

Welsh Government

M4 Corridor around Newport

Environmental Statement
Supplement
Appendix SS11.1

Summary Risk Matrix

M4CaN-DJV-EGT-ZG_GEN-AX-EN-0003

At Issue | December 2016

M4 Corridor Around Newport

Summary of Risks for Each Potential Area of Contamination

	Potential contamination source area	CL1	CL2	CL3	CL4	CL5	CL6	CL8	CL9	CL10	CL13	CL14	
	Risk during construction												
HUMAN HEALTH	Ingestion / dermal contact / inhalation of contaminated dusts and soils by C.workers	NR	V L	L	NR	L	V L	L	V L	V L	M	M to L	
	Inhalation of ground gas / vapours by C. workers from MG material	NR	V L	L	NR	NR	V L	V L	V L	NR	H	M	
	Inhalation of asbestos fibres by C. workers	NR	NR	NR	NR	NR	NR	NR	NR	NR	H	NR	
	Ingestion / dermal contact / inhalation of contaminated dusts and soils by off site public/users	NR	V L	V L	NR	V L	VL	NR	NR	V L	NR	V L	
	Inhalation of ground gas / vapours by off site public/users from MG material	NR	NR	V L	NR	NR	V L	NR	NR	NR	NR	V L	
	Inhalation of ground gas / explosion for C. workers from PEAT	NR	NR	NR	NR	NR	NR	H	NR	M	NR	M to L	M to L
CONTROLLED WATERS	Inhalation of ground gas / explosion for off site public from PEAT	NR	NR	NR	NR	NR	M to L	NR	NR	NR	NR	M to L	
	Contaminated surface runoff to surface water	NR	NR	NR	NR	V L	L	V L	L	VL	M	L	
	Contaminants leaching from MG into surface water	NR	NR	NR	NR	V L and L	L	V L	L	VL	L	VL	
	Perched water or aquifer groundwater entering surface water	NR	NR	NR	NR	NR	L	V L	L	V L	L	V L	
	Contaminants leaching from MG into deep aquifer	NR	L	V L	NR	NR	L	V L	L	V L	L	L	
	Contaminant migration from MG via band drains or piling	NR	NR	NR	NR	NR	L	V L	L	V L	L	L	
	Mobilisation of sediments	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dewatering pathway causing GW to contaminate surface water	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
	Risk during operation												
HUMAN HEALTH	Ingestion / dermal contact / inhalation of contaminated dusts and soils by MW	L	V L	NR	NR	V L	V L	V L	V L	V L	L	V L	
	Inhalation of ground gas / vapours by MW by MG material	L	V L	NR	NR	NR	V L	V L	V L	NR	L	V L	
	Inhalation of asbestos fibres by maintenance workers	NR	NR	NR	NR	NR	NR	NR	NR	NR	M to L	NR	
	Ingestion / dermal contact / inhalation of contaminated dusts and soils by motorway users	V L	V L	NR	NR	V L	V L	V L	V L	V L	V L	V L	
	Ingestion / dermal contact / inhalation of contaminated dusts and soils by off site general public/users	V L	V L	NR	NR	V L	NR	NR	NR	V L	V L	V L	
	Inhalation of ground gas / vapours by off site workers / public / motorway users by MG material	V L	V L	NR	NR	NR	V L	V L	V L	NR	V L	V L	
	Inhalation of ground gas / explosion for M. workers from PEAT	NR	NR	NR	NR	NR	NR	M	NR	M	NR	M to L	M to L
	Inhalation of ground gas / explosion for motorway users from PEAT	NR	NR	NR	NR	NR	M to L	NR	M to L	NR	M to L	M to L	
	Inhalation of ground gas / explosion for off site public from PEAT	NR	NR	NR	NR	NR	M to L	NR	NR	NR	NR	M to L	
CONTROLLED WATERS	Contaminated run-off to surface water	L	NR	NR	NR	NR	NR	NR	NR	NR	L	NR	
	Contaminants leaching from MG into surface water	NR	NR	NR	NR	NR	L	VL	L	VL	L	VL	
	Perched water or aquifer groundwater entering surface water	NR	NR	NR	NR	NR	L	V L	L	V L	L	V L	
	Contaminants leaching from MG into deep aquifer	V L	L	NR	NR	NR	L	VL	L	V L	V L	L	
	Contaminant migration from MG via band drains or piling	NR	NR	NR	NR	NR	L	V L	L	V L	V L	L	

Notes

* Risk level to be updated/verified following additional ground investigation.

^ refers to depot workers

Risk in **bold** indicates potential mitigation required.

Bracketed risks relate to a specific part of the CL site/feature as identified within the potential contamination source area heading.

Key

C. worker = Construction worker

CW = Controlled water

MG = Made Ground

MW = Maintenance worker

H = High Risk

M = Moderate Risk

L = Low Risk

VL = Very Low Risk

NR = Risk not considered relevant or negligible due to lack of contaminant source, receptor or pathway.

M4 Corridor Around Newport

Summary of Risks for Each Potential Area of Contamination

	Potential contamination source area	CL15	CL17 (PCB cell)	CL18	CL22 (benzene pipeline)	CL26 Lagoons	CL26 Reedbeds & MRA (Glan Llyn depot)	CL27	CL29	CL30	CL32	CL33
	Risk during construction											
HUMAN HEALTH	Ingestion / dermal contact / inhalation of contaminated dusts and soils by C.workers	M to L	H	M and L	L (M) *	M	M	M	L	V L	M	L
	Inhalation of ground gas / vapours by C. workers from MG material	M to L	M (H)	M and L	L (H) *	H	L	L	V L	L	M	L
	Inhalation of asbestos fibres by C. workers	NR	H	NR	NR	NR	NR	NR	NR	NR	NR	NR
	Ingestion / dermal contact / inhalation of contaminated dusts and soils by off site public/users	V L	H	V L	V L (M to L) *	V L	V L	L	V L	V L	L	L
	Inhalation of ground gas / vapours by off site public/users from MG material	V L	L	NR	V L (H) *	M	V L	L	V L	V L	L	L
	Inhalation of ground gas / explosion for C. workers from PEAT	M	M to L	M	M *	M	M	M	NR	NR	NR	NR
Inhalation of ground gas / explosion for off site public from PEAT	M to L	M to L	NR	M to L *	M to L	M to L	M to L	NR	NR	NR	NR	
CONTROLLED WATERS	Contaminated surface runoff to surface water	L	M	NR	M (M) *	H	H	M	NR	NR	NR	NR
	Contaminants leaching from MG into surface water	VL	L	VL	M (M) *	H	L	L	NR	NR	NR	NR
	Perched water or aquifer groundwater entering surface water	V L	L	V L	M (M) *	H	L	L	NR	NR	NR	NR
	Contaminants leaching from MG into deep aquifer	L	L (M)	L	M (M to L) *	L	L	L	V L	L	M	M to L
	Contaminant migration from MG via band drains or piling	L	L (M)	L	M (M to L) *	L	L	L	NR	NR	NR	NR
	Mobilisation of sediments	NR	NR	L	NR	NR	NR	NR	NR	NR	NR	NR
	Dewatering pathway causing GW to contaminate surface water	NR	NR	M	NR	NR	NR	NR	NR	NR	NR	NR
	Risk during operation											
HUMAN HEALTH	Ingestion / dermal contact / inhalation of contaminated dusts and soils by MW	V L	M	NR	V L *	V L	V L	V L	NR	V L	V L	V L
	Inhalation of ground gas / vapours by MW by MG material	V L	L (M to L)	NR	V L *	V L	V L	V L	NR	V L	V L	L
	Inhalation of asbestos fibres by maintenance workers	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	Ingestion / dermal contact / inhalation of contaminated dusts and soils by motorway users	V L	L	NR	V L *	V L	V L	V L	NR	V L	NR	V L
	Ingestion / dermal contact / inhalation of contaminated dusts and soils by off site general public/users	V L	L	NR	V L *	V L	V L	V L	NR	V L	NR	V L
	Inhalation of ground gas / vapours by off site workers / public / motorway users by MG material	V L	V L	NR	V L *	V L	M to L (M^)	V L	NR	V L	V L	L
	Inhalation of ground gas / explosion for M. workers from PEAT	M to L	V L	NR	M to L *	M to L	M to L (M)	M to L	NR	NR	NR	NR
	Inhalation of ground gas / explosion for motorway users from PEAT	M to L	V L	NR	M to L *	M to L	M to L	M to L	NR	NR	NR	NR
	Inhalation of ground gas / explosion for off site public from PEAT	M to L	V L	NR	M to L *	M to L	M to L	M to L	NR	NR	NR	NR
CONTROLLED WATERS	Contaminated run-off to surface water	NR	NR	NR	L *	NR	NR	NR	NR	NR	NR	NR
	Contaminants leaching from MG into surface water	V L	L	VL	M to L *	L	L	L	NR	NR	NR	NR
	Perched water or aquifer groundwater entering surface water	VL	L	VL	M to L *	L	L	L	NR	NR	NR	NR
	Contaminants leaching from MG into deep aquifer	L	L (M to L)	L	M to L *	L	L	L	V L	L	M	M to L
	Contaminant migration from MG via band drains or piling	L	L (M to L)	L	M to L *	L	L	L	NR	NR	NR	NR

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^ refers to depot workers

Risk in **bold** indicates potential mitigation required.

Bracketed risks relate to a specific part of the CL site/feature as identified within the potential contamination source area heading.

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Summary of Risks for Each Potential Area of Contamination

	Potential contamination source area	CL35	CL38	CL39	CL41
	Risk during construction				
HUMAN HEALTH	Ingestion / dermal contact / inhalation of contaminated dusts and soils by C.workers	M to L *	V L	M *	L *
	Inhalation of ground gas / vapours by C. workers from MG material	M to L *	V L	M *	NR
	Inhalation of asbestos fibres by C. workers	NR	NR	NR	NR
	Ingestion / dermal contact / inhalation of contaminated dusts and soils by off site public/users	M to L *	V L	L *	L *
	Inhalation of ground gas / vapours by off site public/users from MG material	M to L *	V L	L *	NR
	Inhalation of ground gas / explosion for C. workers from PEAT	NR	NR	NR	NR
	Inhalation of ground gas / explosion for off site public from PEAT	NR	NR	NR	NR
CONTROLLED WATERS	Contaminated surface runoff to surface water	M to L *	NR	NR	V L *
	Contaminants leaching from MG into surface water	M to L *	NR	NR	M to L *
	Perched water or aquifer groundwater entering surface water	M to L *	NR	NR	M to L *
	Contaminants leaching from MG into deep aquifer	M to L *	V L	M *	L *
	Contaminant migration from MG via band drains or piling	NR	NR	NR	NR
	Mobilisation of sediments	NR	NR	NR	NR
	Dewatering pathway causing GW to contaminate surface water	NR	NR	NR	NR
	Risk during operation				
HUMAN HEALTH	Ingestion / dermal contact / inhalation of contaminated dusts and soils by MW	L *	V L	NR	V L *
	Inhalation of ground gas / vapours by MW by MG material	L *	V L	L *	NR
	Inhalation of asbestos fibres by maintenance workers	NR	NR	NR	NR
	Ingestion / dermal contact / inhalation of contaminated dusts and soils by motorway users	L *	V L	NR	V L *
	Ingestion / dermal contact / inhalation of contaminated dusts and soils by off site general public/users	L *	V L	NR	V L *
	Inhalation of ground gas / vapours by off site workers / public / motorway users by MG material	NR	V L	L *	NR
	Inhalation of ground gas / explosion for M. workers from PEAT	NR	NR	NR	NR
	Inhalation of ground gas / explosion for motorway users from PEAT	NR	NR	NR	NR
	Inhalation of ground gas / explosion for off site public from PEAT	NR	NR	NR	NR
CONTROLLED WATERS	Contaminated run-off to surface water	NR	NR	NR	NR
	Contaminants leaching from MG into surface water	M to L *	NR	NR	L *
	Perched water or aquifer groundwater entering surface water	M to L *	NR	NR	L *
	Contaminants leaching from MG into deep aquifer	M to L *	V L	M *	M to L *
	Contaminant migration from MG via band drains or piling	NR	NR	NR	NR

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