inner Harbour

European Site	Site Code
Glengarriff Harbour and Woodland SAC	Site Code: 000090
Caha Mountains SAC	Site Code: 000093
Derryclogher (Knockboy Bog) SAC	Site Code: 001873
Dunbeacon Shingle SAC	Site Code: 002280
Sheep's Head SAC	Site Code: 000102
Reen Point Shingle SAC	Site Code: 002281
Roaringwater Bay and Islands SAC	Site Code: 000101
Sheep's Head to Toe SPA	Site Code: 004156

Beara Peninsula SPA	Site Code: 004155

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the proposed activities, individually or in combination with other plans or projects are likely to have a significant effect on any European Site. In this context, particular attention was paid to the European Sites listed in Table 2 above.

The Agency considered, for the reasons set out below, that the proposed activities are not directly connected with or necessary to the management of any European site and that it cannot be excluded, on the basis of objective information, that the proposed activities, individually or in combination with other plans or projects, will have a significant effect on any European site and accordingly determined that an Appropriate Assessment of the proposed activities is required, and for this reason determined to require the applicant to submit a Natura Impact Statement.

- The proposed activities are located within 15km of seven European Sites, with a further two European Sites within 25km of the facility.
- The proposed activities may result in adverse effects on water quality and disturbance impacts on qualifying interests at two of the identified European Sites, which are in the zone of potential influence as follows:
    - Glengarriff Harbour and Woodland SAC Site Code: 000090
    - Roaringwater Bay and Islands SAC Site Code: 000101

A Natura Impact Statement was submitted by the Applicant on 31 March 2016.

Appendix 3 of this report lists the two European Sites assessed in this report, their associated qualifying interests and conservation objectives along with the assessment of the effects of the activity on the European Sites.

An Inspector's Appropriate Assessment has been completed and has determined, based on best scientific knowledge in the field and in accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 as amended, pursuant to Article 6(3) of the Habitats Directive, that the proposed activities, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site, in particular Glengarriff Harbour and Woodland SAC (Site Code: 000090) and Roaringwater Bay and Islands SAC (Site Code: 000101), having regard to their conservation objectives and will not affect the preservation of these sites at favourable conservation status if carried out in accordance with this recommended determination and the conditions attached hereto for the following reasons:

- The results of coastal process modelling conclude that there will be no significant impact on the intertidal habitats that support the species designated as qualifying interests.
- Marine water quality monitoring is required under Schedule C.2.2 of the licence and the treatment of the contaminated material will be tailored to the level of contamination.
- The Environmental Quantitative Risk Assessment demonstrated that the risk of contaminants leaching from the treated material is low and a low permeability

perimeter engineered revetment structure (PERS) and impermeable sheet pile system will minimise or prevent contaminants entering Bantry Bay.

- There will be no bulk storage of fuels onsite. Small quantities of fuel will be stored in bunded areas in the chemicals stores. The treatment of the contaminated dredge sediment will be undertaken in contained treatment cells.
- A Marine Mammal Observer will be engaged before and during noise-producing licensed activities and activities associated with licensed activities at the facility that may cause disturbance impacts on the Harbour Porpoise, which is highly mobile within its habitat.
- Noise-producing activities will only take place during daylight hours where visibility provides for effective monitoring.

In light of the foregoing reasons no reasonable scientific doubt remains as to the absence of adverse effects on the integrity of those European Sites Glengarriff Harbour and Woodland SAC (Site Code: 000090) and Roaringwater Bay and Islands SAC (Site Code: 000101).

10.2 Seveso Directive (2012/18/EU)

The applicant has stated that the facility is not one to which the Seveso III Directive applies, which has been implemented in Ireland via the Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations, SI 209/2015. The Health and Safety Authority (HSA) is the competent authority responsible for administration and enforcement of these regulations.

10.3 Air Quality Directives (2008/50/EC and 2004/107/EC)

As outlined above, there will be no point source emissions to air and diffuse emissions will be minimal, limited mainly to dust emissions from vehicle movements onsite. Therefore, licensable activities are not likely to give rise to emissions from the facility that cause any breaches of relevant Air Quality Standards, as specified in S.I. No. 180 of 2011 and/or S.I. No. 58 of 2009.

10.4 Waste Framework Directive (2008/98/EC)

The conditions of the RD meet the requirements generally of the Directive and in particular articles 13 and 23 which set out the minimum requirements for waste management and waste licences respectively.

10.5 Environmental Liability Directive (2004/35/CE)

The Environmental Liabilities Directive has been transposed into national legislation by European Communities (Environmental Liability) Regulations 2008 (SI 547/2008). An Environmental Liabilities Risk Assessment (ELRA) and a Closure, Restoration and Aftercare Management Plan (CRAMP) have been completed by the applicant.

The RD includes conditions and schedules which require the licensee to control operation of the activity and meet the specified emission limit values. Condition 10 requires the licensee to maintain a fully detailed and costed plan for closure, restoration and aftercare of the site or part thereof and the CRAMP to be reviewed

annually. Condition 12 of the RD as drafted, satisfies all the requirements of the Environmental Liabilities Directive in particular those requirements outlined in Article 3(1) and Annex III of 2004/35/EC.

10.6 Water Framework Directive [2000/60/EC]

The RD generally complies with the requirements of the Water Framework Directive and the Environmental Objectives Regulations addressing surface water and groundwater as set out in sections 6.3 and 6.4 above.

11. Cross Office Liaison

In preparing this report and Recommended Decision, I consulted with the following technical experts:

- Ms Deirdre French, technical advisor for matters related to Appropriate Assessment;
- Ms Pamela McDonnell, technical advisor for matters related to Environmental Impact Assessment; and,
- Mr John Gibbons, Office of Environmental Enforcement for matters related to noise.
- Mr Colman Concannon, Office of Evidence and Assessment for matters related to surface water standards.

12. Site Visit

A site visit was undertaken on 23rd May 2016 where the location details of the facility boundary and proposed waste activities, as presented in the licence application, were observed on the ground. Construction activities had commenced at the quayside, with preparatory works underway for sheet piling, as shown in Figure 4 and Figure 5 below.

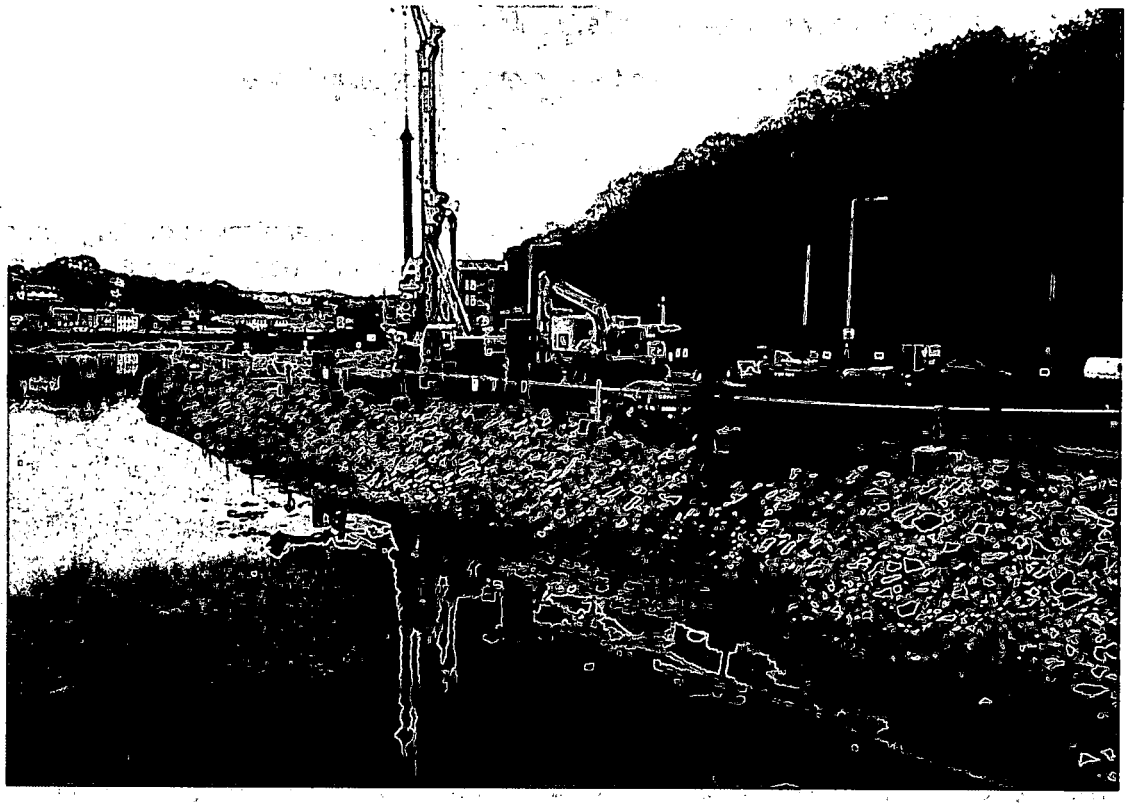

Figure 4 Construction works underway at quayside, view from pier

Figure 5 Construction works underway at quayside, looking north to proposed amenity area

13. Fit & Proper Person Assessment

The Fit & Proper Person test requires three elements of examination:

Technical Ability

The applicant has provided details of the qualifications, technical knowledge and experience of key personnel. The licence application also includes information on the on-site management structure for the environmental management system. It is considered that the applicant has demonstrated the technical knowledge required.

Legal Standing

Neither the applicant nor any relevant person has relevant convictions under the Environmental Protection Agency Act 1992, as amended, the Waste Management Act 1996, as amended, the Local Government (Water Pollution) Acts 1997 and 1990, the Air Pollution Act 1987 and the Air Pollution Act 1987 (Environmental Specifications for Petrol and Diesel Fuels)(Amendment) Regulations 2004.

Financial Standing

The applicant submitted a CRAMP, for which the worst case scenario (abandonment) assumes the fill areas are 90-95% full but uncapped, with 2,600m^3 of dredge sediment in treatment cells and on the barges awaiting treatment, indicating a cost of €710,479. This also takes into account the cost of 12 months of monitoring post-mitigation. An ELRA was provided by the applicant in which a costing of €33,814 was proposed, representing the worst case scenario of fuel loss due to rupture of mobile bunds maintained onsite.

It is considered that the proposed activity is low risk activity. Condition 12.2.3 of the RD required the licensee to make financial provision to cover any liabilities associated with the operation. It is my view, and having regard to the conditions of the RD, that the applicant can be deemed a Fit & Proper Person for the purpose of this application.

14. Environmental Impact Assessment (EIA) Directive (85/337/EEC, as amended)

The following section identifies, describes and assesses the likely significant direct and indirect effects of the proposed activities on the environment, as respects the matters that come within the functions of the Agency, for each of the following factors: human beings, flora, fauna, soil, water, air, climate, the landscape, material assets and cultural heritage.

The main mitigation measures proposed to address the range of predicted significant impacts arising from the activity have also been outlined. The cumulative impacts with other developments in the vicinity of the activity have also been considered, as regards the impacts of emissions from the activities. This section must be read in conjunction with the analysis carried out in all sections of this report.

14(a) Human Beings

Likely significant effect	Description of effect	Assessment addressed in section:
Traffic	Traffic and its associated emissions may cause disamenity to neighbouring residents.	14(a)(i)
Impact on air quality	Emissions of dust.	14(e)(i)
Noise nuisance	Licensed activities on site may cause disamenity from noise emissions.	14(a)(ii)
Odour nuisance	Odour arising from treatment operations on site may lead to disamenity through odour nuisance	14(a)(iii)
Accidents	An accident occurring onsite may lead to emissions to the local atmosphere, ground and water bodies, potentially causing pollution of those media.	14(d)(ii)

Assessment of Effects on Human Beings

14(a)(i) Traffic

Traffic will be associated with the activity primarily for the delivery of raw materials and for the removal of residual wastes from the site. This is likely to create noise and possible dust nuisance and potentially escape of waste material onto roadways.

Mitigation Measures

The following mitigation measures will further reduce the likelihood of a negative impact on human beings from traffic:

- Condition 3.16 provides for wheel cleaning to be undertaken on all vehicles leaving the facility, to ensure that no waste is carried offsite.
- Condition 6.10.2 provides for controls on the roads in the vicinity of the facility in terms of debris caused by vehicles entering or leaving the facility.
- Planning permission (Ref:12/00735) for the facility includes provision for traffic safety.

Conclusion

Based on the above assessment, the site design and the mitigation measures in place, I am satisfied that there will not be significant effects on the environment from traffic from the on-site activities.

Accordingly, if the activity is carried out in accordance with the RD and the conditions attached, the operation of the activity will not cause environmental pollution. The conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

14(a)(ii) Noise nuisance

As discussed in section 6.6 above, the facility is located adjacent to Bantry town and the N71 Cork to Killarney road. Noise will arise from licensable and other construction activities (including preparatory construction works) which will include operation of plant in the waste treatment area and vibration from the piling that will be necessary at the facility in advance of waste activities commencing. Noise could potentially cause disturbance to fauna in the vicinity of the facility and in particular the harbour porpoise.

Overall the noise assessment has confirmed that the activities, under worst case conditions, will not lead to a significant noise impact in the area and will comply with applicable limits at all times of the day and night for construction projects.

Mitigation Measures

Standard noise conditions and emission limit values have been set in the RD, which provides for noise monitoring to be undertaken and a noise survey to be carried out as required by the Agency. The RD also includes specific conditions to address potential noise disturbance that may impact on the harbour porpoise, including the engagement of a Marine Mammal Observer to carry out monitoring at relevant times.

Conclusion

Based on the above assessment, I am satisfied that the mitigation measures in place and proposed will prevent an occurrence of a significant effect.

Accordingly, if the activity is carried out in accordance with the RD and the conditions attached, the operation of the activity will not cause environmental pollution. The conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

14(a)(iii) Odour nuisance

As discussed in section 6.1 above, diffuse odour emissions may occur, potentially as a result of hydrogen sulphide released during dredging which may continue to be released during treatment of the contaminated sediment

Mitigation

An odour management plan will be put in place and the RD also includes standard conditions to control odour nuisance.

Conclusion

Based on the above assessment and the mitigation measures in place, I am satisfied that there will not be significant effects on the environment from odour at the facility.

Accordingly, if the activity is carried out in accordance with the RD and the conditions attached, the operation of the activity will not cause environmental pollution. The conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

14(b) Flora & fauna

Likely significant effect	Description of effect	Effect assessed in section:
Water pollution damaging aquatic habitats or directly impacting aquatic flora/fauna	Polluted surface marine water, arising from accidental emissions from the facility, could damage aquatic habitats and/or individual aquatic species.	14(d)(i)
Noise disturbance	Noise arising from the licensed activities could cause disturbance to fauna in the vicinity of the facility and in particular the harbour porpoise.	14(a)(ii)
Adverse impacts on SACs and SPAs	The facility is located in proximity to a number of designated sites. The deposition of treated sediment may potentially result in pollution of the designated sites, impacting on the flora and fauna.	14(b)(i)

Assessment of Effects on Flora and Fauna

14(b)(i) Adverse impacts on SACs and SPAs

The deposition of treated dredge sediment has the potential to impact on water quality due to increased suspended sediments in the water body and potential dispersal of contaminants. However, as discussed in section 6.3 above, an Environmental Quantitative Risk Assessment (EQRA) was carried out by the applicant, which concluded that the likelihood of contaminants leaching from the low permeability treated sediment is low. In addition, the low permeability PERS and the impermeable sheet pile system proposed will further reduce the connectivity of the harbour waters with the treated sediment, and will also protect the area from tidal flows and potential erosion. Adverse impacts on the SACs and SPAs in the vicinity of the facility may occur in the event of accidental emissions from the facility.

Mitigation

The following mitigation measures will reduce the likelihood of adverse impacts on SACs and SPAs:

- Automatic marine water quality monitoring will take place in two locations near the facility boundary. In addition, a further daily manual water quality monitoring point will be located in close proximity to the site.
- The amenity area will be lined with a low permeability geotextile membrane and the sheet pile structure at the town pier and quayside will be impermeable, thus reducing or eliminating the risk of contaminants entering the environment.

Conclusion

Based on the above assessment, the site design and the mitigation measures in place, I am satisfied that the likelihood of adverse impacts on SACs and SPAs is negligible.

Accordingly, if the activity is carried out in accordance with the RD and the conditions attached, the operation of the activity will not cause environmental pollution. The conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

14(c) Soil

Likely significant effect	Description of effect	Effect assessed in section:
Impact on soil quality from the operation of the activity	It is not anticipated that the operation of the activity will impact on soils.	14(c)(i)

Assessment of Effects on Soil

14(c)(i) Impact on soil quality from the operation of the activity

It is not anticipated that the operation of the activity will impact on the soils in the area, given the nature of the marine environment.

Mitigation

No mitigation measures have been proposed in the RD.

Conclusion

I am satisfied that the likelihood of adverse impacts on soil is negligible.

Accordingly, if the activity is carried out in accordance with the RD and the conditions attached, the operation of the activity will not cause environmental pollution. The conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

14(d) Water

Likely significant effect	Description of effect	Effect assessed in section:
Contamination of surface water	Potential discharge of contaminated run-off to surface water may cause adverse effects on surface water quality.	14(d)(i)

Contamination of groundwater	Potential contamination of groundwater resulting from leaching of contaminants from treated sediment.	14(d)(i)
Accidents	Emissions to ground and surface water bodies in the event of spillage of contaminated sediment, causing adverse effects on water quality.	14(d)(ii)

Assessment of Effects on Water

14(d)(i) Contamination of surface water and groundwater

There will be no direct discharge of surface water runoff. Storm water will percolate through the site and undergo natural attenuation. There is no connectivity between the groundwater in the area and the fill areas in the facility. In addition, the treated sediment resulting from both ex-situ and in-situ treatment will have low permeability and therefore contaminants are not likely to leach out into the environment. The coarse-grained sediments deposited directly into the fill area will not be a source of contamination or contaminated leachate.

Mitigation

The following mitigation measures will reduce the likelihood of adverse impacts on surface water quality:

- The applicant has committed to using an independent laboratory for testing samples of treated sediment.
- Leachate limits are prescribed in schedule B.6 and requirements for testing of untreated and treated waste is provided for in Schedule C.4.
- Condition 6.2 of the RD provides for sampling and analysis to be carried out to prescribed standards.
- Periodic testing will take place to determine the optimum percentage of cement additive to be used.

Conclusion

I am satisfied that based on the above assessment, the mitigation measures proposed will prevent an occurrence of a significant effect on surface water and groundwater quality.

Accordingly, if the activity is carried out in accordance with the RD and the conditions attached, the operation of the activity will not cause environmental pollution. The conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

14(d)(ii) Accidents

An accident such as spillage of contaminated sediment at the facility could have an adverse effect on water quality due to the presence of contaminants. As discussed in section 9, there are a range of measures planned that will help to prevent accidents at the facility and limit their environmental consequences.

Mitigation

The following mitigation measures will reduce the likelihood of accidents and mitigate the effects of the consequences of an accident:

- Emergency management procedures will be put in place at the facility.
- Chemicals stored onsite will be limited, and will be stored in dedicated chemical stores, which will be bunded.
- Condition 9 of the RD specifies accident prevention and emergency response requirements.

Conclusion

Based on the above assessment, I am satisfied that in the unlikely event of an accident, the mitigation measures outlined above would limit the environmental consequences.

Accordingly, if the activity is carried out in accordance with the RD and the conditions attached, the operation of the activity will not cause environmental pollution. The conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

14(e) Air

Likely significant effect	Description of effect	Effect assessed in section:
Odour nuisance	Odour arising from site operations, may result in a deterioration of air quality in the vicinity of the facility.	14(a)(iii)
Dust deposition beyond the facility boundary	Dust may arise from the storage and treatment of waste at the facility.	14(e)(i)
Noise nuisance	Licensed activities on site may cause disamenity from noise emissions.	14(a)(ii)

Assessment of Effects on Air

14(e)(i) Dust deposition beyond the facility boundary

As discussed in section 6.1 above, diffuse emissions of dust may occur during treatment of waste at the facility, particularly during periods of dry weather. However, the dredge sediment will have an inherently high moisture content and therefore the risk of dust nuisance occurring is in fact low. Dust emissions may also occur from vehicle movement within the facility.

Mitigation

A dust management plan will be put in place which will include measures aimed at minimising dust nuisance. The RD also includes standard conditions to control dust, including controls on site roads, wheel wash facilities and materials management.

Conclusion

I am satisfied that based on the above assessment, the mitigation measures proposed will prevent an occurrence of a significant effect resulting from potential emissions of dust.

Accordingly, if the activity is carried out in accordance with the RD and the conditions attached, the operation of the activity will not cause environmental pollution. The conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

14(f) Climate

Likely significant effect	Description of effect	Effect assessed in section:
Release of climate altering substances	Climate altering substances may be released in small quantities from traffic associated with the facility.	14(f)(i)

Assessment of Effects on Climate

14(f)(i) Release of climate altering substances

Climate change is a significant global issue which affects weather and environmental conditions which consequently affects human resources and amenities as well as biodiversity and habitats. Transport emissions contribute to the overall emissions of carbon dioxide, which is the dominant greenhouse gas in Ireland's climate emissions profile.

Mitigation

The RD requires energy efficiency and resource use efficiency to be addressed as part of the Resource Use and Energy Programme.

Conclusion

I am satisfied that there will not be significant effects on the climate from activities at the facility.

Accordingly, if the activity is carried out in accordance with the RD and the conditions attached, the operation of the activity will not cause environmental pollution. The conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

14(g) Landscape, Material Assets & Cultural Heritage

Likely significant effect	Description of effect	Effect assessed in section:
Disturbance of archaeology from the operation of the activity	The operation of the activity may impact on (underwater) archaeological features.	14(g)(i)

Disturbance of architecture from the operation of the activity	The operation of the activity may impact on the architectural and engineering heritage of the area.	14(g)(i)
Landscape and visual impact from the operation of the activity	No additional impacts on the landscape are expected from the operation of the activity.	14(g)(ii)

Assessment of Effects on landscape, material assets and cultural heritage

14(g)(i) Disturbance of archaeology and architecture from the operation of the activity

Any loss of archaeological or architectural heritage could impact negatively on human beings. These matters are dealt with in the decision of Cork County Council to grant planning permission for the facility and are not controlled by the Agency. The Planning Authority has included conditions to protect the archaeological and architectural heritage of the site.

Mitigation

No mitigation measures have been proposed in the RD.

Conclusion

Based on the above assessment, I am satisfied that there will not be significant effects on archaeology or architecture from the operation of the activity.

Accordingly, if the activity is carried out in accordance with the RD and the conditions attached, the operation of the activity will not cause environmental pollution.

14(g)(ii) Landscape and visual impact from the operation of the activity

It is not anticipated that there will be additional impacts on the landscape and visual amenity of the area from activities at the facility.

Mitigation

No mitigation measures have been proposed in the RD.

Conclusion

Based on the above assessment, I am satisfied that there will not be significant effects on the landscape or cultural heritage of the area from the operation of the activity.

Accordingly, if the activity is carried out in accordance with the RD and the conditions attached, the operation of the activity will not cause environmental pollution.

14(h) Interaction of effects and in-combination effects

I have considered the interaction between the factors referred to in Tables 14(a) to 14(g) above and the interaction of the likely effects identified.

The interaction between factors as a results of the operation of the facility are summarised below:

	Human Beings	Flora and Fauna	Soil	Water	Air	Climate	LMACH Note 1
Human Beings							
Flora and Fauna							
Soil		✓					
Water		✓	✓				
Air	✓	✓					
Climate	✓						
LMACH Note 1	✓			✓			

Note 1: LMACH = Landscape, Material Assets and Cultural Heritage

The most significant interactions, as addressed in the earlier parts of this report, are as follows:

Flora and Fauna and Water

The potential risk of pollution incidents to water quality during operation of the facility can be harmful to birds, marine mammals, benthic ecology and fisheries.

Air and Human Beings

During the construction phase, the generation for noise, dust and odour has the potential to temporarily disturb people, therefore mitigation measures have been proposed.

Water and Soils

The dredging and treatment of contaminated sediments has the potential to release contaminants to the receiving waters and groundwater.

Based on the assessment in parts 14 (a) to (g) above, and the mitigation measures proposed (including the relevant conditions in the licence), I do not consider that the interactions identified are likely to cause or exacerbate any potentially significant environmental effects of the activity.

15. Reasoned Conclusion on Environmental Impact Assessment

Having regard to the impacts (and interactions) identified, described and assessed above, I consider that the mitigation measures proposed will enable the activity to operate without causing environmental pollution. I also consider that the potential impacts on the environment identified above, even if they occur, are unlikely to damage the environment, and the risk of them occurring is not unacceptable.

16. Recommended Determination (RD)

The RD if granted will authorise the treatment of contaminated and uncontaminated dredge sediment and/or its recovery by infill at the facility. The RD includes a wide

range of conditions that will ensure proper handling of wastes, the control and monitoring of dust and noise emissions and the prevention of nuisance. Overall, I am satisfied that the conditions set out in the RD will adequately address all emissions from the facility and will ensure that the carrying on of activities in accordance with the conditions of the RD will not cause environmental pollution.

17. Charges

The annual enforcement change recommended in the RD is €5,458, which reflects the anticipated enforcement effort required and the cost of monitoring.

18. Recommendation

I recommend that a Proposed Determination be issued subject to the conditions and for the reasons as drafted in the RD.

Signed

Caitríona Collins

Caitríona Collins

Procedural Note

In the event that no objections are received to the Proposed Determination of the application, a licence will be granted in accordance with Section 87(4) of the Environmental Protection Agency Acts 1992 as amended as soon as may be after the expiration of the appropriate period.

Appendix 3 Assessment of the effects of the activity on European sites and proposed mitigation measures

	European Site (site code)	Distance/ Direction from facility activity	Qualifying interests (* denotes a priority habitat)	Conservation objectives	Assessment
1	Glengarriff Harbour and Woodland SAC Site code: 000090	7.2km km northwest of the facility.	**Habitats:** Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae)* **Species:** Kerry Slug (*Geomalacus maculosus*) Lesser Horseshoe Bat (*Rhinolophus hipposideros*) Otter (*Lutra lutra*) Common Seal (*Phoca vitulin*)	As per NPWS (2015) Conservation Objectives: Glengarriff Harbour and Woodland SAC [000090]. Version 1. Department of Arts, Heritage and the Gaeltacht (dated 11/05/2015).	**Emissions to Water and Coastal Processes** Potential emissions of heavy metals and other contaminants may occur from the untreated and treated dredge sediment, leading to potential adverse impact on water quality in Bantry Bay. **Conclusion** The results of coastal process modelling conclude that there will be no significant impact on the intertidal habitats that support the species designated as qualifying interests. Water quality monitoring is required under Schedule C.2.2 of the licence and the treatment of the contaminated sediment will be tailored to the level of contamination, by onsite laboratory analysis. The Environmental Quality Risk Assessment demonstrated that the risk of contaminants leaching from the treated sediment is low and the low permeability PERS and impermeable sheet pile system will prevent contaminants entering Bantry Bay. **Potential for accidents to arise** The risk of accidents from this facility is very low but if they were to occur would potentially involve oil, fuel or cementitious material entering Bantry Bay. This could result in an adverse effect on the water quality of the European sites and impact on the qualifying interests.

	European Site (site code)	Distance/ Direction from facility activity	Qualifying interests (* denotes a priority habitat)	Conservation objectives	Assessment
					Conclusion There will be no bulk storage of fuels onsite. Small quantities of fuel will be stored in bunded areas in the chemicals stores. The treatment of the contaminated dredge sediment will be undertaken in contained treatment cells. **Disturbance** Human activities associated with licensed activities at the facility, such as piling, have the potential to cause noise and other disturbance to the Harbour Porpoise, which is highly mobile within its habitat. **Conclusion** A Marine Mammal Observer will be engaged during licensed activities and activities associated with licensed activities at the facility that may impact on the Harbour Porpoise. Noise-producing activities will only take place during daylight hours where visibility provides for effective monitoring. These requirements have been reflected in conditions of the licence.
2	Roaringwater Bay and Islands SAC Site Code: 000101	13.2km south of the facility	**Habitats:** Large shallow inlets and bays Reefs Vegetated sea cliffs of the Atlantic	As per NPWS (2015) Conservation Objectives: Roaringwater Bay and Islands SAC [000101]. Version 1. Department of Arts, Heritage and the	**Emissions to Water and Coastal Processes** Potential emissions of heavy metals and other contaminants may occur from the untreated and treated dredge sediment, leading to potential adverse impact on water quality in Bantry Bay. The Environmental Quantitative Risk Assessment demonstrated that the risk of

	European Site (site code)	Distance/ Direction from facility activity	Qualifying interests (* denotes a priority habitat)	Conservation objectives	Assessment
			and Baltic coasts European dry heaths Submerged or partially submerged sea caves **Species:** Harbour Porpoise (*Phocoena phocoena*) Otter (*Lutra lutra*) Grey Seal (*Halichoerus grypus*)	Gaeltacht (dated 19/07/2011).	contaminants leaching from the treated sediment is low and the low permeability PERS and impermeable sheet pile system will prevent contaminants entering Bantry Bay. **Conclusion** The results of coastal process modelling conclude that there will be no significant impact on the intertidal habitats that support the species designated as qualifying interests. Water quality monitoring is required under Schedule C.2.2 of the licence and the treatment of the contaminated sediment will be tailored to the level of contamination, by onsite laboratory analysis. The Environmental Quantitative Risk Assessment demonstrated that the risk of contaminants leaching from the treated sediment is low and the low permeability PERS and impermeable sheet pile system will prevent contaminants entering Bantry Bay. **Potential for accidents to arise** The risk of accidents from this facility is very low but if they were to occur would potentially involve oil, fuel or cementitious materials entering Bantry Bay. This could result in an adverse effect on the water quality of the European sites and impact on the qualifying interests. **Conclusion** There will be no bulk storage of fuels onsite. Small quantities of fuel will be stored in bunded areas in the chemicals stores. The treatment of the contaminated

	European Site (site code)	Distance/ Direction from facility activity	Qualifying interests (* denotes a priority habitat)	Conservation objectives	Assessment
					dredge sediment will be undertaken in contained treatment cells. **Disturbance** Human activities associated with licensed activities at the facility, such as piling, have the potential to cause noise and other disturbance to the Harbour Porpoise, which is highly mobile within its habitat. **Conclusion** A Marine Mammal Observer will be engaged during licensed activities and activities associated with licensed activities at the facility that may impact on the Harbour Porpoise. Noise-producing activities will only take place during daylight hours where visibility provides for effective monitoring. These requirements have been reflected in conditions of the licence.