

Appendix N – pCSMs and Risk Assessment

pCSM and Risk Assessment

Impact Assessments

Source	Receptors	Contaminant exposure / migration pathway	Baseline (current) Risk Assessment	Construction Phase Risk Assessment (with mitigation measures)	Classification of Effect	Operational Phase Risk Assessment (with mitigation measures)	Classification of Effect	
<p>ON-SITE:</p> <p>Yacht club: <i>Petroleum hydrocarbons, petrol additives, diesel and other organic compounds. Paints and varnishes.</i></p> <p>High voltage car charging station: <i>A range of inorganic and organic contaminants including metals, fuels / oils from electricity transformers.</i></p> <p>On site Made Ground: material of unknown provenance used for the construction of the harbour, piers and breakwaters which may include metals, inorganics, total petroleum hydrocarbons (TPHs), polycyclic aromatic hydrocarbons (PAHs) and asbestos.</p> <p>Historic harbour use: <i>potentially contaminated Made Ground / natural strata or sediment from the historical operation of the harbour which included the exportation of lead ore and ship building / maintenance. Possible contaminants may include metals, tributyltin, inorganics, total petroleum hydrocarbons (TPHs), volatile and semi-volatile organic compounds (VOCs and SVOCs), and polycyclic aromatic hydrocarbons (PAHs).</i></p> <p>Current harbour use: <i>potential source of metals, organics, and inorganics including and hydrocarbons from leaks and spillages.</i></p> <p>Operational car parking: <i>potential source of coal tars from the tarmac construction and localised TPHs from leakages and spillages.</i></p> <p>Former lime kilns: <i>potential source of alkalinity in soils and PAHs associated with the process.</i></p> <p>Former sawmill and tank: <i>contaminants from the process may include metals, total petroleum</i></p>	Human health: On-site	Members of the public walking the beach and the harbour side (proposed development area).	<ul style="list-style-type: none"> • Dermal contact with and / or ingestion of contaminants in soils, soil-derived dusts and water; and • Inhalation of soil derived dust, and fibres. 	Very Low risk	Receptor not present	Negligible	Very Low risk	Negligible
		Occupants of existing residential properties and visitors to those properties.		Very Low risk	Very Low risk	Negligible	Very low risk	Negligible
	Human health: Off-site	Members of the public accessing the surrounding area.	<ul style="list-style-type: none"> • Dermal contact with and/or ingestion of contaminants in windblown soil-derived dusts and water that may have migrated off site; and • Inhalation of windblown soil derived dust, and fibres which may have migrated off site. 	Very Low risk	Very Low risk	Negligible	Very Low risk	Negligible
		Occupants of nearby residential, commercial properties and visitors.		Very Low risk	Very Low risk	Negligible	Very Low risk	Negligible
	Controlled Waters: Groundwater, on and off site	Groundwater in Secondary A Aquifers (superficial and bedrock)	<ul style="list-style-type: none"> • Leaching / migration of contaminants in soil to groundwater in underlying aquifers; and • Migration of contaminated water through preferential pathways such as underground services, pipes and granular material to groundwater in underlying aquifers. 	Low risk	Low risk	Negligible	Low risk	Negligible
	Controlled Waters: Surface waters on site	River Aeron	<ul style="list-style-type: none"> • Lateral migration of contaminated groundwater with discharge to surface watercourses as base flow; and • Discharge of contaminants entrained in groundwater and/or surface water run-off followed by overland flow to surface water. 	Low risk	Low risk	Negligible	Low risk	Negligible
		Un-named stream at southern end of sea defences		Low risk	Low risk	Negligible	Low risk	Negligible
		Irish Sea		Very Low risk	Very Low risk	Negligible	Very Low risk	Negligible
	Controlled Waters: Surface waters off site	Un-named tributary of the River Aeron	<ul style="list-style-type: none"> • Lateral migration of contaminated groundwater with discharge to surface watercourses as base flow; and • Discharge of contaminants entrained in groundwater and/or surface water run-off followed by overland flow to surface water. 	Very Low risk	Very low risk	Negligible	Very low risk	Negligible
	Property / services: On site	Existing on-site infrastructure	<ul style="list-style-type: none"> • Direct contact of contaminants in soil and/or groundwater with existing and proposed structures and buried services 	Very low risk	Very low risk	Negligible	Very low risk	Negligible
Proposed sea defence infrastructure		Receptor not present		Receptor not present	Receptor not present	Very low risk	Negligible	
Property / services: Off site	Existing residential and commercial properties	<ul style="list-style-type: none"> • Migration of contaminated groundwater, ground gas and/or vapours along strata and preferential pathways such as service routes or differentially permeable strata 	Very low risk	Very low risk	Negligible	Very low risk	Negligible	

hydrocarbons (TPHs), polycyclic aromatic hydrocarbons (PAHs) and wood treating agents (creosote, solvents).

<p>OFF-SITE: Made Ground associated with Historic Landfill: potential source of a leachable organic and inorganic contaminants.</p>	Human health: On-site	Members of the public walking the beach and the harbour side (proposed development area).	<ul style="list-style-type: none"> • Dermal contact with and/or ingestion of contaminants in windblown soil-derived dusts and water that may have migrated; and • Inhalation of windblown soil derived dust, and fibres which may have migrated. 	Very Low risk	Receptor not present	Negligible	Very low risk	Negligible
		Occupants of existing residential properties and visitors to those properties.	Very Low risk	Very Low risk	Negligible	Very low risk	Negligible	
	Human Health: Off Site	Members of the public accessing the surrounding area.	<ul style="list-style-type: none"> • Dermal contact with and/or ingestion of contaminants in windblown soil-derived dusts and water that may have migrated; and • Inhalation of windblown soil derived dust, and fibres which may have migrated. 	Very Low risk	Very Low risk	Negligible	Very low risk	Negligible
		Occupants of nearby residential, commercial properties and visitors.	Very Low risk	Very Low risk	Negligible	Very low risk	Negligible	
	Controlled Waters: Groundwater, on and off site	Groundwater in Secondary A Aquifers (superficial and bedrock)	<ul style="list-style-type: none"> • Lateral migration of contaminated groundwater with discharge to surface watercourses as base flow; and • Discharge of contaminants entrained in groundwater and/or surface water run-off followed by overland flow to surface water. 	Low risk	Low risk	Negligible	Low risk	Negligible
	Controlled Waters: Surface waters on site	River Aeron	<ul style="list-style-type: none"> • Lateral migration of contaminated groundwater with discharge to surface watercourses as base flow; and • Discharge of contaminants entrained in groundwater and/or surface water run-off followed by overland flow to surface water. 	Very Low risk	Very Low risk	Negligible	Very low risk	Negligible
		Un-named stream at southern end of sea defences		Very Low risk	Very Low risk	Negligible	Very low risk	Negligible
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