

East Meath - North Dublin Grid Upgrade Environmental Impact Assessment Report (EIAR): Volume 3

Appendix A11.1 Contaminated Land Assessment

EirGrid

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1.1 Preliminary Conceptual Site Model (CSM)

Table 1: Preliminary CSM

Source	Receptor	Pathway	Pollutant Linkage
Construction Phase			
Contaminants within soil and groundwater	Human health (construction workers)	Dermal contact, ingestion and inhalation of impacted soil, dust, fibres (asbestos) and waters.	PL 1
		Migration of ground gases and vapours to shallow pits or enclosed spaces.	PL2
	Human health (adjacent residents / workers, transient foot traffic)	Dermal contact, ingestion and inhalation of windblown soil, dust, fibres (asbestos) during construction.	PL3
		Migration of ground gases into homes or workplaces via preferential pathways during construction.	PL4
	Groundwater	Leaching and migration of surface contaminants through natural deposits and made ground.	PL5
		Surface water runoff from stockpiled excavated material.	PL6
		Leaks and spills from site plant and materials storage.	PL7
		Discharge of intercepted contaminated groundwater during passive or active dewatering.	PL8
	Surface water, ecological receptors	Migration / mobilisation of contaminated shallow groundwater through drift deposits.	PL9
		Surface water runoff from stockpiled excavated material.	PL10
		Leaks and spills from site plant and materials storage.	PL11
		Discharge of intercepted contaminated groundwater during passive or active dewatering.	PL12
	Property	Direct contact with sub-surface materials including reduced quality made ground.	PL13
		Migration of ground gases into property through preferential pathways posing a potential explosion risk from ignition of explosive gases.	PL14
Operational Phase			
Contaminants within soil and groundwater	Human health (maintenance workers)	Dermal contact, ingestion and inhalation of soil, dust, fibres (asbestos) and waters during routine maintenance.	PL15
		Migration of ground gases and vapours to enclosed spaces.	PL16
	Human health (end users, adjacent residents, workers)	Dermal contact, ingestion and inhalation of windblown soil, dust, fibres (asbestos) from retained surface soils.	PL17
		Migration and accumulation of ground gases into homes or workplaces via preferential pathways created during construction.	PL18
	Groundwater	Leaching and migration of contaminants.	PL19
		Surface water runoff from placed excavated material.	PL20
		Migration of contaminated shallow groundwater through drainage channels and associated granular bedding materials.	PL21
		Discharge of intercepted contaminated groundwater.	PL22
		Leaks / spills from operational plant.	PL23
	Surface water, ecological receptors	Leaching and migration of contaminants.	PL24
		Surface water runoff from placed excavated material.	PL25
		Migration of contaminated shallow groundwater through drainage channels and associated granular bedding materials.	PL26
		Discharge of intercepted contaminated groundwater.	PL27
	Property	Leaks / spills from operational plant.	PL28
Direct contact with sub-surface materials including made ground.		PL29	
Migration of ground gases into property through preferential pathways posing a potential explosion risk from ignition of explosive gases.		PL30	

1.2 List of Sources and Screening Assessment

Table 2: List of Sources and Screening Assessment

Source No.	Source	Nearest Approximate Chainage	Distance from Planning Application Boundary (m)	Information and Assessment Summary	Severity	Construction Likelihood	Construction Risk	Operation Likelihood	Operation Risk
C01	Section 4 discharge	7,400	155m	Trade effluent discharge for Dunboyne Nursing home. At a distance from the Planning Application Boundary, unlikely to be disturbed by construction activities.	Mild	Unlikely	Negligible	Unlikely	Negligible
C02	Licensed Materials Recovery Facility	11,425	80m east	At distance from the Planning Application Boundary, potential for contamination. Not specifically targeted by ground investigation. Unlikely to be disturbed by construction.	Mild	Unlikely	Negligible	Unlikely	Negligible
C03Z	Historical Marl Pit	11,675	140m west	Small area at a distance from the Planning Application Boundary, unknown fill type. Potential for contamination. At a distance from the Planning Application Boundary unlikely to be disturbed by construction activities.	Mild	Unlikely	Negligible	Unlikely	Negligible
C04	Railway	12,950	Within Planning Application Boundary	Within Planning Application Boundary. . Potential for contamination.	Mild	Likely	Moderate / Low	Unlikely	Negligible
C05	Section 4 discharge	13,275	40m east	Trade effluent discharge license for Garden works Dunboyne. At a distance from the Planning Application Boundary, unlikely to be disturbed by construction.	Mild	Unlikely	Negligible	Unlikely	Negligible
C06	Historical Gravel Pit	18,150	175m south	At a distance from the Planning Application Boundary, unknown fill type. Potential for contamination within unknown fill. At a distance from the Planning Application Boundary unlikely	Mild	Unlikely	Negligible	Unlikely	Negligible

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Source No.	Source	Nearest Approximate Chainage	Distance from Planning Application Boundary (m)	Information and Assessment Summary	Severity	Construction Likelihood	Construction Risk	Operation Likelihood	Operation Risk
				to be disturbed by construction activities.					
C07	Historical Gravel Pit	18,525	130m north	Unknown fill type. Potential for contamination within unknown fill. At a distance from the Planning Application Boundary unlikely to be disturbed by construction activities.	Mild	Unlikely	Negligible	Unlikely	Negligible
C08	Top Oil Kilbride Service Station	19,200	90m east of the Planning Application Boundary	Current potential contamination source with possibility of fuel leaks / spills. At a distance from the Planning Application Boundary, unlikely to be disturbed by construction.	Medium	Unlikely	Low	Unlikely	Negligible
C09	Section 4 discharge	19,350	100m east	Trade effluent discharge license for Kilbride National School. At a distance from the Planning Application Boundary, unlikely to be disturbed by construction.	Mild	Unlikely	Negligible	Unlikely	Negligible
C10	Historical Smithy	20,000	150m west	Small area 150m west of the Planning Application Boundary. Potential for contamination. However, unlikely to be disturbed by construction activities.	Mild	Unlikely	Negligible	Unlikely	Negligible
C11	Historical Quarry	22,050	Within planning application boundary	Small area within Planning Application Boundary. Potentially infilled with unknown fill type.	Mild	Likely	Moderate / Low	Unlikely	Negligible
C12	Industrial Depot	22,600	10m south of the Planning Application Boundary	Industrial depot. Unlikely to be disturbed by construction activities.	Mild	unlikely	Negligible	Unlikely	Negligible
C13	Historical Quarry	23,100	200m east of Planning Application Boundary	Small area 200m east of the Planning Application Boundary, potentially infilled with unknown fill type. However,	Mild	Unlikely	Negligible	Unlikely	Negligible

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Source No.	Source	Nearest Approximate Chainage	Distance from Planning Application Boundary (m)	Information and Assessment Summary	Severity	Construction Likelihood	Construction Risk	Operation Likelihood	Operation Risk
				unlikely to be disturbed by construction activities.					
C14	Graveyard	23,950	10m west of the Planning Application Boundary	The ward graveyard. Moderate area, potential for emissions to groundwater from decomposition. Close to Planning Application Boundary, unlikely to be disturbed by or interact with construction activities.	Mild	Low Likelihood	Low	Unlikely	Negligible
C15	Historical quarry	24,050	15m east of the Planning Application Boundary	Small area 15m south of the Planning Application Boundary, potentially infilled with unknown fill type. However, unlikely to be disturbed by construction activities.	Mild	Low likelihood	Low	Unlikely	Negligible
C16	Section 4 Discharge	25,400	110m north	Trade effluent discharge license for New Park Nursing Home. At a distance from the Planning Application Boundary, unlikely to be disturbed by construction activities.	Mild	Unlikely	Negligible	Unlikely	Negligible
C17	Historical Gravel Pit	25,450	111m south of the Planning Application Boundary	At a distance from the Planning Application Boundary, unknown fill type. Potential for contamination within unknown fill. At a distance from the Planning Application Boundary unlikely to be disturbed by construction activities.	Mild	Unlikely	Negligible	Unlikely	Negligible
C18	Car mechanic	25,500	10m south of the Planning Application Boundary	Car mechanic works. Unlikely to be disturbed by construction activities.	Mild	Unlikely	Negligible	Unlikely	Negligible
C19	Historical quarry	25,700	60m north-east of the Planning Application Boundary	Small area 65m northeast of the Planning Application Boundary, potentially infilled with unknown fill	Mild	Unlikely	Negligible	Unlikely	Negligible

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Source No.	Source	Nearest Approximate Chainage	Distance from Planning Application Boundary (m)	Information and Assessment Summary	Severity	Construction Likelihood	Construction Risk	Operation Likelihood	Operation Risk
				type. However, unlikely to be disturbed by construction activities.					
C20	Historical graveyard	26,850	Adjacent to Planning Application Boundary	Moderate area, potential for emissions to groundwater from decomposition. Close to the Planning Application Boundary, however, unlikely to be disturbed by or interact with construction activities.	Mild	Low likelihood	Low	Unlikely	Negligible
C21	Historical sandpit	26,950	90m north of the Planning Application Boundary	Moderate area, unknown fill type. Potential for contamination within unknown fill. At a distance from the Planning Application Boundary unlikely to be disturbed by construction activities.	Mild	Low likelihood	Low	Unlikely	Negligible
C22	Historical quarry	29,700	225m north-west of the Planning Application Boundary	Small area 225m north-west of the Planning Application Boundary, potential for contamination with unknown fill type.	Mild	Unlikely	Negligible	Unlikely	Negligible
C23	Historical quarry	30,600	250m north-west to the Planning Application Boundary	Small area 185m north-west of the Planning Application Boundary, potentially infilled with unknown fill type. However, unlikely to be disturbed by construction activities.	Mild	Unlikely	Negligible	Unlikely	Negligible
C24	Airport Lands	30,800 – 33,200	25m south of the Planning Application Boundary	Moderate to extensive area. Airport lands represent a potential source for fuels and Per- and Polyfluorinated Substances (PFAS) contamination.	Medium	Low Likelihood	Moderate / Low	Unlikely	Negligible
C25	Historical quarry	30,800	145m north-west to the Planning Application Boundary	Small area 200m northwest of the Planning Application Boundary, potentially infilled with unknown fill type. However, unlikely to be disturbed by construction activities.	Mild	Unlikely	Negligible	Unlikely	Negligible

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Source No.	Source	Nearest Approximate Chainage	Distance from Planning Application Boundary (m)	Information and Assessment Summary	Severity	Construction Likelihood	Construction Risk	Operation Likelihood	Operation Risk
C26	Historical quarry	30,825	240 north -west	Small area 240m north-west of the Planning Application Boundary, potentially infilled with unknown fill type. However, unlikely to be disturbed by construction activities.	Mild	Unlikely	Negligible	Unlikely	Negligible
C27	Historical Quarry	30,900	150m north	Small area 150m north of the Planning Application Boundary, potentially infilled with unknown fill type. However, unlikely to be disturbed by construction activities.	Mild	Unlikely	Negligible	Unlikely	Negligible
C28	Historical Smithy	33,350	5m north	Small area 150m north of the Planning Application Boundary, potentially infilled with unknown fill type. However, unlikely to be disturbed by construction activities.	Mild	Unlikely	Negligible	Unlikely	Negligible
C29	IPC license	33,400	100m north of the Planning Application Boundary	Integrated Pollution Control (IPC) Licence for Anglo Beef Processors. Meat processing site, unlikely to interact with construction activities given distance from route.	Mild	Unlikely	Negligible	Unlikely	Negligible
C30	Historical Lead mine	33,400	80m south of the Planning Application Boundary	Small area 80m south of the Planning Application Boundary, potentially infilled with unknown fill type. However, unlikely to be disturbed by construction activities.	Medium	Unlikely	Low	Unlikely	Negligible
C31	Limepark	33,400	50m south of the Planning Application Boundary	Small area 50m south of the Planning Application Boundary, potentially infilled within unknown fill type. However, unlikely to be disturbed by construction activities.	Mild	Unlikely	Negligible	Unlikely	Negligible
C32	Unlicensed Landfill	37,200	245m south of the Planning Application Boundary	Unlicensed landfill 245m south of the Planning Application Boundary. Infilled with unknown fill type. However, unlikely to be disturbed by construction activities	Mild	Unlikely	Low	Unlikely	Negligible

1.3 Updated CSM

Note: Hydrogeological and hydrological risks are assessed separately.

Table 3: Updated CSM

Source	Receptor	Pathway	Pollutant Linkage (PL)	Severity	Likelihood	Risk
Construction Phase						
Contaminants within soil and groundwater	Human health (construction workers)	Dermal contact, ingestion and inhalation of impacted soil, dust, fibres (asbestos) and waters.	PL1	Medium Potential sources of contaminated land identified including made ground, a graveyard within 10m from the Planning Application Boundary, a historical quarry within the Planning Application Boundary and a historical lead mine c. 80m south of the Planning Application Boundary. Ground investigation has generally indicated no elevated levels of contaminants are present at locations investigated; however, asbestos identified in made ground at one location.	Likely Any made ground and ground in the vicinity of these source areas will be excavated during construction. Construction workers will come into direct contact with excavated material.	Moderate
		Migration of ground gases and vapours to shallow pits or enclosed spaces.	PL2	Medium Ground gas may be generated by areas of infill in former quarries and natural superficial deposits with high organic content. No gas monitoring results available at time of reporting and potential for generation exists.	Low Likelihood Construction will involve excavation of pits and trenches. In some areas gas may be present and could build up to potentially hazardous concentrations, into which construction workers will enter.	Moderate / Low
	Human health (adjacent residents / workers, transient foot traffic)	Dermal contact, ingestion and inhalation of windblown soil, dust, fibres (asbestos) during construction.	PL3	Medium Potential sources of contaminated land identified including made ground, a graveyard within 10m from the Planning Application Boundary, a historical quarry within the Planning Application Boundary and a historical lead mine c. 80m south of the Planning Application Boundary. Ground investigation has generally indicated no elevated levels of contaminants are present at locations investigated. However, asbestos identified in made ground at one location.	Low Likelihood While areas of made ground will be subject to excavation / disturbance where they intersect the proposed route, receptors (i.e., local residents, workers and transient foot traffic) are not present in much of the study area given the agricultural land use.	Moderate / Low
		Migration of ground gases into homes or workplaces via	PL4	Medium	Low Likelihood	Moderate / Low

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Source	Receptor	Pathway	Pollutant Linkage (PL)	Severity	Likelihood	Risk
		preferential pathways during construction.		Ground gas may be generated by areas of infill in former quarries and natural superficial deposits with high organic content. No gas monitoring results available at time of reporting and potential for generation exists.	While the majority of the study area comprises farmland with no receptors a potentially complete pollutant linkage could be present where a building is present in more built-up areas of the route near an area of higher gas potential where construction could alter gas migration dynamics.	
	Property	Direct contact with sub-surface materials including made ground.	PL13	Mild Chemical attack / aggressive ground conditions resulting in damage and degradations to sub surface structures.	Likely Direct contact of construction materials with sub-surface likely.	Moderate / Low
		Migration of ground gases into property through preferential pathways posing a potential explosion risk from ignition of explosive gases.	PL14	Mild Ground gas may be generated by areas of infill in former quarries and natural superficial deposits with high organic content. No gas monitoring results available at time of reporting and potential for generation exists.	Unlikely Study Area is mainly agricultural with few receptors (buildings) present, and considering shallow depths of excavation, off site locations are not considered likely to be affected by off-site migration.	Negligible
Operational Phase						
Contaminants within soil and groundwater	Human health (Maintenance workers)	Dermal contact, ingestion and inhalation of impacted soil, dust, fibres (asbestos) and waters.	PL15	Medium Potential sources of contaminated land identified including made ground, a graveyard within 10m from the Planning Application Boundary, a historical quarry within the Planning Application Boundary and a historical lead mine c. 80m south of the Planning Application Boundary. Ground investigation has generally indicated no elevated levels of contaminants are present at locations investigated; however, asbestos identified in made ground at one location.	Unlikely Exposure to sub-surface materials will be limited post-construction. Maintenance workers may access service runs however unlikely to come into contact with soils.	Low
		Migration of ground gases and vapours to shallow pits or enclosed spaces.	PL16	Medium Ground gas may be generated by areas of infill in former quarries and natural superficial deposits with high organic content. No gas monitoring results available at time of reporting and potential for generation exists.	Low Likelihood There is the potential for the buildup of ground gas within enclosed spaces such as service runs and inspection chambers. However access to such spaces is not likely to be required often.	Moderate / Low

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Source	Receptor	Pathway	Pollutant Linkage (PL)	Severity	Likelihood	Risk
	Human health (adjacent residents / transient foot traffic)	Dermal contact, ingestion and inhalation of windblown soil, dust, fibres (asbestos) during operation.	PL17	Medium Potential sources of contaminated land identified including made ground, a graveyard within 10m from the Planning Application Boundary, a historical quarry within the Planning Application Boundary and a historical lead mine c. 80m south of the Planning Application Boundary. Ground investigation has generally indicated no elevated levels of contaminants are present at locations investigated. However, asbestos identified in made ground at one location.	Unlikely Post construction little contact will be possible with sub-surface by nearby site users, and windblown dust will be minimal once construction is complete.	Low
		Migration of ground gases into homes or workplaces via preferential pathways during operation.	PL18	Medium Ground gas may be generated by areas of infill in former quarries and natural superficial deposits with high organic content. No gas monitoring results available at time of reporting and potential for generation exists.	Unlikely While contaminated land sources have been identified in some locations the majority of the Study Area comprises of farmland. Alterations to gas migration dynamics are unlikely on completion of construction.	Low
	Property	Direct contact with sub-surface materials including made ground.	PL29	Mild Chemical attack / aggressive ground conditions resulting in damage and degradation to sub surface structures.	Unlikely Risks addressed at construction stage.	Negligible
		Migration of ground gases into property through preferential pathways posing a potential explosion risk from ignition of explosive gases.	PL30	Mild Ground gas may be generated by areas of infill in former quarries and natural superficial deposits with high organic content. No gas monitoring results available at time of reporting and potential for generation exists.	Unlikely Study Area is mainly agricultural with few receptors (buildings) present, and considering shallow depths of excavation, off site locations are not considered likely to be affected by off-site migration from works.	Negligible