

Construction of Yuen Long Effluent Polishing Plant Stage 1

Construction Programme

				2020												2021												2022												2023															
				Month												Month												Month												Month															
Work ID	Work Activity	Start	Finish	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1	Site Investigation, clearance/ formation	Jan-21	Apr-25	2.1, 2.4, 2.14																																																			
2	Demolition of existing facilities	Apr-21	Jul-24	2.8, 2.9, 2.11 & 2.12				2.15																																															
3	Piling	May-21	Oct-24																																																				
4	Superstructures	Nov-21	Mar-26																																																				
5	Testing and Commissioning	Jun-23	Apr-26																																																				

				2024												2025												2026											
				Month												Month												Month											
Work ID	Work Activity	Start	Finish	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
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2.1 Referring to the milestone of environmental protection/mitigation activities as stated in relevant EP Conditions.

EIAO-EP_Project Title: Construction of Yuen Long Effluent Polishing Plant Stage 1
(Application No. AEP-565/2018)

EP Conditions	Measures/Actions	Milestones of Environmental Protection/Mitigation Activities
2.1	Employment of ET	no later than <u>3 months before the commencement of construction of the Project</u>
2.4	Employment of IEC	no later than <u>3 months before the commencement of construction of the Project</u>
2.8	Submission of Management Organizations	no later than <u>1 month before the commencement of construction of the Project</u>
2.9	Submission of Construction Phase Emergency Response Plan	no later than <u>1 month before the commencement of construction of the Project</u>
2.11 & 2.12	Measure for Mitigating Ecological Impacts during Construction of the Project (i) a pre-construction survey for areas within 100 m from the Project boundary to confirm the location(s) and status of ardeid night roost(s) (ii) a Noise Mitigation Measures Plan (NMMP)	no later than <u>1 month before the commencement of construction of the Project</u>
2.14	Submissions for Land Contamination Assessment	no later than <u>3 months before the commencement of site investigation (SI) at the concerned facilities / areas</u>
2.15	Submission of Landscape and Visual Mitigation Plan(s)	no later than <u>1 month before the commencement of the corresponding parts of landscape and visual mitigation measures of the Project</u>
2.16	Submissions or Measures to be Implemented before or during Operation of the Project	no later than <u>1 year before the commencement of operation of the Project</u>
2.17	Submission of Commissioning Test Report(s)	no later than <u>1 month before the commencement of operation of the Project</u>

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Appendix B Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Implementation Stage*			Relevant Legislation & Guidelines
				Des	C	O	
Air Quality Impact							
Construction Phase							
3.6.1.6	Watering once per every two hours on active works areas to reduce dust emission.	All active works areas during construction phase	Contractor		✓		Air Pollution Control Ordinance (APCO); Air Pollution Control (Construction Dust) Regulation; HKAQO; Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM)
3.8.1.1	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices listed below shall be carried out to further minimize construction dust impact: <ul style="list-style-type: none"> Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. Use of frequent watering for particularly dusty construction areas and areas close to ASRs. Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines. Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit. Imposition of speed controls for vehicles on site haul roads. Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs. Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise. 	Construction Sites	Contractor		✓		
Operation Phase							
3.5.2.4	Biogas generated will be stored in the biogas holders. The stored biogas will go through the sulphur absorption vessels to remove the hydrogen sulphide (H2S) before passing to the combined heat and power (CHP) generator.	YLEPP / Operation Phase	Operator	✓		✓	
3.6.3.2	Install selective catalytic reduction (SCR) to control Nitrogen Dioxide (NO2) emission at the exhausts of the CHP.	YLEPP / Operation Phase	Operator	✓		✓	
3.6.3.5	boiler and ammonia stripping unit.	YLEPP / Operation Phase	Operator	✓		✓	
3.6.2.9 and 3.7.2.1	Install an activated carbon filter with odour (ammonia) removal efficiency of at least 70% at the ammonia stripping unit exhaust.	YLEPP / Operation Phase	Operator	✓		✓	
3.7.2.1	All the odour sources in YLEPP should be covered and all odourous gas should be treated at the deodorizers (DOs) with 90% - 95% odour removal efficiency before venting to the atmosphere.	YLEPP / Operation Phase	Operator	✓		✓	EIAO-TM
Noise Impact							
Construction Phase							
4.8.1	Movable noise barriers are recommended for hydraulic breakers mounted on excavators to be adopted during construction. Good site practices listed below and the noise control requirements stated in EPD's "Recommended Pollution Control Clauses for Construction Contracts" should be included in the Contract Specification for the Contractors to follow and should be implemented to further minimize the potential noise impacts during the construction phase of the Project. <ul style="list-style-type: none"> Quiet PME, such that those listed in EPD's Quality Powered Mechanical Equipment, should be considered for construction works to further minimize the potential construction noise impact. Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme. Silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction programme. Mobile plant, if any, should be sited as far away from noise sensitive receivers (NSRs) as possible. Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum. Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities. 	Construction Sites	Contractor		✓		EIAO-TM; Noise Control Ordinance (NCO)
Operation Phase							
4.8.2	Fixed plant noise sources (except extraction fans) should be located within plantroom with silencers at air inlet and outlet and a sound proof door. Ventilation fans should be installed with silencers. Commissioning test should be conducted to ensure fixed plant noise impact would comply with the relevant noise standards.	YLEPP / Operation Phase	Operator	✓		✓	EIAO-TM; NCO
Water Quality Impact							
Construction Phase							
5.8.1.2	Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities	Construction Sites / Construction Phase	Contractor		✓		WPCO; EIAO-TM
5.8.1.3	All vehicles and plant should be cleaned before they leave a construction site to minimise the deposition of earth, mud, debris on roads. A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfill to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	Construction Sites / Construction Phase	Contractor		✓		Professional Persons Environmental Consultative Committee (ProPECC) Practice Note (PN) 1/94; WPCO; Waste Disposal Ordinance (WDO)
5.8.1.4	Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis.	Construction Sites / Construction Phase	Contractor		✓		WPCO; EIAO-TM

The milestones of environmental protection/mitigation activities under the following Project Stages (should be read in conjunction with Construction Programme)

Site Investigation, clearance/ formation	Demolition of existing facilities	Piling	Superstructures	Testing and Commissioning
✓	✓	✓	✓	
✓	✓	✓	✓	
				✓
				✓
				✓
				✓
✓	✓	✓	✓	
✓	✓	✓	✓	
✓	✓	✓	✓	

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Appendix B Implementation Schedule of Recommended Mitigation Measures

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				Des	C	O	
5.8.1.5 – 5.8.1.6	The site practices outlined in ProPECC PN 1/94 “Construction Site Drainage” should be followed where applicable to minimise surface run-off and the chance of erosion. Surface run-off from construction sites should be discharged into storm drains via adequately designed sand / silt removal facilities such as sand traps, silt traps and sedimentation basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels at site boundaries should be provided as necessary to intercept storm run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	Construction Sites / Construction Phase	Contractor	✓			WPCO, EIAO-TM; ProPECC PN 1/94
5.8.1.7	Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly (as well as at the onset of and after each rainstorm) to prevent overflows and localised flooding.	Construction Sites / Construction Phase	Contractor		✓		WPCO, EIAO-TM
5.8.1.8	Construction works should be programmed to minimise soil excavation in the wet season (i.e. April to September). If soil excavation cannot be avoided in these months or at any time of year when rainstorms are likely, temporarily exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest / edge of excavation) to prevent storm run-off from washing across exposed soil surfaces.	Construction Sites / Construction Phase	Contractor		✓		WPCO, EIAO-TM
5.8.1.9	Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	Construction Sites / Construction Phase	Contractor		✓		WPCO, EIAO-TM
5.8.1.10	Measures should be taken to minimise the ingress of rainwater into trenches. If excavation of trenches in the wet season is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	Construction Sites / Construction Phase	Contractor		✓		WPCO, EIAO-TM
5.8.1.11	Construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms.	Construction Sites / Construction Phase	Contractor		✓		WPCO, EIAO-TM
5.8.1.12	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	Construction Sites / Construction Phase	Contractor		✓		WPCO, EIAO-TM
5.8.1.13	The practices outlined in Environment, Transport and Works Bureau (ETWB) TC (Works) No. 5/2005 Protection of natural streams/ rivers from adverse impacts arising from construction works’ should also be adopted where applicable to minimise the water quality impacts upon any natural streams or surface water systems.	Construction Sites / Construction Phase	Contractor		✓		WPCO, EIAO-TM; ETWB TC (Works) No. 5/2005
5.8.1.14	Sufficient chemical toilets should be provided in the works areas. A licensed waste collector should be deployed to clean the chemical toilets on a regular basis.	Construction Sites / Construction Phase	Contractor		✓		WPCO, EIAO-TM
5.8.1.15	Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the surrounding environment.	Construction Sites / Construction Phase	Contractor		✓		WPCO, EIAO-TM
5.8.1.16	Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The WDO (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied with for control of chemical wastes.	Construction Sites / Construction Phase	Contractor		✓		WPCO, EIAO-TM, WDO
5.8.1.17	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	Construction Sites / Construction Phase	Contractor		✓		WPCO, EIAO-TM
5.8.1.18	Disposal of chemical wastes should be carried out in compliance with the WDO. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the WDO should be followed to avoid leakage or spillage of chemicals.	Construction Sites / Construction Phase	Contractor		✓		WPCO, EIAO-TM, WDO
5.8.1.19	All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS).	Construction Sites / Construction Phase	Contractor		✓		WPCO, EIAO-TM, (TM-DSS)
Design and Operation Phases							
5.8.2	Best Management Practices (BMPs) to reduce storm water and non-point source pollution are also proposed as follows: Design Measures • Exposed surface shall be avoided within the proposed development to minimise soil erosion. Development site shall be either hard paved or covered by landscaping area where appropriate to reduce soil erosion. • The existing watercourses in adjacent to the Project site will be retained to maintain the original flow path. The drainage system will be designed to avoid flooding. Devices / Facilities to Control Pollution • Screening facilities such as standard gully grating and trash grille, with spacing which is capable of screening off large substances such as fallen leaves and rubbish should be provided at the inlet of drainage system. • Road gullies with standard design and silt traps should be provided to remove particles present in stormwater runoff, where appropriate. Administrative Measures • Good management measures such as regular cleaning and sweeping of road surface/ open areas are suggested. The road surface/open area cleaning should also be carried out prior to occurrence rainstorm. • Manholes, as well as stormwater gullies, ditches provided at the Project site should be regularly inspected and cleaned (e.g. monthly). Additional inspection and cleansing should be carried out before forecast heavy rainfall.	Project site / Design and Operation Phase	Project Proponent	✓		✓	WPCO; ProPECC PN 5/93
5.8.2.8	Dual power sources from different power sub-stations should be provided to prevent the occurrence of power failure. In addition, standby facilities for the main treatment units (including the effluent pumping station and side-stream ammonia stripping plant) and standby equipment parts / accessories should also be provided in order to minimise the chance of emergency discharge. Bypass mechanism is recommended for both coarse screen and fine screen channels in the inlet works such that the sewage can be diverted to the downstream treatment units without the need for triggering overflow. The peaking factors shall also be applied for all major treatment units and electrical and mechanical equipment to avoid equipment failure. Government departments including but not limited to EPD, WSD and AFCD as well as the key stakeholders for mariculture and fisheries in Deep Bay should be informed as soon as possible in case of any emergency discharge so that appropriate actions can be taken.	Project site / Design and Operation Phase	Project Proponent	✓		✓	WPCO

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Site Investigation, clearance/ formation	Demolition of existing facilities	Piling	Superstructures	Testing and Commissioning	
✓	✓	✓	✓		
✓	✓	✓	✓		
✓	✓	✓	✓		
			✓		
✓	✓	✓	✓		
✓	✓	✓	✓		
✓	✓	✓	✓		
✓	✓	✓	✓		
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✓	✓	✓	✓		
✓	✓	✓	✓		
✓	✓	✓	✓		
✓	✓	✓	✓		
✓	✓	✓	✓		
✓	✓	✓	✓		
✓	✓	✓	✓		

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				Des	C	O	
5.8.2.9	An Emergency Response Plan will be formulated prior to commissioning of YLEPP to set out the emergency response procedures and actions to be followed in case of equipment or sewage treatment failure. The plant operators of YLEPP should carry out necessary follow-up actions according to the procedures of the contingency plan to minimise any impacts on the identified WSRs due to emergency bypass. Regular maintenances and inspections to all treatment units, penstocks and plant facilities are necessary to maintain a good operation condition. A follow-up water quality monitoring exercise shall be conducted after each emergency discharge event to monitor the recovery of water quality in the vicinity.	Project site / Design and Operation Phase	Project Proponent	✓		✓	WPCO
5.8.2.10	If capacity of San Wai STW allows, part of the raw sewage from Ping Shun Street Pumping Stations could be temporarily diverted to San Wai STW in case of emergency discharge, so that the inflow quantity to YLEPP as well as the emergency discharge loading can be minimised.	Project site / Design and Operation Phase	Project Proponent	✓		✓	WPCO
5.8.2.11	Chemical should be stored on site at bunded area and separate drainage system as appropriate should be provided to avoid any spilled chemicals from entering the storm drain in case of accidental spillage. Also, adequate tools for cleanup of spilled chemicals should be stored on site and appropriate training shall be provided to staffs to further prevent potential adverse water quality impacts from happening.	Project site / Design and Operation Phase	Project Proponent	✓		✓	WPCO
Waste Management Implication							
Construction Phase							
6.6.1.3	<u>Good Site Practices</u> Recommendations for good site practices during the construction phase include: • Nomination of approved personnel, such as a site manager, to be responsible for good site practices, and making arrangements for collection of all wastes generated at the site and effective disposal to an appropriate facility; • Training of site personnel in proper waste management and chemical waste handling procedures; • Provision of sufficient waste reception/ disposal points, of a suitable vermin-proof design that minimises windblown litter; • Arrangement for regular collection of waste for transport off-site and final disposal; • Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed, and • A WMP should be prepared and should be submitted to the Engineer for approval. One may make reference to ETWB TCW No. 19/2005 for details.	Construction Sites	Contractor		✓		Waste Disposal Ordinance (WDO)
6.6.1.5	<u>Waste Reduction Measures</u> Recommendations to achieve waste reduction include: • Segregate and store different types of construction related waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • Provide separate labelled bins to segregate recyclable waste such as aluminium cans from other general refuse generated by the work force, and to encourage collection by individual collectors; • Any unused chemicals or those with remaining functional capacity shall be recycled; • Maximising the use of reusable steel formwork to reduce the amount of C&D material; • Prior to disposal of C&D waste, it is recommended that wood, steel and other metals shall be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill; • Adopt proper storage and site practices to minimise the potential for damage to, or contamination of, construction materials; • Plan the delivery and stock of construction materials carefully to minimise the amount of surplus waste generated; • Adopt pre-cast construction method instead of cast-in-situ method for construction of concrete structures as much as possible; and • Minimise over ordering of concrete, mortars and cement grout by doing careful check before ordering.	Construction Sites	Contractor		✓		WDO
6.6.1.7	<u>Storage of Waste</u> Recommendations to minimise the impacts include: • Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimising the potential of pollution; • Maintain and clean storage areas routinely; • Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and • Different locations should be designated to stockpile each material to enhance reuse.	Construction Sites	Contractor		✓		-
6.6.1.8	<u>Collection of Waste</u> Licensed waste haulers should be employed for the collection and transportation of waste generated. The following measures should be enforced to minimise the potential adverse impacts: • Remove waste in timely manner; • Waste collectors should only collect wastes prescribed by their permits; • Impacts during transportation, such as dust and odour, should be mitigated by the use of covered trucks or in enclosed containers; • Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the WDO (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28); • Waste should be disposed of at licensed waste disposal facilities; and • Maintain records of quantities of waste generated, recycled and disposed.	Construction Sites	Contractor		✓		WDO; Waste Disposal (Charges for Disposal of Construction Waste) Regulation; Land (Miscellaneous Provisions) Ordinance
6.6.1.10	<u>Transportation of Waste</u> In order to monitor the disposal of C&D materials at PFRFs and landfills and to control fly-tipping, a trip-ticket system should be established in accordance with DEVB TCW No. 6/2010. A recording system for the amount of waste generated, recycled and disposed, including the disposal sites, should also be set up. Warning signs should be put up to remind the designated disposal sites. CCTV should be installed at the vehicular entrance and exit of the site as additional measures to prevent fly-tipping.	Transportation Route of Waste / Construction Phase	Contractor		✓		DEVB TC(W) No. 6/2010
6.6.1.12	<u>Construction and Demolition Material</u> Careful design, planning together with good site management can reduce over-ordering and generation of C&D materials such as concrete, mortar and cement grouts. Formwork should be designed to maximize the use of standard wooden panels, so that high reuse levels can be achieved. Alternatives such as steel formwork or plastic facing should be considered to increase the potential for reuse	Construction Sites	Contractor	✓	✓		-

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Site Investigation, clearance/ formation	Demolition of existing facilities	Piling	Superstructures	Testing and Commissioning	
✓		✓	✓	✓	
	✓	✓	✓	✓	
✓	✓	✓	✓	✓	
✓	✓	✓	✓	✓	
✓	✓	✓	✓	✓	
✓	✓	✓	✓	✓	
✓	✓	✓	✓	✓	

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				Des	C	O		
6.6.2.2	The below good housekeeping practices for the proposed YLEPP should be followed to further ameliorate any odour impact from handling, collection, transportation and disposal of screenings, grits and sludge: <ul style="list-style-type: none"> • Screens should be cleaned regularly to remove any accumulated organic debris; • Screening and grit transfer systems should be flushed regularly with water to remove organic debris and grit; • Grit and screened materials should be transferred to closed containers; • Scum and grease collection wells and troughs should be emptied and flushed regularly to prevent putrefaction of accumulated organics; • Skim and remove floating solids and grease from primary clarifiers regularly; • Frequent sludge withdrawal from tanks is necessary to prevent the production of gases; • Organic waste should be transported to YLEPP by fully enclosed pipes or trucks to avoid odour nuisance; • Sludge should be transported to the STF by water-tight containers to avoid H2S/odour emission and ingress of water into the containers which would lower the sludge dryness during transportation; • Sludge cake should be transferred to closed containers; • Sludge containers should be flushed with water regularly; and • Sludge trucks and containers should be washed thoroughly before leaving the YLEPP to avoid any odour nuisance during transportation. 	Operation Phase	Operator			✓	WDO	
Land Contamination								
7.8.1.2 7.8.1.3 7.8.2.1	<p>Prior to the commencement of the SI works, a review of the Contamination Assessment Plan (CAP) should be conducted to confirm whether the proposed SI works (e.g. sampling locations, testing parameters etc.) are still valid. Supplementary CAP(s), presenting findings of the review, the latest site conditions and updated sampling strategy and testing protocol, should be submitted to EPD for endorsement. The SI works should be carried out according to EPD's agreed supplementary CAP(s).</p> <p>SI works should be carried out according to the supplementary CAP endorsed by EPD. Following completion of SI works and receipt of laboratory test results, Contamination Assessment Report(s) ((CAR)(s)) should be prepared to present the findings of the SI works and to discuss the presence, nature and extent of contamination.</p> <p>If contamination is identified, Remedial Action Plan(s) ((RAP)(s)) which provides details of the remedial actions for the identified contaminated soil and / or groundwater should be endorsed by EPD. The possible remediation methods are detailed in Section 5.2 of the CAP provided in Appendix 7.1 of the EIA Report.</p> <p>Remediation action, if necessary, will be carried out according to EPD endorsed RAP(s) and Remediation Report(s) (RR(s)) will be submitted after completion of the remediation action. The RRR(s) should be endorsed by EPD prior to the commencement of construction works at the respective identified contaminated areas (if any).</p>	Existing YLSTW / Construction Phase (after decommissioning of the concerned facilities / areas but prior to the construction works at the concerned facilities / areas)	Project Proponent / Contractor		✓			Guidance Note for Contaminated Land Assessment and Remediation; Practice Guide for Investigation and Remediation of Contaminated Land; Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management
7.8.3.1	<p>The mitigation measures will be recommended in the RAP and would typically include the following:</p> <ul style="list-style-type: none"> • Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; • Excavation shall be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; Supply of suitable clean backfill material (or treated soil) after excavation; • Stockpiling site(s) shall be lined with impermeable sheeting and banded. Stockpiles shall be fully covered by impermeable sheeting to reduce dust emission. If this is not practicable due to frequent usage, regular watering shall be applied. However, watering shall be avoided on stockpiles of contaminated soil to minimise contaminated runoff. • Vehicles containing any excavated materials shall be suitably covered to limit potential dust emissions or contaminated wastewater run-off, and truck bodies and tailgates shall be sealed to prevent any discharge during transport or during wet conditions; • Speed control for the trucks carrying contaminated materials shall be enforced; • Vehicle wheel and body washing facilities at the site's exist points shall be established and used; and • Pollution control measures for air emissions (e.g. from biopile blower and handling of cement), noise emissions (e.g. from blower or earthmoving equipment), and water discharges (e.g. runoff control from treatment facility) shall be implemented and complied with relevant regulations and guidelines. 	Project Site / Construction Phase	Contractor		✓		Guidance Note for Contaminated Land Assessment and Remediation; Practice Guide for Investigation and Remediation of Contaminated Land; Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management	
Ecological Impact (Terrestrial and Aquatic)								
Construction Phase								
8.10.2.1	Avoidance of Recognised Site of Conservation Importance Construction works are designed to be confined to the boundary of the existing YLSTW that direct impacts on all other sites of conservation importance within the assessment area, including the Ramsar Site, Priority Site, WCA, WBA, SSSI and CA would be avoided.	Project site / Construction Phase	Project Proponent / Contractor	✓	✓		-	
8.10.2.3 – 8.10.2.4	Avoidance of Demolition Works Using Breakers Mounted on Excavators and Percussive Piling during Dry Season In order to minimise the construction noise disturbance on overwintering waterbirds, the noisy construction works, i.e. all percussive piling works and demolition using breakers mounted on excavators, would therefore be scheduled outside the dry season (i.e. November to March, which is the peak overwintering period of waterbirds).	Construction sites / Construction Phase	Contractor		✓		-	
8.10.2.5	Restriction of Construction Hours No construction activities with the use of PME should be conducted within 100m from any night roost confirmed by the pre-construction survey after 18:00 during wet season and 17:30 during dry season to avoid disturbance to the nearby ardeids night roosts.	Construction sites / Construction Phase	Contractor		✓		-	
8.10.3.2 – 8.10.3.3	Minimising Construction Noise Disturbance Impacts through Consideration of Alternative Construction Methods Demolition using concrete crusher is quieter than demolition using breaker that its construction noise level is comparable to other general construction activities and concrete crusher would be used for demolition works to be undertaken during dry season months. The quieter foundation methods, including bored piling, raft foundation and shallow foundation, would be adopted as far as possible.	Construction sites / Construction Phase	Contractor		✓		-	
8.10.3.4 – 8.10.3.5	Minimising Construction Noise Disturbance Impacts Through Careful Phasing of Construction Activities Percussive piling works and demolition using breakers mounted on excavators would typically be completed over two wet seasons and not be undertaken in the same construction zone at the same time to localise the construction disturbance and to reduce the duration of high level of disturbances on sensitive wetland habitats and associated waterbirds nearby each construction zone. Facilities in the eastern side of the Project site (i.e. Phase 1A and Phase 1B) are scheduled to be developed first that the new structures could screen the works in the middle and western parts of the site in later stage of the construction phase after the structures in Phase 1A and Phase 1B are completed, hence minimising the construction noise and human disturbance on sensitive wetland habitats adjacent to the Project site in Shan Pui River, including the confluence of Shan Pui River and Kam Tin River and ardeid night roost to the immediate east of the Project site.	Project site / Construction Phase	Project Proponent / Contractor	✓	✓		-	

The milestones of environmental protection/mitigation activities under the following Project Stages (should be read in conjunction with Construction Programme)

Site Investigation, clearance/ formation	Demolition of existing facilities	Piling	Superstructures	Testing and Commissioning
				✓
✓	✓	✓		
✓	✓	✓		
✓	✓	✓	✓	✓
✓	✓	✓	✓	✓
✓	✓	✓	✓	✓
✓	✓	✓	✓	✓

Construction of Yuen Long Effluent Polishing Plant Stage 1

EMSheet1 Manual

Appendix B Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	Environmental Protection Measures	Location / Duration of Measures / Timing of Completion of Measures	Implementation Agent	Implementation Stage*			Relevant Legislation & Guidelines
				Des	C	O	
11.5.8	<ul style="list-style-type: none"> Method statements and risk assessments shall be prepared and safety control measures shall be in place before commencement of work All work procedures shall be compiled with the operating plant procedures or guidelines and regulatory requirements; Work permit system, on-site pre-work risk assessment and emergency response procedure shall be in place before commencement of work; All construction workers shall equip with appropriate personal protective equipment (PPE) when working at the Project Site; Safety training and briefings shall be provided to all construction workers; Regular site safety inspections shall be conducted during the construction phase of the Project; 	Project site / Construction Phase	Contractor		✓		-
11.9.1.2	<ul style="list-style-type: none"> Ensure speed limit enforcement is specified in the contractor's method statement to limit the speed of construction vehicles onsite; Conduct speed checks to ensure enforcement of speed limits and to ensure adequate site access control; A lifting plan, with detailed risk assessment, should be prepared and endorsed for heavy lifting of large equipment; Vehicle crash barriers should be provided between the construction site and the operating biogas facilities; Ensure that a hazardous area classification study is conducted and hazardous area maps are updated before the start of the construction activities to ensure ignition sources are controlled during both construction and operation phases; Ensure work permit system for hot work activities within the Project Site is specified in the contractor's method statement to minimize and control the ignition sources during the construction phase; Ensure effective communication system / protocol is in place between the contractors and the operation staff; Ensure the Project Construction Emergency Response Plan is integrated with the Emergency Response Plan for the YLEPP during construction phase. The plan should address stop work instructions to be promptly communicated to all construction workers performing hot works in case a confirmed biogas detection at the Project Site; Ensure that the construction activities do not impede the functions of fire and gas detection system, fire protection system, muster areas, fire-fighting vehicle access and escape routes; Ensure a Job Safety Analysis is conducted for construction activities of the Project during the construction phase, to identify and analyze hazards associated with the construction activities (e.g. lifting operations by cranes) onto the operating biogas facilities. <p>Potential risks of the construction activities shall be assessed, and risk precautionary measures shall be implemented in Contractor's works procedures.</p>	Project site / Construction Phase	Contractor		✓		-
Operation Phase							
11.9.1.1	<ul style="list-style-type: none"> Process plant building should be provided with adequate number of gas detectors distributed over various areas of potential leak sources to provide adequate coverage. All electrical equipment inside the building should be classified in accordance with the electrical area classification requirements. No unclassified electrical equipment should be used during operations or maintenance. All safety valves should be designed to discharge the released fluid to a safe location and stop misdirection of fluid flows in order to avoid hazardous outcome. Safety markings and crash barriers should be provided to the aboveground piping, digesters and gas holders near the entrance. Fixed crash barriers should be provided in areas where process equipment is adjacent to the internal roadway to protect against vehicle collision. Adequate warning signage and lighting should also be provided and maximum speed limit should also be in place. Lightning protection installations should be installed following IEC 62305, BS EN 62305, AS/NZS 1768, NFPA 780 or equivalent standards. Suitable fire extinguishers should be provided within the site. An External Water Spray System (EWSS) should be installed in appropriate areas, such as around the gas holders, digester and sulphur removal vessels. The facilities should also be equipped with fire and gas detection system and fire suppression system. Stringent procedures should be implemented to prohibit smoking or naked flames to be used on-site. 	YLEPP / Operational Phase	Project Proponent, Operators	✓		✓	-

*Des = Design; C = Construction; O = Operation

The milestones of environmental protection/mitigation activities under the following Project Stages (should be read in conjunction with Construction Programme)				
Site Investigation, clearance/ formation	Demolition of existing facilities	Piling	Superstructures	Testing and Commissioning
✓	✓	✓	✓	✓
✓	✓	✓	✓	✓