

Annex 14A - Implementation Schedule of Recommended Mitigation Measures

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
Air Quality							
S4.8.1	Impervious dust screen or sheeting will be provided to enclose scaffolding from the ground floor level of building for construction of superstructure of the new buildings.	Land site/ During Construction	Contractor(s)		✓		Air Pollution Control (Construction Dust)
S4.8.1	Impervious sheet will be provided for skip hoist for material transport.	Land site/ During Construction, particularly dry season	Contractor(s)		✓		-
S4.8.1	The area where dusty work takes place should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after dusty activities as far as practicable.	Land site/ During Construction	Contractor(s)		✓		-
S4.8.1	All dusty materials should be sprayed with water or a dust suppression chemical immediately prior to any loading, unloading or transfer operation.	Land site/ During Construction	Contractor(s)		✓		-
S4.8.1	Dropping heights for excavated materials should be controlled to a practical height to minimise the fugitive dust arising from unloading.	Land site/ During Construction	Contractor(s)		✓		-
S4.8.1	During transportation by truck, materials should not be loaded to a level higher than the side and tail boards, and should be dampened or covered before transport.	Land site/ During Construction	Contractor(s)		✓		-
S4.8.1	Wheel washing device should be provided at the exits of the work sites. Immediately before leaving a construction site, every vehicle shall be washed to remove any dusty material from its body and wheels as far as practicable.	Land site/ During Construction	Contractor(s)		✓		-

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S4.8.1	Road sections between vehicle-wash areas and vehicular entrance will be paved.	Land site/ During Construction	Contractor(s)		✓		-
S4.8.1	Hoarding of not less than 2.4m high from ground level will be provided along the length of the Project Site boundary.	Land site/ During construction	Contractor(s)	✓	✓		-
S4.8.1	Haul roads will be kept clear of dusty materials and will be sprayed with water so as to maintain the entire road surface wet at all times.	Land site/ During construction	Contractor(s)		✓		
S4.8.1	Temporary stockpiles of dusty materials will be either covered entirely by impervious sheets or sprayed with water to maintain the entire surface wet all the time.	Land site/ During construction	Contractor(s)		✓		
S4.8.1	Stockpiles of more than 20 bags of cement, dry pulverised fuel ash and dusty construction materials will be covered entirely by impervious sheeting sheltered on top and 3-sides.	Land site/ During construction	Contractor(s)		✓		
S4.8.1	All exposed areas will be kept wet always to minimise dust emission.	Land site/ During construction	Contractor(s)		✓		
S4.8.1	Ultra-low-sulphur diesel (ULSD) will be used for all construction plant on-site, as defined as diesel fuel containing not more than 0.005% sulphur by weight) as stipulated in Environment, Transport and Works Bureau Technical Circular (ETWB-TC(W)) No 19/2005 on Environmental Management on Construction Sites.	Land site/ During construction/ During Operation	Contractor(s)		✓	✓	Environment, Transport and Works Bureau Technical Circular (ETWB-TC(W)) No 19/2005 on Environmental Management on Construction Sites
S4.8.1	The engine of the construction equipment during idling will be switched off.	Land site/ During construction	Contractor(s)		✓		
S4.8.1	Concrete batching plant will be required on site. The	Land site/ During construction	Contractor(s)		✓		Guidance Note on a Best

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	control measures recommended in the Guidance Note on a Best Practicable Means for Cement Works (Concrete Batching Plant) (BPM 3/2 (93)) will be implemented.						Practicable Means for Cement Works (Concrete Batching Plant) (BPM 3/2 (93))
S4.8.1	Regular maintenance of construction equipment deployed on-site will be conducted to prevent black smoke emission.	Land site/ During construction	Contractor(s)		✓		
S4.8.2	Odour mitigation measures may be implemented during the operation of the desalination plant. The treatment and storage of the chemical sludge should be enclosed inside building structure. Forced ventilation system with sufficient air change rate would be equipped at the sludge treatment and storage building and the exhaust discharge should be directed away from ASRs as far as practicable.	During operation	WSD			✓	
S4.10	To ensure proper implementation of the recommended dust mitigation measures and good construction site practices during the construction phase, environmental site audits on weekly basis is recommended throughout the construction period.	Land site/ During construction	Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC)		✓		
Noise							
S5.7	Only well-maintained plant will be operated on-site and plant will be serviced regularly during the construction phase.	All area/ During construction	Contractor(s)		✓		A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	Silencers or mufflers on construction equipment will be utilised and will be properly maintained during the construction phase.	Noise control/ During construction	Contractor(s)		✓		A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	Mobile plant, if any, will be sited as far away from NSRs as possible.	Noise control/ During construction	Contractor(s)		✓		A Practical Guide for the Reduction of Noise from

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							Construction Works,
S5.7	Machines and plant (such as trucks) that may be in intermittent use will be shut down between work periods or will be throttled down to a minimum.	Noise control/ During construction	Contractor(s)		✓		A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	Plants known to emit noise strongly in one direction will, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.	Noise control/ During construction	Contractor(s)		✓		A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	Material stockpiles and other structures will be effectively utilised, wherever practicable, in screening noise from on-site construction activities.	Noise control/ During construction	Contractor(s)		✓		A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	Use of Quiet Powered Mechanical Equipment (QPME).	Noise control/ During construction	Contractor(s)		✓		A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	Movable noise barriers of 3m in height with skid footing should be used and located within a few metres of stationary plant and mobile plant such that the line of sight to the NSR is blocked by the barriers. The length of the barrier should be at least five times greater than its height. The noise barrier material should have a superficial surface density of at least 7 kg m ⁻² and have no openings or gaps.	Noise control/ During construction	Contractor(s)		✓		A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	The noise insulating sheet should be deployed such that there would be no opening or gaps on the joints.	Noise control/ During construction	Contractor(s)		✓		A Practical Guide for the Reduction of Noise from Construction Works,
S5.7	Construction activities (e.g. excavation/shoring, reinstatement (asphalt), and pipe jacking) will be planned and carried out in sequence, such that items of PME proposed for these activities will not be operated simultaneously.	Noise control/ During construction	Contractor(s)		✓		A Practical Guide for the Reduction of Noise from Construction Works
S5.7	PMEs will not be used at the works areas near educational institutions with residual impact (ie the	Noise control / During construction	Contractor(s)		✓		A Practical Guide for the Reduction of Noise from

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	"influence area" within a radius of 40m) during school hours in order to reduce impact to the educational institutions.						Construction Works
S5.7	Noise enclosures or acoustic sheds would be used to cover stationary PME such as generators. Portable/Movable noise enclosure made of material with superficial surface density of at least 7 kg m ⁻² may be used for screening the noise from operation of the saw/groover, concrete.	Noise control/ Pre-construction/ During construction	Contractor(s)	✓	✓		
S5.9	Sawcutting pavement, breaking up of pavement, excavation /shoring, pipe laying, backfilling, reinstatement (concrete) and pipe jacking shall be scheduled outside the examination period.	Noise control/ Pre-construction/ During construction	Contractor(s)	✓	✓		
S5.9	In view the duration of noise exceedance at Creative Secondary School, PLK Laws Foundation College, TKO Kei Tak Primary School and School of Continuing and Professional Studies-CUHK is limited to 8 weeks, the construction work in the influence areas near the four schools shall be scheduled during long school holidays (eg summer holiday, Easter holiday or Christmas holiday, etc) as far as practicable. Scheduling the construction work for the four schools and	Noise control/ Pre-construction/ During construction	Contractor(s)	✓	✓		
S5.10	A noise monitoring programme shall be implemented for the construction phase.	Designated monitoring stations as defined in EM&A Manual/ During construction phase	Environmental Team (ET)		✓		
S5.10	The effectiveness of on-site control measures could also be evaluated through the regular site audits.	All facilities/ During construction	Contractor(s)/ Environmental Team (ET) & Independent Environmental		✓		-

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			Checker (IEC)				
Water Quality							
S 6.9	Silt curtains shall be deployed during dredging to reduce the elevation of suspended solids to nearby sensitive receivers. Single layer of floating type silt curtain around grab dredger shall be used for dredging at submarine outfall and combined used of floating type silt curtain and cage type silt curtain should be adopted for dredging at seawater intake.	Marine Dredging/ During construction	Contractor(s)		✓		-
S6.9	Closed grab dredger should be used to reduce the potential for leakage of sediments.	Marine Dredging/ During construction	Contractor(s)		✓		-
S6.9	Closed grab of 3 to 6 m ³ will be used for dredging at seawater intake.	Marine Dredging at intake/ During construction	Contractor(s)		✓		-
S6.9	Specific work staff will be assigned the responsibility for monitoring the number of grab dredged per hour. Number of cycle shall be limited to 20 - 21 grab per hour for 3m ³ closed grab; 10 - 11 grab per hour for 6 m ³ closed grab.	Marine Dredging / During construction	Contractor(s)		✓		-
S6.9	The grab shall be operated in slow and controlled manner such that the impact to seabed by the grab when being lowered could be minimized. Also, the operator should ensure the grab be properly closed before lifting the grab.	Marine Dredging / During construction	Contractor(s)		✓		-
S6.9	The maximum allowed dredging rate at the seawater intake should be limited to 750 m ³ /day while the maximum allowed dredging rate at the submarine outfall is 3,500 m ³ /day.	Marine Dredging/ During construction	Contractor(s)		✓		-
S6.9	Dredged marine sediment will be disposed of in a gazetted marine disposal area in accordance with	Marine Dredging/ During construction	Contractor(s)		✓		Dumping at Sea Ordinance (DASO)

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	marine dumping permit conditions of the Dumping at Sea Ordinance (DASO).						
S6.9	Disposal vessels will be fitted with tight bottom seals in order to prevent leakage of material during transport.	Marine Dredging/ During construction	Contractor(s)		✓		-
S6.9	Barges will be filled to a level, which ensures that material does not spill over during transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action.	Marine Dredging/ During construction	Contractor(s)		✓		-
S6.9	After dredging, any excess materials will be cleaned from decks and exposed fittings before the vessel is moved from the dredging area.	Marine Dredging/ During construction	Contractor(s)		✓		-
S6.9	The contractor(s) will confirm that the works cause no visible foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the dredging site.	Marine Dredging/ During construction	Contractor(s)		✓		-
S6.9	When the dredged material has been unloaded at the disposal areas, any material that has accumulated on the deck or other exposed parts of the vessel will be removed and placed in the hold or a hopper. Under no circumstances will decks be washed clean in a way that permits material to be released overboard.	Marine Dredging/ During construction	Contractor(s)		✓		-
S6.9	Dredger will maintain adequate clearance between vessels and the seabed at all states of the tide and reduce operations speed to ensure that excessive turbidity is not generated by turbulence from vessel movement or propeller wash.	Marine Dredging/ During construction	Contractor(s)		✓		-

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S6.9	The contractor shall regularly inspect the silt curtains and check that they are moored and marked to avoid danger to marine traffic. Regular inspection on the integrity of the silt curtain should be carried out by the contractor and any damage to the silt curtain shall be repaired by the contractor promptly. Relevant marine works shall be stopped until the repair is fixed to the satisfaction of the engineer.	Marine Dredging/ During construction	Contractor(s)		✓		-
S6.9	All vessels should be well maintained and inspected before use to limit any potential discharges to the marine environment.	Marine Dredging/ During construction	Contractor(s)		✓		-
S6.9	All vessels must have a clean ballast system.	Marine Dredging/ During construction	Contractor(s)		✓		-
S6.9	No discharge of sewage/grey wastewater should be allowed. Wastewater from potentially contaminated area on working vessels should be minimized and collected. These kinds of wastewater should be brought back to port and discharged at appropriate collection and treatment system.	Marine Dredging/ During construction	Contractor(s)		✓		-
S6.9	No soil waste is allowed to be disposed overboard.	Marine Dredging/ During construction	Contractor(s)		✓		-
S6.9	Silt removal facilities such as silt traps or sedimentation facilities will be provided to remove silt particles from runoff to meet the requirements of the TM standard under the WPCO. The design of silt removal facilities will be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures will be inspected on a regular basis and maintained to confirm proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit will be removed regularly.	Land site & drainage/ During construction	Contractor(s)		✓		ProPECC PN 1/94 TM Standard under the WPCO

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S6.9	Earthworks to form the final surfaces will be followed up with surface protection and drainage works to prevent erosion caused by rainstorms.	Land site & drainage/ During construction	Contractor(s)		✓		-
S6.9	Appropriate surface drainage will be designed and provided where necessary.	Land site & drainage/ During construction	Contractor(s)		✓		-
S6.9	The precautions to be taken at any time of year when rainstorms are likely together with the actions to be taken when a rainstorm is imminent or forecasted and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94.	Land site & drainage/ During construction	Contractor(s)		✓		ProPECC PN 1/94
S6.9	Oil interceptors will be provided in the drainage system where necessary and regularly emptied to prevent the release of oil and grease into the storm water drainage system after accidental spillages.	Land site & drainage/ During construction	Contractor(s)		✓		-
S6.9	Temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge, if any, will be adequately designed for the controlled release of storm flows.	Land site & drainage/ During construction	Contractor(s)		✓		-
S6.9	The temporary diverted drainage, if any, will be reinstated to the original condition when the construction work has finished or when the temporary diversion is no longer required.	Land site & drainage/ During construction	Contractor(s)		✓		-
S6.9	Appropriate infiltration control, such as cofferdam wall, should be adopted to limit groundwater inflow to the excavation works areas in the Project site. Groundwater pumped out from excavation area should be discharged into the storm system via silt removal facilities.	Land site & drainage/ During construction	Contractor(s)		✓		-

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S6.9	Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers over the construction site to prevent direct disposal of sewage into the water environment.	Land site & drainage/ During construction	Contractor(s)		✓		-
S6.9 and S6.12	The sterilization water should be dechlorinated with total residual chlorine (TRC) level below 1 mg/L before discharge to public sewer. In situ testing of TRC should also be conducted for the discharge of chlorinated water for pipeline disinfection to ensure sufficient dechlorination before discharge to public sewer.	Sterilization of water mains prior to commissioning	Contractor(s)		✓	✓	Technical Memorandum for Effluents Discharged into Drainage and Sewerage Systems Inland and Coastal Waters
S6.9	The cleaning and flushing water should also be treated and desilted to the relevant discharge requirement stipulated in TM-DSS before discharging.	Sterilization of water mains prior to commissioning	Contractor(s)		✓	✓	Technical Memorandum for Effluents Discharged into Drainage and Sewerage Systems Inland and Coastal Waters
S6.8.2	The dosing of polymer will be controlled to avoid any concurrent dosing during chlorination for bio-growth control. Such precautionary measure will be incorporated in the operation manual of the plant.	During operation	WSD			✓	-
S6.9	Site drainage should be well maintained and good construction practices should be observed to ensure that oil, fuels, solvents and other chemicals are managed, stored and handled properly and do not enter the nearby water streams.	Land site & drainage/ During construction/ During operation	Contractor(s)		✓	✓	-
S6.12	Regular site inspections will be carried out in order to confirm that regulatory requirements are being met and that contractors are implementing the standard site practice and mitigation measures as proposed to reduce potential impacts to water quality.	During construction	Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC)		✓		-

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S6.12	A silt curtain efficiency test for the combined use of floating silt curtain type and cage type silt curtain for dredging at seawater intake to confirm the silt curtain reduction efficiency assumptions of the assessment will be completed prior to intake dredging works commencement.	Marine Dredging/ During construction	Contractor(s)/ Environmental Team (ET)		✓		-
S6.9 and S6.12	A water quality monitoring programme shall be implemented for the construction phase.	Designated monitoring stations as defined in EM&A Manual/ During marine construction period	Environmental Team (ET)		✓		-
S6.9 and S6.12	To ensure compliance to the effluent standard, regular monitoring of effluent quality is recommended during normal operation. Furthermore, marine water monitoring at selected nearby WSRs during the first year of project commission are recommended to ensure compliance to WQO or other water quality criteria.	During operation	Environmental Team (ET)/ WSD		✓	✓	-
S6.8.2	As a precautionary measure, the dosing of polymer will be controlled to avoid any concurrent dosing during chlorination for bio-growth control. This precautionary measure will be incorporated in the operation manual of the plant.	During operation	Environmental Team (ET)/ WSD	✓		✓	
Sewerage and Sewage Treatment Implications							
S7.6	The proposed sewerage system will be constructed by WSD during the construction period and the system will handover to DSD for further maintenance. The detailed design of the proposed sewerage system should be circulated to DSD, EPD and other relevant parties for comment during planning and detailed design stage to ensure acceptance by relevant parties. Access for sewers, equipment and personnel for maintenance of the works should be adequately provided. The maintenance responsibility of those proposed sewerage facilities will be confirmed with	During design, construction and operation	WSD/ Contractor(s)/ DSD	✓	✓	✓	Stormwater Drainage Manual; DSD Sewerage Manual Part 1 & Part 2; Drainage Services Department Standard Drawings

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				D	C	O	
	relevant authorities in the detailed design stage of this project.						
S7.5	Gravity sewer will be constructed to connect the plant to the existing sewer for sewage treatment.	During design, construction	WSD/ Contractor(s)/ DSD	✓	✓		-
S7.6	The gravity sewer should be designed to avoid under surcharge condition. 1m freeboard should be provided if surcharge condition cannot be avoided. The flow velocity of the sewer should be not less than 1m/s under full bore flow for self-cleansing purpose. The maximum velocity should be limited to 3m/s. The structural and bedding design of the sewer should in accordance with <i>Section 6 of the Sewerage Manual Part 1</i> .	During design, construction and operation	WSD/ Contractor(s)/ DSD	✓	✓	✓	Section 6 of the Sewerage Manual Part 1
S7.6	The design of manhole should be in accordance with <i>Section 7 of Sewerage Manual Part 1</i> and manhole should be provided at intersection of sewers, location where sewer changes location and junction between different size/ gradient of sewers.	During design, construction and operation	WSD/ Contractor(s)/ DSD	✓	✓	✓	Section 7 of Sewerage Manual Part 1
Waste Management							
S8.5	Nomination of approved personnel to be responsible for standard site practices, arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site.	Contract mobilisation/ During construction	Contractor(s)		✓		-
S8.5	Training of site personnel in proper waste management and chemical handling procedures. Training will be provided to workers on the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling at the beginning of the construction works.	Contract mobilisation/ During construction	Contractor(s)		✓		-
S8.5	Provision of sufficient waste disposal points and	All area/ During construction/	Contractor(s)		✓	✓	DEVB TC(W) No. 8/2010,

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	regular collection for disposal.	During operation					Enhanced Specification for Site Cleanliness and Tidiness.
S8.5	Appropriate measures to reduce windblown litter and dust transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	All area/ During construction	Contractor(s)		✓		DEVB TC(W) No. 8/2010, Enhanced Specification for Site Cleanliness and Tidiness.
S8.5	A waste management plan (WMP) as stated in the "ETWB TC(W) No. 19/2005, Environmental Management on Construction Sites" for the amount of waste generated, recycled and disposed of (including the disposal sites) will be established and implemented during the construction phase as part of the Environmental Management Plan (EMP). The Contractor will be required to prepare the EMP and submits it to the Architect/ Engineer under the Contract for approval prior to implementation.	All area/ During construction	Contractor(s)		✓		ETWB TC(W) No. 19/2005, Environmental Management on Construction Sites
S8.5	Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre at Tsing Yi.	All area/ During construction	Contractor(s)		✓		Chapters 2 & 3 Code of Practice on the Packaging, Labelling & Storage of Chemical Wastes published under the Waste Disposal Ordinance (Cap 354), Section 35
S8.5	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.	Land site/ During construction	Contractor(s)		✓		Waste Disposal Ordinance (Cap 354)
S8.5	A recording system for the amount of wastes generated/ recycled and disposal sites. The trip-ticket system will be included as one of the contractual requirements and implemented by the contractor(s).	Land site/ During construction	Contractor(s)		✓		DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
S8.5	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance	Land site/ During construction/ During operation	Contractor(s)		✓		WBTC 32/92, The Use of Tropical Hard Wood on

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	reuse or recycling of material and their proper disposal.						Construction Site
S8.5	Encourage collection of aluminium cans and waste paper by individual collectors during construction with separate labelled bins provided to segregate these wastes from other general refuse by the workforce.	Land site/ During construction	Contractor(s)		✓		ETWB TCW No. 33/2002, Management of Construction and Demolition Material Including Rock
S8.5	Any unused chemicals and those with remaining functional capacity will be recycled as far as possible.	Land site/ During construction	Contractor(s)		✓		-
S8.5	Use of reusable non-timber formwork to reduce the amount of C&D materials.	All areas/ During construction	Contractor(s)		✓		WBTC 32/92, The Use of Tropical Hard Wood on Construction Site
S8.5	Prior to disposal of construction waste, wood, steel and other metals will be separated to the extent practical, for re-use and/or recycling to reduce the quantity of waste to be disposed of to landfill.	All areas/ During construction	Contractor(s)		✓		DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
S8.5	Proper storage and site practices to reduce the potential for damage or contamination of construction materials.	All areas/ During construction	Contractor(s)		✓		-
S8.5	Plan and stock construction materials carefully to reduce amount of waste generated and avoid unnecessary generation of waste.	All areas/ During construction	Contractor(s)		✓		-
S8.5	A Sediment Quality Report (SQR) for sampling and chemical testing of the sediment will be prepared and submitted to the EPD for approval. The approved detailed sampling and chemical testing will be carried out prior to the commencement of the dredging activities to confirm the sediment disposal method.	Marine works/ During construction	Contractor(s)		✓		ETWB TC(W) No. 34/2002 and Dumping at Sea Ordinance (DASO)
S8.5	The management of dredged/ excavated sediment	Marine works/ During	WSD/ Contractor(s)		✓		ETWB TC(W) No. 34/2002

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	management requirement from <i>ETWB TC(W) No. 34/2002</i> will be incorporated in the Specification of the Contract Documents.	construction					and Dumping at Sea Ordinance (DASO)
S8.5	The contractor will open a billing account with EPD in accordance with the Waste Disposal (Charges for Disposal of Construction Waste) Regulation for the payment of disposal charges.	Contract mobilisation/ During construction	Contractor(s)		✓		Cap 354N Waste Disposal (Charges for Disposal of Construction Waste) Regulation
S8.5	A trip-ticket system will be established in accordance with DEVB TC(W) No. 6/2010 to monitor the reuse of surplus excavated materials off-site and disposal of construction waste and general refuse at transfer facilities/ landfills, and to control fly-tipping.	Contract mobilisation/ During construction	Contractor(s)		✓		DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials
S8.5	The project proponent will also conduct regular inspection of the waste management measures implemented on site as described in the Waste Management Plan.	All area/ During construction	Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC)		✓		ETWB TC(W) No. 19/2005, Environmental Management on Construction Sites
S8.5	A recording system (similar to summary table as shown in Annex 5 and Annex 6 of Appendix G of ETWB TC(W) No. 19/2005) for the amount of waste generated, recycled and disposed of (including the disposal sites) will be established during the construction phase.	All area/ During construction	Contractor(s)		✓		Annex 5 and Annex 6 of Appendix G of ETWB TC(W) No. 19/2005
S8.5	Inert C&D materials (public fill) will be reused within the Project as far as practicable.	All area/ During construction	Contractor(s)		✓		-
S8.5	Public fill and construction waste shall be segregated and stored in different containers or skips to facilitate reuse or recycling of materials and their proper disposal.	All area/ During construction	Contractor(s)		✓		-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
S8.5	Specific areas of the work site will be designated for such segregation and storage if immediate use is not practicable.	All area/ During construction	Contractor(s)		✓		-
S8.5	To reduce the potential dust and water quality impacts of site formation works, C&D materials will be wetted as quickly as possible to the extent practice after filling.	All area/ During construction	Contractor(s)		✓		Air Pollution Control (Construction Dust) Regulation (Cap 311R); WPCO (Cap 358)
S8.5	Open stockpiles of excavated/ fill materials or construction wastes on-site should be covered with tarpaulin or similar fabric.	Land site/ During Construction, particularly dry season	Contractor(s)		✓		Air Pollution Control (Construction Dust) Regulation (Cap 311R)
S8.5	Chemical waste container shall be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Chemical waste container shall have a capacity of less than 450 L unless the specifications have been approved by the EPD.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	A label in English and Chinese shall be displayed on the chemical container in accordance with instructions prescribed in Schedule 2 of the Regulations.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Storage areas for chemical waste shall be clearly labelled and used solely for the storage of chemical waste.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
S8.5	Storage areas for chemical waste shall be enclosed on at least 3 sides.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Storage areas for chemical waste shall have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Storage areas for chemical waste shall have adequate ventilation.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Storage areas for chemical waste shall be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary).	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Storage areas for chemical waste shall be arranged so that incompatible materials are appropriately separated.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Chemical waste will be disposed of via a licensed waste collector; and to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Facility which also offers a chemical waste collection service and can supply the necessary storage containers.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
S8.5	General refuse will be stored in enclosed bins or compaction units separately from construction and chemical wastes.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Handling and Storage of Chemical Wastes
S8.5	Adequate number of waste containers will be provided to avoid over-spillage of waste.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	DEVB TC(W) No. 8/2010 Enhanced Specification for Site Cleanliness and Tidiness.
S8.5	A reputable waste collector will be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimise odour, pest and litter impacts.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	-
S8.5	Recycling bins will be provided at strategic locations within the Site to facilitate recovery of recyclable materials (including aluminium can, waste paper, glass bottles and plastic bottles) from the Site. Materials recovered will be sold for recycling.	All area/ During construction/ During operation	Contractor(s)/ WSD		✓	✓	-
S8.5	To avoid any odour and litter impact, accurate number of portable toilets will be provided for workers on-site.	All area/ During construction	Contractor(s)		✓		-
S8.5	The burning of refuse on construction sites is prohibited by law.	All area/ During construction	Contractor(s)		✓		Air Pollution Control Ordinance (Cap 311)
S8.5	Thickened and dewatered sludge from the plant will be transported to the landfill by trucks. The requirement on the minimum dry solid content (30%) in the dewatered sludge to be disposed of at landfills as stipulated in the WDO will be incorporated in the Specification of the Contract Documents.	During operation	WSD			✓	Waste Disposal Ordinance (WDO) (CAP 354)

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
S8.5	Sludge containers should be flushed with water regularly.	During operation	WSD			✓	Waste Disposal Ordinance (WDO) (CAP 354)
S8.5	Frequent sludge removal from storage containers is necessary to prevent the production of gases.	During operation	WSD			✓	Air Pollution Control Ordinance (Cap 311)
S8.7	To facilitate monitoring and control over the contractors' performance on waste management, a waste inspection and audit programme will be implemented throughout the construction phase.	All facilities/ During construction	ET/ IEC		✓		-
Land Contamination							
S8A.6	Before the hand-over of the temporary magazine storage (TMS) Site to WSD for further development, the owner of TMS Site and its contractor shall ensure the TMS site is properly cleaned up before handover to WSD. After the TMS Site is handed over to WSD and before the commencement of any construction work, the contractor of WSD shall prepare a Contamination Assessment Plan (CAP) for EPD endorsement prior to the commencement of site investigation.	All area/ Pre-construction / During construction	Contractors/ WSD	✓	✓		-
S8A.6	A Contamination Assessment Report (CAR) shall be prepared to summarise the results of the site investigation. If land contamination is identified, a Remediation Action Plan (RAP) shall be prepared to identify feasible remediation methods and a Remediation Report (RR) shall be prepared to demonstrate completion of remedial actions for EPD endorsement.	All area/ During construction	Contractors		✓		-
S8A.6	Excavation profiles shall be properly designed and executed	All area/ During construction	Contractors		✓		-
S8A.6	An impermeable surfacing shall be placed under the stockpile and a cover should be employed to prevent dust emission and possible cross contamination. If not applicable, regular watering shall be applied.	All area/ During construction	Contractors		✓		-
S8A.6	Trucks carrying contaminated materials shall be	All area/ During construction	Contractors		✓		-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	enforced with speed control.						
S8A.6	In order to confirm that the construction Contractor(s) has(have) implemented the recommendations of the EIA Report, regular site inspections and audits during construction phase will be conducted in accordance with the approved procedures in CAP. The visual inspections/audits will look at all aspects of construction activities that disturb soil. The first inspection/audit will be conducted at the commencement of the construction works.	All facilities/ During construction	Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC)		✓		-
Ecology							
S9.7	For slope mitigation works within the Clear Water Bay Country Park, to avoid tree felling and damages to trees, the exact locations of the flexible barrier foundation plates, soil nails and rock dowels can be adjusted during detailed design, and a setback distance from existing trees is recommended to be maintained as far as practical. A detailed specification describing the exact locations of the flexible barrier foundation plates, soil nails and rock dowels will be prepared to illustrate how the setback distance from existing trees would be implemented for tree avoidance.	Slope mitigation works area/ During detailed design/ During construction	Contractor(s)	✓	✓		-
S9.7	Pruning of tree canopies along the alignment of the flexible barriers shall be limited to a minimum.	Slope mitigation works area/ During construction	Contractor(s)		✓		
S9.7	The alignment of flexible barriers shall be optimized to preserve all species of conservation interest and minimize the impact to the existing vegetation as far as practicable. All individuals of <i>Marsdenia lachnostoma</i> within the slope mitigation areas shall be retained <i>in-situ</i> , by positioning the alignment of flexible barrier at a minimum 1.5m in a radius away from these individuals.	Slope mitigation works area/ During detailed design/ During construction	Contractor(s)	✓	✓		-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
S9.7 and 9.10	At the detailed design stage prior to the commencement of the slope mitigation works, a vegetation survey shall be carried out at the slope mitigation areas within the Clear Water Bay Country Park to assess the condition and identify the location of each individual of <i>Marsdenia lachnostoma</i> and other flora species of conservation interest that may be directly affected by the construction works.	Slope mitigation works area/ During detailed design/ During construction	Contractor(s)	✓	✓		-
S9.7	Temporary fencing will be installed to fence off the concerned species either in groups of individually within the works area and in the close proximity to prevent from being damaged and disturbed during construction. A sign identifying the site shall be attached to the fence and flagging tape shall be attached to the individuals to visualize their locations.	Slope mitigation works area/ During construction	Contractor(s)		✓		-
S9.7 and S9.10	A specification for fencing and demarcating individuals of <i>Marsdenia lachnostoma</i> (or other flora species of conservation interest, if found) adjacent to the proposed alignment of the flexible barriers will be prepared to protect the species	Slope mitigation works area/ During construction	Contractor(s)		✓		-
S9.7	Induction training shall also be provided to all site personnel in order to brief them on this flora of conservation interest including the locations and their importance.	Slope mitigation works area/ During construction	Contractor(s)		✓		-
S9.7	The resident site supervisory staff will closely monitor the conditions of concerned individuals during construction of flexible barriers in the close proximity.	Slope mitigation works area/ During construction	Contractor(s)		✓		-
S9.7	Erect fences along the boundary of the works area before the commencement of works to prevent vehicle movements and encroachment of personnel onto adjacent areas.	All area/ During construction	Contractor(s)		✓		-
S9.7	Regularly check the work site boundaries to ensure that they are not breached and that damage does not occur to surrounding areas.	All area/ During construction	Contractor(s)/ Environmental Team (ET)		✓		-
S9.7	Avoid any damage and disturbance, particularly those	All area/ During construction	Contractor(s)		✓		-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	caused by filling and illegal dumping, to the surrounding habitats through proper management of waste disposal.						
S9.7	Reinstate temporarily affected areas, particularly the habitats of plantation and shrubland-grassland immediately after completion of construction works, through on-site tree/shrub planting. The tree/shrub species will be chosen with reference to those in the surrounding area.	All area/ During construction	Contractor(s)		✓		-
S9.7	Affected habitats within the Clear Water Bay Country Bay shall be reinstated by hydro-seeding and planting of climbers and native shrub seedlings where practical upon completion of the slope mitigation works.	All area/ During construction	Contractor(s)		✓		-
S9.7	A closed grab dredger will be used to dredge down about -11mPD which is approximately 6m below the current seabed and there will be no excessive dredging.	Marine works area/ During construction	Contractor(s)		✓		-
Landscape & Visual							
S11.10 & 11.11	The construction area and area allowed for temporary structures, such as the contractor's office, will be minimized to a practical minimum. (MM1)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	-
S11.10 & 11.11	At the detailed design stage, the design team will seek to minimize the landscape footprint of the Project and above ground facilities, while satisfying all other requirements. (MM2)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	-
S11.10 & 11.11	Design principles will be adopted to take into account the surrounding area, particularly Clear Water Bay Country Park behind and the nearby waterfront, with due consideration given to: - green roofs where practical (ie without equipment on the roof); - roadside planting; - aesthetic treatment of all structures; - vertical greening; - screen planting along application site; and	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	- landscape enhancement with amenity planting where practical including planting along the edge (site boundary) fence with native shrubs where feasible, to reduce their visual impact and blend them into the surrounding landscape. (MM3)						
S11.10 & 11.11	All trees within the Project Site or the potential slope mitigation works area will be carefully protected during construction according to DEVB TCW No. 10/2013 - Tree Preservation (MM4)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	ETWB TCW No. 3/2006 - Tree Preservation.
S11.10 & 11.11	No tree within the Country Park will be felled. Trees within the Site unavoidably affected by the works will be transplanted where necessary and practical. For trees that need to be felled, compensatory planting will be provided to the satisfaction of relevant Government departments. A compensatory tree planting proposal including locations of tree compensation will be submitted to seek relevant government department's approval, in accordance with DEVB TC(W) No. 10/2013. (MM5)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	DEVB TC(W) No. 10/2013
S11.10 & 11.11	Any slope mitigation works necessary to address natural terrain hazards, will be minimized to minimize any potential environmental impact to the Country Park e.g. soil nailing and rock stabilization will aim to avoid existing trees e.g. should any restoration of vegetation be necessary, the best planting matrix with native species will be established, with the aim of resembling the existing vegetation. (MM6)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	
S11.10 & 11.11	Dredging works for the installation of intake structures and outfall diffusers should be minimized to avoid or reduce any potential environmental impacts to as low as reasonably practicable (ALARP). The intake and outfall structures (e.g. intake openings and diffuser heads) will be prefabricated and transferred to site for installation. (MM7)	All area/ Detailed design/ During construction/ During operation	WSD/ Contractor(s)	✓	✓	✓	
S11.10 & 11.11	All night-time lighting will be reduced to a practical minimum both in terms of number of units and lux	All area/ Detailed design/ During construction/ During	WSD/ Contractor(s)	✓	✓	✓	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	level and will be hooded and directional. (MM8)	operation					
Landfill Gas Hazard							
S12.7	During all works, safety procedures should be implemented to minimise the risks of fires and explosions, asphyxiation of workers and toxicity effects resulting from contact with contaminated soil and groundwater.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	-
S12.7	During trenching and excavation as well as creation of confined spaces at near to or below ground level, precautions should be clearly laid down and rigidly Gas detection equipment and appropriate breathing apparatus should be available and used when entering confined spaces or trenches deeper than 1 metre.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	
S12.7	The Contractor should make the workers are aware of potential hazards of working in confined spaces (any chamber, manhole or culvert which is large enough to permit access to personnel). Such work in confined spaces is controlled by the Factories and Industrial Undertakings (Confined Spaces) Regulations of the Factories and Industrial Undertakings Ordinance. Following the Safety Guide to Working in Confined Spaces ensures compliance with the above regulations.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	
S12.7	Safety officers, specifically trained with regard to landfill gas and leachate related hazards and the appropriate actions to take in adverse circumstances, should be present on the site throughout the works, in particular, when works are undertaken below grade.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	
S12.7	All personnel who work on site and all visitors to the site should be made aware of the possibility of ignition of gas in the vicinity of the works, the possible presence of contaminated water and the need to avoid physical contact with it.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	
S12.7	Monitoring for landfill gas should be undertaken in all excavations, manholes, chambers (particularly during pipe jacking) and any confined spaces through the use	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	of an intrinsically safe portable instrument, appropriately calibrated and capable of measuring the concentrations of methane, carbon dioxide and oxygen.						
S12.7	Monitoring frequency and areas to be monitored should be specified prior to commencement of groundwork, either by the Safety Officer, or by an appropriately qualified person. All measurements should be recorded and documented.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	
S12.7	Proceed drilling with adequate care and precautions against the potential hazards which may be encountered.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	
S12.7	Prior to the commencement of the site works, the drilling contractor should devise a 'method-of-working' statement covering all normal and emergency procedures (including but not limited to number of operatives, experience and special skills of operatives, normal method of operations, emergency procedures, supervisors responsibilities, storage and use of safety equipment, safety procedures and signs, barriers and guarding). The site supervisor and all operatives must be familiar with this statement.	All area/ During construction/ During operation	Contractor(s)	✓	✓	✓	
S12.7	Where below ground service entries are necessary to the Incoming Switchgear Room, 132 kV Substation and Chlorine Store (I) and (II), the entry point should be sealed to prevent gas entry. In addition, any below grade cable trenches entering the Incoming Switchgear Room and 132 kV Substation can become the pathway for landfill gas and hence grilled metal covers should be used.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	
S12.7	It is recommended regular landfill gas monitoring should be carried out at the Incoming Switchgear Room, 132 kV Substation and Chlorine Store (I) and (II). The monitoring frequency will be monthly for the first year of operation. If the monitoring results show no sign of landfill gas migration, reduce the	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	monitoring frequency to once every six months.						
S12.7	The manholes and utility pits within the Project Site and along the fresh water mains. Each manhole/ utility pit should be monitored with two measurements (at mid depth and base). Each measurement should be monitored for a minimum of 10 minutes. A steady reading and peak reading should be recorded at each manhole/ utility pit and for each measurement. The need for venting the manhole/ utility pit and further monitoring will be reviewed after the initial monitoring.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	
S12.7	All construction, operation and maintenance personnel working on-site as well as visitors should be made aware of the hazards of landfill gas and its possible presence on-site. This should be achieved through a combination of posting warning signs in prominent places and also by access to detailed information on landfill gas hazards and the designs and procedural means by which these hazards are being minimised on-site.	All area/ Detailed design/ During construction/ During operation	Contractor(s)	✓	✓	✓	
Hazard to Life							
Annex L of S13	Maximum 37 tonnes chlorine storage quantity (in 1 tonne drum) in the chlorine store	Ensure the risk as assessed; To be implemented in operation stage	WSD / Contractors(s)			✓	-
Annex L of S13	Annual consumption of chlorine 148 tonnes per year	Ensure the risk as assessed; To be implemented in operation stage	WSD / Contractors(s)			✓	-
Annex L of S13	Number of 25 chlorine truck deliveries per year	Ensure the risk as assessed; To be implemented in operation stage	WSD / Contractors(s)			✓	-
Annex L of S13	Onsite chlorine transport route - from TKO Area 137 Pier to chlorine store by truck	Ensure the risk as assessed; To be implemented in operation stage	WSD / Contractors(s)			✓	-
Annex L of S13	Offsite chlorine transport by barge; unloading at TKO Area 137 Pier	Ensure the risk as assessed; To be implemented in operation stage	WSD / Contractors(s)			✓	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
Annex L of S13	12 barge deliveries of chlorine drums per year	Ensure the risk as assessed; To be implemented in operation stage	WSD / Contractors(s)			✓	-
Annex L of S13	Volume of chlorine store should be more than 4200 m ³	Ensure the risk as assessed; To be incorporated into detailed design, built in construction stage	WSD / Contractor(s)	✓	✓		-
Annex L of S13	Length of overhead crane ~10 m	Ensure the impact of earthquake on chlorine storage as assessed; To be incorporated into detailed design, built in construction stage	WSD / Contractor(s)	✓	✓		-
Annex L of S13	Chlorine store should be constructed of reinforced concrete frame structure with unreinforced infill masonry walls	Ensure the impact of earthquake on chlorine storage as assessed; To be incorporated into detailed design, built in construction stage	WSD / Contractor(s)	✓	✓		-
Annex L of S13	Classification of the chlorine store should be Group 1 building with C/D ratio > 1 (= 2.2) in the column shear check and allowable shear stress 0.14 N/mm ² or better performance.	Ensure the impact of earthquake on chlorine storage as assessed; To be incorporated into detailed design, built in construction stage	WSD / Contractor(s)	✓	✓		-
Annex L of S13	Layout of chlorine drum storage area and main beams should be 300 mm in width (by referring to Figure 1 of Annex E of main EIA report)	Ensure the impact of earthquake on chlorine storage as assessed; To be incorporated into detailed design, built in construction stage	WSD / Contractor(s)	✓	✓		-
Annex L of S13	The setback distance between the chlorine building and explosive trucks / TKO Area 137 Pier shall provide sufficient clearance so that the overpressure resulting from explosion of explosive trucks or the explosives offloading operation that reaches the	Ensure negligible impact of an explosive truck explosion or explosion at explosives offloading pier on chlorine storage; To be incorporated	WSD / Contractor(s)	✓	✓		-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	chlorine building is less than 2 psi.	into detailed design, built in construction stage					
Annex L of S13	Separation distance between chlorine store and the site boundary approximately 100m for chlorine gas dispersion.	Ensure the risk as assessed; To be incorporated into detailed design, built in construction stage	WSD / Contractors(s)	✓	✓		-
Annex L of S13	Concentration of NaOCl solution should be 10-12 % (wt) stored in 25m ³ tanks	Ensure the risk as assessed; To be incorporated into detailed design, implemented in operation stage	WSD / Contractors(s)	✓		✓	-
Annex L of S13	The number of NaOCl storage tanks is 6. They are separated tanks and are not connected.	Ensure the risk as assessed; To be incorporated into detailed design, built in the construction stage	WSD / Contractor(s)	✓	✓		-
Annex L of S13	Number of NaOCl deliveries is 24 deliveries per year	Ensure the risk as assessed; To be implemented in operation stage	WSD / Contractors(s)			✓	-
Annex L of S13	Unloading rate of NaOCl/ HCl/ FeCl ₃ / H ₂ SO ₄ / citric acid solution to tank should be 10 L/s or less	Ensure the risk as assessed; To be incorporated into detailed design, implemented in operation stage	WSD / Contractors(s)	✓		✓	-
Annex L of S13	Concentration of HCl solution should be 10 % (wt) stored in 40m ³ tanks	Ensure the risk as assessed; To be incorporated into detailed design, implemented in operation stage	WSD / Contractors(s)	✓		✓	-
Annex L of S13	Number of HCl storage tanks in chemical building should be 2 separate tanks which are not connected to each other	Ensure the risk as assessed; To be incorporated into detailed design, built in the construction stage	WSD / Contractor(s)	✓	✓		-
Annex L of S13	Number of HCl deliveries is 9 tankers per year	Ensure the risk as assessed; To be implemented in operation stage	WSD / Contractors(s)			✓	-
Annex L of S13	Concentration of HCl in FeCl ₃ solution should be approximately 5 % (wt) stored in 190m ³ tanks	Ensure the risk as assessed; To be incorporated into detailed design, implemented in operation stage	WSD / Contractors(s)	✓		✓	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
Annex L of S13	Number of FeCl ₃ storage tanks in chemical building should be 8 separated tanks which are not connected to each other	Ensure the risk as assessed; To be incorporated into detailed design, built in the construction stage	WSD / Contractor(s)	✓	✓		-
Annex L of S13	Number of FeCl ₃ deliveries is 243 tankers per year	Ensure the risk as assessed; To be implemented in operation stage	WSD / Contractors(s)			✓	-
Annex L of S13	Concentration of H ₂ SO ₄ solution should be approximately 98 % (wt) stored in 62m ³ tanks	Ensure the risk as assessed; To be incorporated into detailed design, implemented in operation stage	WSD / Contractors(s)	✓		✓	-
Annex L of S13	Number of H ₂ SO ₄ storage tanks in chemical building should be 4 separated tanks which are not connected to each other	Ensure the risk as assessed; To be incorporated into detailed design, built in the construction stage	WSD / Contractor(s)	✓	✓		-
Annex L of S13	Number of H ₂ SO ₄ deliveries is 42 tankers per year	Ensure the risk as assessed; To be implemented in operation stage	WSD / Contractors(s)			✓	-
Annex L of S13	Concentration of citric acid solution should be approximately 50 % (wt) stored in a 8m ³	Ensure the risk as assessed; To be incorporated into detailed design, implemented in operation stage	WSD / Contractors(s)	✓		✓	-
Annex L of S13	Number of citric acid storage tank in chemical building should be 1	Ensure the risk as assessed; To be incorporated into detailed design, built in the construction stage	WSD / Contractor(s)	✓	✓		-
Annex L of S13	Number of citric acid deliveries is 4 tankers per year	Ensure the risk as assessed; To be implemented in operation stage	WSD / Contractors(s)			✓	-
Annex L of S13	Safety measures in placed to avoid right product delivered into the wrong tank, e.g. - hoses and couplers for transferring of NaOCl, H ₂ SO ₄ , HCl, FeCl ₃ , H ₂ SO ₄ and C ₆ H ₈ O ₇ are different in size to avoid connecting road tankers of incompatible chemicals to corresponding storage tanks	Ensure the risk as assessed; To be incorporated into detailed design, built in construction stage, implemented in operation stage	WSD / Contractors(s)	✓	✓	✓	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	<ul style="list-style-type: none"> - Warning signs will be displayed at the inlet of each storage tank to show chemical name and to warn the potential hazards of mixing incompatible chemicals. - NaOCl will be delivered by barges. Dedicated chemical feedline with connection points will be used for transferring NaOCl from barges to storage bulk tanks. HCl, FeCl3, H2SO4 and C6H8O7 will be delivered by road tankers. No other chemicals will be delivered with NaOCl by the same barge at the same time. - HCl, FeCl3, H2SO4 and C6H8O7 will be stored in double containment tanks. - HCl, FeCl3, H2SO4 and C6H8O7 flowing outside of the chemical building will be collected by road side drains. Moreover, road humps will help to prevent acids moving towards the NaOCl storage area. - Perimeter drain will be installed surrounding the NaOCl bund to collect spill from overtopping. Temporary storage tank will be connected to the drainage system for the NaOCl storage area to prevent from mixing with HCl / FeCl3 / H2SO4 / C6H8O7 or discharging directly to the sea. - NaOCl facilities are located 290 m far away from the chemical building. 						
Annex L of S13	Maximum number of CO2 storage tank should be 16 units	Ensure the risk as assessed; To be incorporated into detailed design, built in construction stage	WSD / Contractors(s)	✓	✓		-
Annex L of S13	Type of storage tank is vacuum insulated type	Ensure the risk as assessed; To be incorporated into detailed design, built in construction stage	WSD / Contractors(s)	✓	✓		-
Annex L of S13	Maximum storage tank capacity should be 100 tonnes	Ensure the risk as assessed; To	WSD / Contractors(s)	✓	✓		-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
	per tank	be incorporated into detailed design, built in construction stage					
Annex L of S13	Ambient type vaporizer should be used	Ensure the risk as assessed; To be incorporated into detailed design, built in construction stage	WSD / Contractors(s)	✓	✓		-
Annex L of S13	CO2 to be delivered by road tankers	Ensure the risk as assessed; To be implemented in operation stage	WSD / Contractors(s)			✓	-
Annex L of S13	Set back the CO2 storage with sufficient clearance so that the overpressure resulting from explosion of explosive vehicle during offsite transport or the explosives offloading operation that reaches the storage is less than 2 psi.	Explosion of an explosive truck or at explosives offloading pier does not cause failure of CO2 storage tanks; To be incorporated into detailed design, built in construction stage	WSD / Contractors(s)	✓	✓		-
Annex L of S13	Minimum separation distance between CO2 storage area and the site boundary should be approximately 100m	Ensure onsite CO2 storage facilities do not cause offsite impacts; To be incorporated into detailed design, built in construction stage	WSD / Contractors(s)	✓	✓		-
Annex L of S13, S13.5.4	Safety measures to be incorporated into the design of CO2 storage tanks <ul style="list-style-type: none"> - Vacuum insulated, double containment - 2 sets of pressure relief valves (PRVs) on inner containment. The 2 sets of PRVs are connected by a switchover valve. Each set consists of 2 PRVs. - Plate pressure relief device on outer containment (considered on storage tanks only) - Trycock for overfilling alarm and warning - High level alarm to operating staff at control room for liquid level monitoring and warning. 	Ensure the risk as assessed; To be incorporated into detailed design, built in construction stage	WSD / Contractors(s)	✓	✓		-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
S13.5.5	The pressure relief valves system will be designed to avoid the common mode failure such that the risk of common mode failure is negligible.	Ensure the risk as assessed; To be incorporated into detailed design, built in construction stage	WSD / Contractors(s)	✓	✓		-
S13.5.8	Design of turning angle for access road within the desalination plant should cater for 40 feet container trailer to avoid reverse manoeuvring or impact to buildings / structures in cornering.	Safety onsite transport of CO2. To be incorporated into detailed design, built in construction stage and implemented in operation stage	WSD / Contractor(s)	✓	✓	✓	-
S13.5.8	Telemetry monitoring system should be installed to alert the content level in the control room for additional safety.	Safety onsite storage of CO2. To be incorporated into detailed design, built in construction stage and implemented in operation stage	WSD / Contractor(s)	✓	✓	✓	-
S13.5.8	The storage area should be divided into a number of compartments to protect storage tanks from fire or pipeline / valve failure.	Protection on onsite storage of CO2. To be incorporated into detailed design, built in construction stage and implemented in operation stage	WSD / Contractor(s)	✓	✓	✓	-
S13.5.8	When leakage of an inner / outer tank occurs, a transfer pump should be used to remove CO2 content to other storage tanks as soon as possible. In case of emergency, venting should be carried out to ensure integrity of the storage tank.	Safety storage of CO2. To be implemented in operation stage	WSD / Contractors(s)			✓	-
S13.5.8	CO2 / O2 sensor should be installed for indoor environment with CO2 facilities or pipelines.	Safety onsite storage and use of CO2. To be incorporated into detailed design, built in construction stage and implemented in operation stage	WSD / Contractor(s)	✓	✓	✓	-
S13.5.8	Mechanical ventilation should be provided for indoor environment with CO2 facilities.	Safety onsite storage and use of CO2. To be incorporated into detailed design, built in construction stage and implemented in operation stage	WSD / Contractor(s)	✓	✓	✓	-
S13.5.8	Venting should be undertaken outdoor.	Safety operation of CO2 facilities. To be incorporated	WSD / Contractors(s)	✓	✓	✓	-

EIA Reference	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Implementation Agent	Implementation Stage			Relevant Legislation & Guidelines
				D	C	O	
		into detailed design, built in construction stage and implemented in operation stage					
S13.5.8	To enhance the safety operation of the facility, the inspection frequency of CO2 storage tanks should be twice per year.	Safety operation of CO2 storage. To be implemented in operation stage	WSD / Contractors(s)			✓	-