

Capco 青山發電有限公司
Castle Peak Power Co. Ltd.

 **港燈**
HK Electric

 **HKLTL**

Hong Kong Offshore LNG Terminal Project

Quarterly Environmental Monitoring and Audit (EM&A) Summary Report for January to March 2021

13 July 2021

Project No.: 0505354

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Signature Page

13 July 2021

Hong Kong Offshore LNG Terminal Project

Quarterly Environmental Monitoring and Audit (EM&A) Summary Report
for January to March 2021



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**Hong Kong Offshore LNG Terminal
Environmental Certification Sheet**
FEP-01/558/2018/A, FEP-02/558/2018/A and FEP-03/558/2018/A

Reference Document/Plan

| | |
|--|--|
| Document/ Plan to be Certified/ Verified : | Quarterly Environmental Monitoring and Audit (EM&A) Summary Report for January to March 2021 |
| Date of Report: | 13 July 2021 |
| Date prepared by ET: | 13 July 2021 |
| Date received by IEC: | 13 July 2021 |

Reference EP Requirement

| | |
|--|---|
| EP Condition: | Condition No. 5.1 of FEP-01/558/2018/A, FEP-02/558/2018/A & FEP-03/558/2018/A |
| The Permit Holder shall implement the EM&A programme in accordance with the procedures and requirements as set out in the Updated EM&A Manual. | |

ET Certification

| | |
|--|--|
| I hereby certify that the above referenced document/ plan complies with the above referenced condition of FEP-01/558/2018/A, FEP-02/558/2018/A & FEP-03/558/2018/A. | |
| Mr Raymond Chow, Environmental Team Leader: |  Date: 13 July 2021 |

IEC Verification

| | |
|---|--|
| I hereby verify that the above referenced document/ plan complies with the above referenced condition of FEP-01/558/2018/A, FEP-02/558/2018/A & FEP-03/558/2018/A. | |
| Ms Lydia Chak, Independent Environmental Checker: |  Date: 13 July 2021 |

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EXECUTIVE SUMMARY

To support the increased use of natural gas in Hong Kong from 2020 onwards, Castle Peak Power Company Limited (CAPCO) and The Hongkong Electric Co., Ltd. (HK Electric) have identified that the development of an offshore liquefied natural gas (LNG) receiving terminal in Hong Kong using Floating Storage and Regasification Unit (FSRU) technology ('the Project') presents a viable additional gas supply option that will provide energy security through access to competitive gas supplies from world markets. The Project will involve the construction and operation of an offshore LNG import facility to be located in the southern waters of Hong Kong, a double berth jetty, and subsea pipelines that connect to the gas receiving stations (GRS) at the Black Point Power Station (BPPS) and the Lamma Power Station (LPS). To demarcate the works between different parties, the following Further Environmental Permits (FEPs) were issued for the Project:

- the double berth jetty at LNG Terminal under the Hong Kong LNG Terminal Limited (HKLTL), joint venture between CAPCO and HK Electric (FEP-01/558/2018/A) – construction commenced on 27 November 2020;
- the subsea gas pipeline for the BPPS and the associated GRS in the BPPS under CAPCO (FEP-03/558/2018/A) – construction commenced on 23 September 2020; and
- the subsea gas pipeline for the LPS and the associated GRS in the LPS under HK Electric (FEP-02/558/2018/A) – construction commenced on 13 December 2020.

This is the Quarterly EM&A Summary Report presenting the EM&A works carried out during the period from 1 January to 31 March 2021 for the Project in accordance with the Updated EM&A Manual. A summary of monitoring and audit activities conducted in the reporting period is listed below:

| Activities | Number of Sessions |
|---|---|
| For FEP-02/558/2018/A | |
| Marine Water Quality Monitoring | 13 |
| Marine Mammal Exclusion Zone Monitoring | During dredging / jetting operations for construction of LPS Pipeline |
| Pilot Test on the Efficiency of Silt Curtain System – Cage-type Silt Curtain for Dredging Operation | 1 |
| Environmental Site Inspection | 5 |
| For FEP-03/558/2018/A | |
| Environmental Site Inspection | 8 |

Environmental auditing works, including regular site inspections of construction works conducted by the ET, audit of implementation of Waste Management Plan, and review of the acceptability of operating speeds and marine travel routes of working vessels, including checking of compliance with the approval conditions given by the Director of Environmental Protection for the entry of working vessels within the proposed South Lantau Marine Park (SLMP) in pursuant to Condition 3.4 of FEP-02/558/2018/A, were conducted in the reporting period. No non-compliance of environmental statutory requirements was identified.

Breaches of Action and Limit Levels

There were no breaches of Action and Limit Levels for marine water quality monitoring in the reporting period.

Since there were no construction activities conducted in the reporting period requiring impact monitoring of marine mammal in accordance with the Updated EM&A Manual, there were no breaches of Action and Limit Levels for marine mammal monitoring in the reporting period.

Environmental Complaints, Notification of Summons and Successful Prosecution

There were no environmental complaints, notification of summons and successful prosecutions recorded in the reporting period.

Reporting Changes

There were no reporting changes in the reporting period.

Comments, Recommendations and Conclusions for the Quarter

The recommended environmental mitigation measures for the Project were effectively implemented and the EM&A programme undertaken by the ET has effectively monitored the construction activities as well as ensured proper implementation of mitigation measures in the reporting period.

1. INTRODUCTION

1.1 Background

To support the increased use of natural gas in Hong Kong from 2020 onwards, Castle Peak Power Company Limited (CAPCO) and The Hongkong Electric Co., Ltd. (HK Electric) have identified that the development of an offshore liquefied natural gas (LNG) receiving terminal in Hong Kong using Floating Storage and Regasification Unit (FSRU) technology ('the Project') presents a viable additional gas supply option that will provide energy security through access to competitive gas supplies from world markets. The Project will involve the construction and operation of an offshore LNG import facility to be located in the southern waters of Hong Kong, a double berth jetty, and subsea pipelines that connect to the gas receiving stations (GRS) at the Black Point Power Station (BPPS) and the Lamma Power Station (LPS).

The Environmental Impact Assessment (EIA) Report for the Project was submitted to the Environmental Protection Department (EPD) of the HKSAR Government in May 2018. The EIA Report (EIAO Register No. AEIAR-218/2018) was approved by EPD and the associated Environmental Permit (EP) (EP-558/2018) was issued in October 2018.

An application for Further Environmental Permits (FEPs) were made on 24 December 2019 to demarcate the works between the different parties. The following FEPs were issued on 17 January 2020 and the EP under EP-558/2018 was surrendered on 5 March 2020.

- the double berth jetty at LNG Terminal under the Hong Kong LNG Terminal Limited (HKLTL), joint venture between CAPCO and HK Electric (FEP-01/558/2018/A) ⁽¹⁾ – construction commenced on 27 November 2020;
- the subsea gas pipeline for the BPPS and the associated GRS in the BPPS under CAPCO (FEP-03/558/2018/A) ⁽²⁾ – construction commenced on 23 September 2020; and
- the subsea gas pipeline for the LPS and the associated GRS in the LPS under HK Electric (FEP-02/558/2018/A) ⁽³⁾ – construction commenced on 13 December 2020.

The location of these components is shown in **Figures 1.1, 1.2** and **1.3**.

1.2 Scope of the EM&A Report

This is the Quarterly EM&A Summary Report for the Project which summarises the key findings of the EM&A programme during the reporting period from 1 January to 31 March 2021 for the construction works for the Project in accordance with the Updated EM&A Manual and the requirements of the Further Environmental Permits (FEP-01/558/2018/A, FEP-02/558/2018/A & FEP-03/558/2018/A).

1.3 Organisation Structure

The organisation structure of the Project is shown in **Annex A**. The key personnel and contact details are summarised in **Table 1.1** below.

-
- (1) Application for variation of an environmental permit for FEP-01/558/2018 was undertaken and the latest FEP (FEP-01/558/2018/A) was issued on 6 November 2020.
 - (2) Application for variation of an environmental permit for FEP-03/558/2018 was undertaken and the latest FEP (FEP-03/558/2018/A) was issued on 22 January 2021.
 - (3) Application for variation of an environmental permit for FEP-02/558/2018 was undertaken and the latest FEP (FEP-02/558/2018/A) was issued on 22 December 2020.

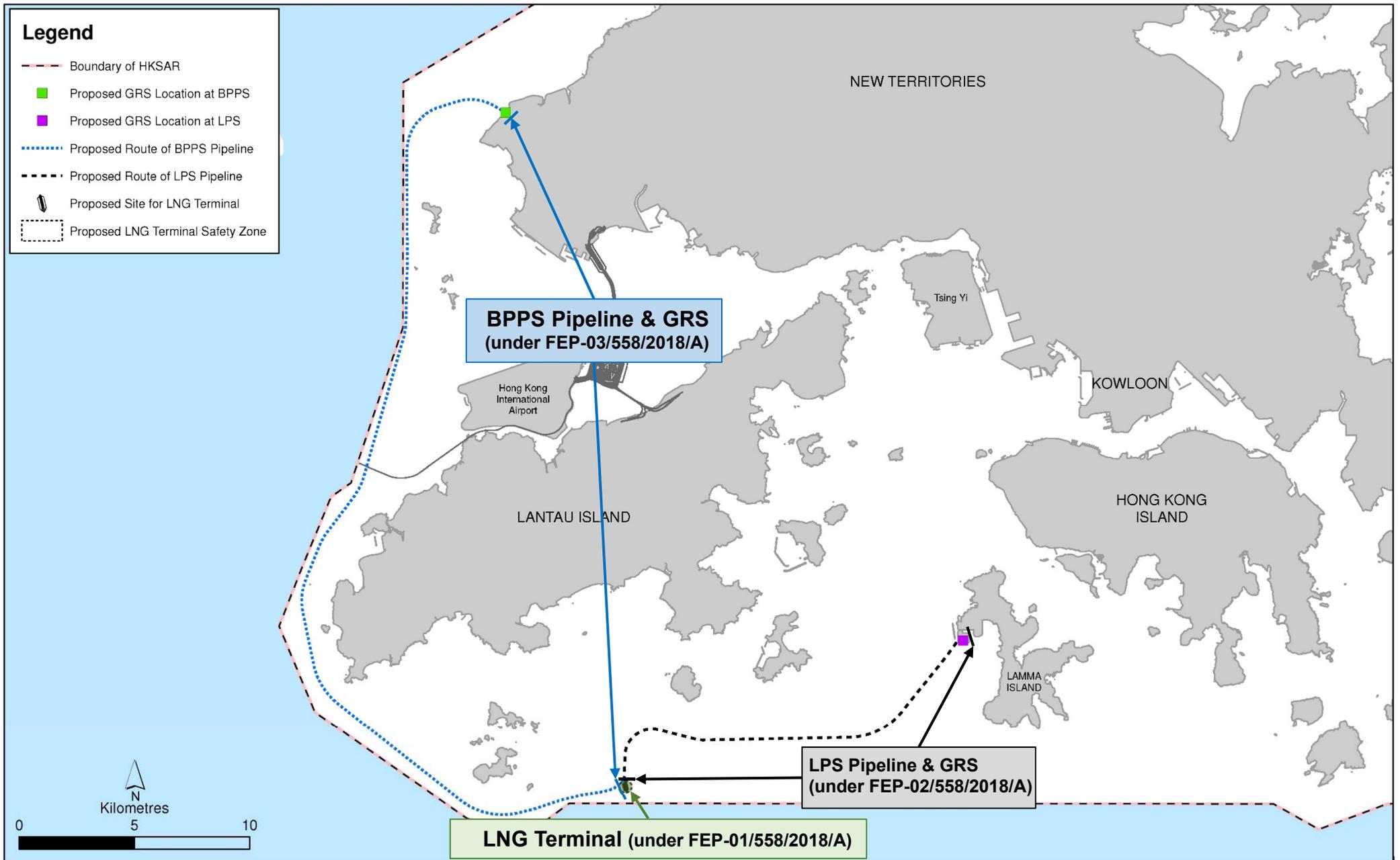
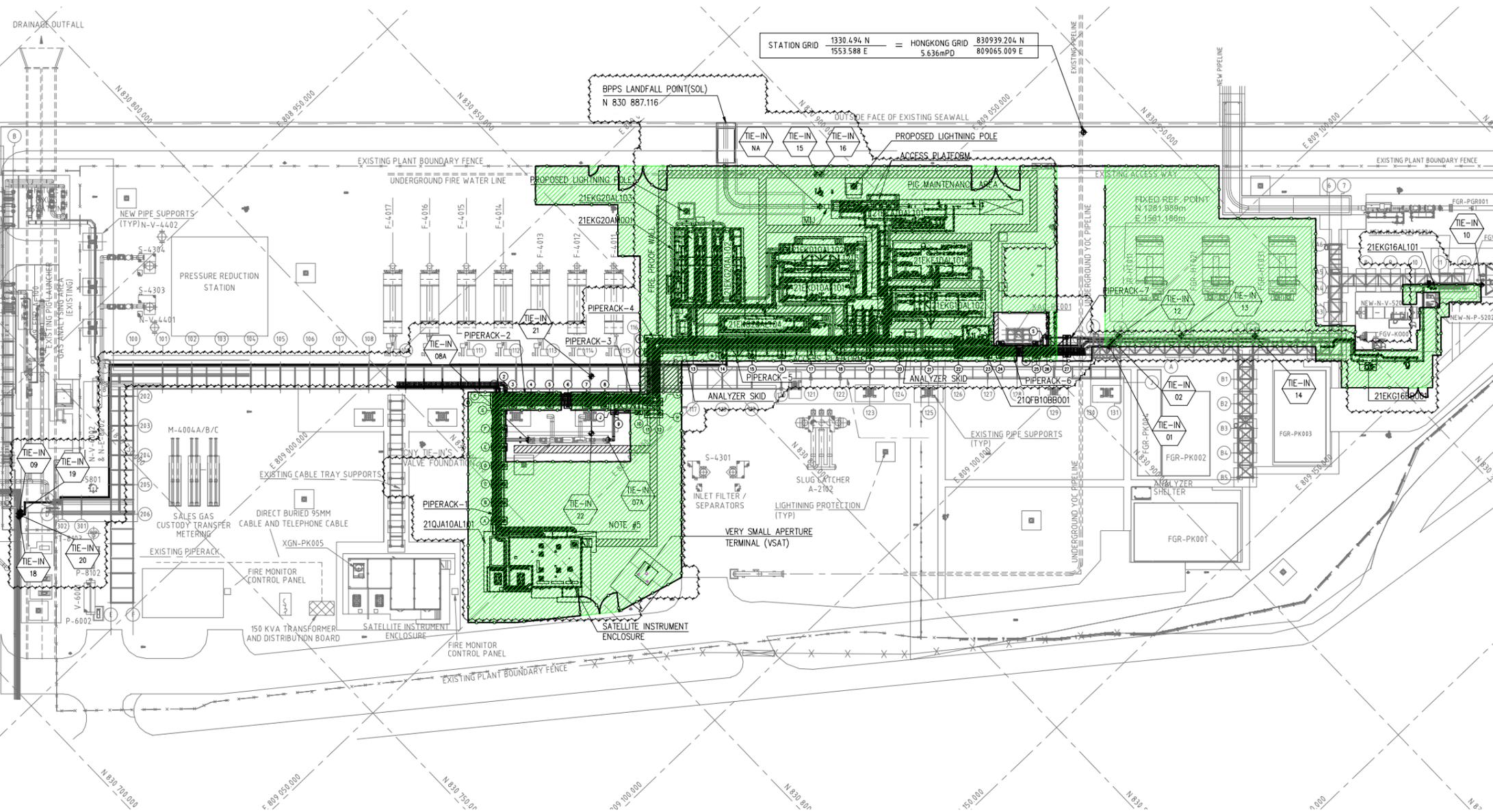
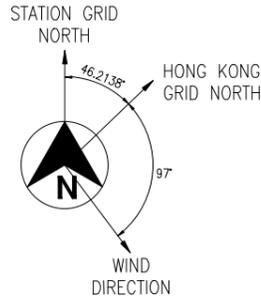
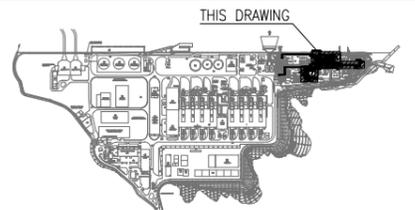


Figure 1.1

Indicative Location of Key Project Components



KEY PLAN



GENERAL NOTES

1. ALL DIMENSIONS ARE IN mm, ELEVATIONS & COORDINATES ARE IN m.
2. NOMINAL GRADE (PIPING DATUM) 0.000m = NOMINAL GRADE (HONG KONG DATUM) 5.700m.
3. RELATIONSHIP OF HONG KONG GRID TO STATION GRID.
H.K. GRID 808 950.493 E = STATION GRID 0.000 E
828 896.966 N = STATION GRID 0.000 N
4. PIG RECEIVER DESIGNED FOR INTELLIGENT PIGGING.
5. EXISTING HOSE REEL CABINET AT NEW SIE BUILDING SHALL BE RELOCATED.

LEGEND

- ESCAPE /ACCESS CLEAR WIDTH OF NOT LESS THAN 1.525m AND CLEAR HEIGHT OF 2.3m.
- NEW BPPS GRS SCOPE OF WORK
- SITE BOUNDARY AT THE BPPS GRS

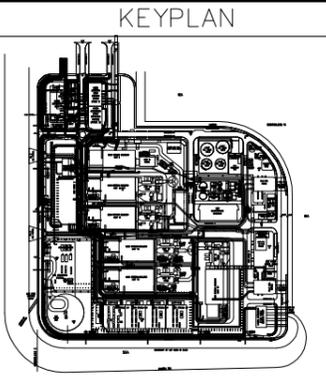
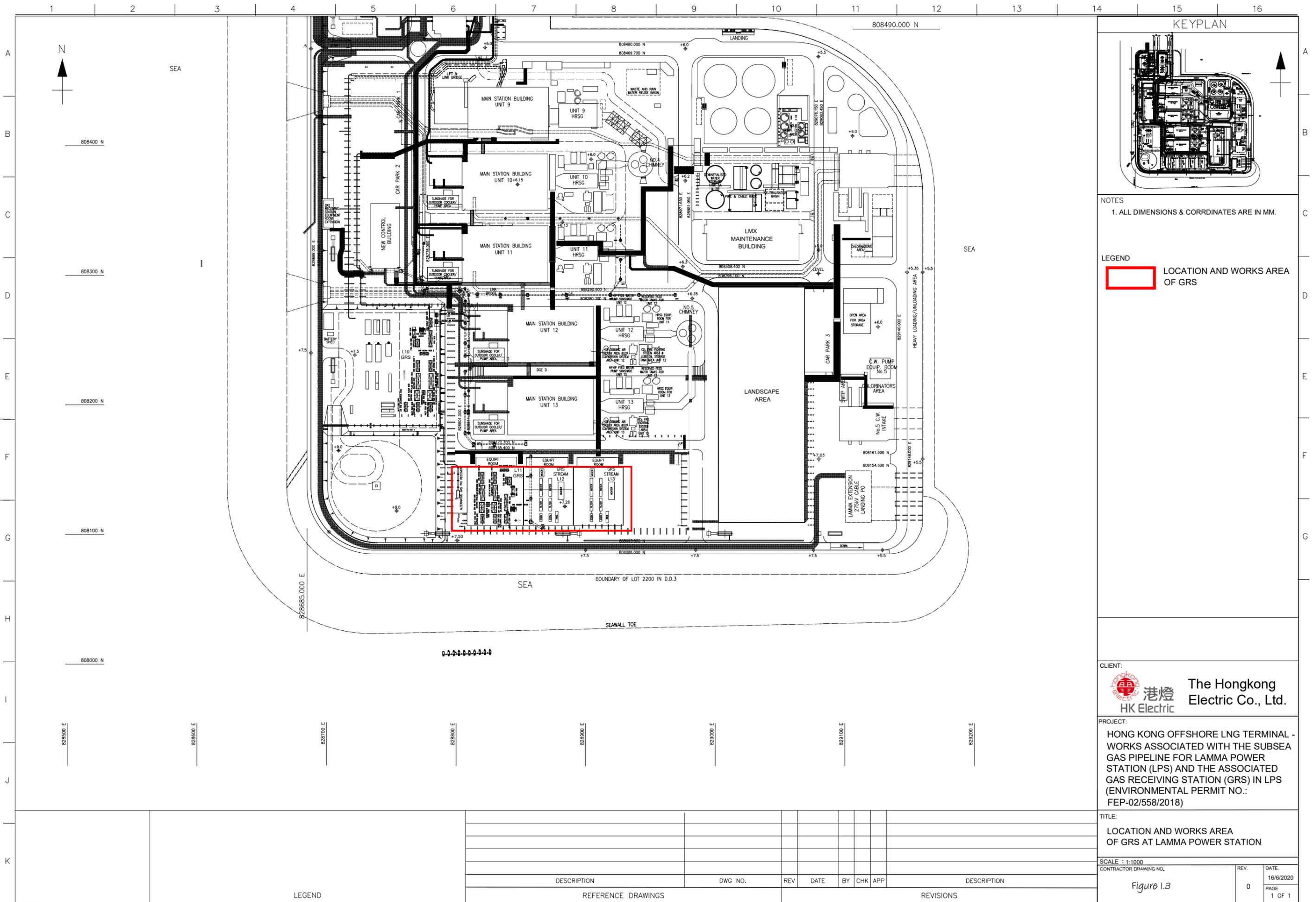


HKOLNG-COEEC-21EKG-MPD010-9101
 DWG. NO. HKOLNG GRS - EQUIPMENT LIST
 DRAWING TITLE

REFERENCE DOCUMENTS

| REVISION | DATE | DESCRIPTION | BY | CHK. | APP'D | CLP |
|----------|-----------|---------------------------|-----|------|-------|-----|
| C | 03JUN2020 | ISSUED FOR REVIEW | AKR | ASD | MF | |
| B | 17APR2020 | INTERNALLY APPROVED | AKR | ASD | MF | |
| A | 21FEB2020 | DISCIPLINE INTERNAL CHECK | AKR | ASD | MF | |

| | | | | |
|-----------|---|---|--|------------------------|
| CLIENT | Capco 香港電業有限公司 Cable Peak Power Co. Ltd. | Offshore Oil Engineering Co., Ltd. | rma FINTEURES | JOB No. 20ZB-DD02 |
| SIGNATURE | DATE | PROJECT: HONG KONG OFFSHORE LNG TERMINAL PROJECT PACKAGE B | CERTIF. No. A112002816 | |
| DRAWN | SGB | 20AUG2020 | DRAWING TITLE: HKOLNG GRS - OVERALL PLOT PLAN GRS | SCALE (A3) 1 : 1000 |
| DESIGNED | AKR | 20AUG2020 | | Figure 1.2 |
| CHECKED | ASD | 20AUG2020 | | |
| REVIEWED | TWC | 20AUG2020 | | |
| EXAMINED | TWC | 20AUG2020 | | |
| APPROVED | MF | 20AUG2020 | DWG No. HKOLNG-COEEC-21EKG-MLDO20-9112 | REV. C |



NOTES
1. ALL DIMENSIONS & CORRINATES ARE IN MM.

LEGEND
 LOCATION AND WORKS AREA OF GRS

CLIENT:
 The Hongkong Electric Co., Ltd.

PROJECT:
 HONG KONG OFFSHORE LNG TERMINAL - WORKS ASSOCIATED WITH THE SUBSEA GAS PIPELINE FOR LAMMA POWER STATION (LPS) AND THE ASSOCIATED GAS RECEIVING STATION (GRS) IN LPS (ENVIRONMENTAL PERMIT NO.: FEP-02/558/2018)

TITLE:
 LOCATION AND WORKS AREA OF GRS AT LAMMA POWER STATION

SCALE : 1:1000
 CONTRACTOR DRAWING NO. REV. DATE
0 16/6/2020
 Figure 1.3 PAGE 1 OF 1

0-0-0-0-0-0-0-0

| DESCRIPTION | DWG NO. | REV | DATE | BY | CHK | APP | DESCRIPTION |
|--------------------|---------|-----|------|----|-----|-----|-------------|
| REFERENCE DRAWINGS | | | | | | | |
| REVISIONS | | | | | | | |

LEGEND

Table 1.1 Contact Information of Key Personnel

| Party | Position | Name | Telephone |
|---|---|---------------|-----------|
| CAPCO / HKLTL (For FEP-01/558/2018/A and FEP-03/558/2018/A) | Senior Environmental Manager | Dr Helen Chiu | 2596 4116 |
| HK Electric / HKLTL (For FEP-01/558/2018/A and FEP-02/558/2018/A) | Head of Mechanical Engineering, Projects Division | Norman Chan | 3143 3819 |
| Environmental Team (ET) (ERM-Hong Kong, Limited) | ET Leader | Raymond Chow | 2271 3114 |
| Independent Environmental Checker (IEC) (Mott MacDonald Hong Kong Limited) | IEC | Arthur Lo | 2828 5757 |
| Contractor (CNOOC Offshore Oil Engineering Co. Ltd.) | Environmental Manager | H Y Tang | 6111 5789 |
| | Environmental Officer | Kelvin Cheung | 9060 1020 |

1.4 Contact Information for the Project

The contact information for the Project is provided in **Table 1.2**. The public can contact the project proponents through the following channel for any enquiries and comments on the environmental monitoring data and related information of the Project.

Table 1.2 Contact Information for the Project

| Channel | Contact Information |
|---------|--|
| Email | enquiry@env.hkolng.com |

1.5 Summary of Construction Activities

The programme of the construction is shown in **Annex B**.

As informed by the Contractor, details of the major construction activities undertaken in the reporting period are listed in **Table 1.3** below:

Table 1.3 Major Construction Activities Undertaken in the Reporting Period

| FEP | Land-based Works | Marine-based Works |
|-------------------|---|---|
| FEP-01/558/2018/A | <ul style="list-style-type: none"> ▪ Nil | <ul style="list-style-type: none"> ▪ Nil |
| FEP-02/558/2018/A | <ul style="list-style-type: none"> ▪ Nil | <ul style="list-style-type: none"> ▪ Pre-trenching ▪ Dredging works ▪ De-burial (pre-trenching) of pre-installed pipeline by Mass Flow Excavator ⁽¹⁾ ▪ Pipe-laying |

| FEP | Land-based Works | Marine-based Works |
|-------------------|--|---|
| FEP-03/558/2018/A | <ul style="list-style-type: none"> ▪ Excavation for Foundation - Pipe Rack ▪ Excavation for Foundation ▪ Excavation for Plate Load Test - Satellite Instrument Enclosure ▪ Excavation for box culvert works ▪ Construction of reinforced concrete foundation ▪ Underground drainage works ▪ Drainage installation | <ul style="list-style-type: none"> ▪ Nil |

Remark: (1) Mass flow excavator is a variance of jetting machine.

1.6 Summary of EM&A Programme Requirements

The status of EM&A Programme for all environmental aspects required under the Updated EM&A Manual are presented in **Table 1.4**. As no percussive piling works were undertaken in the reporting period, no marine mammal monitoring, including vessel-based line transect surveys and passive acoustic monitoring was required to be monitored in accordance with the Updated EM&A Manual. The requirements of relevant environmental monitoring, including monitoring parameters, Action and Limit Levels, Event and Action Plan(s), environmental mitigation measures, etc. are presented in *Section 2*.

Table 1.4 Summary of Status for the EM&A Programme under the Updated EM&A Manual

| Aspects | Relevant FEP(s) | Status |
|--|---|---|
| Water Quality | | |
| Baseline Monitoring | FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A | <ul style="list-style-type: none"> ▪ Completed |
| Efficiency of Silt Curtain System | FEP-02/558/2018/A FEP-03/558/2018/A | <ul style="list-style-type: none"> ▪ Completed for cage-type silt curtain for dredging operation (under FEP-02/558/2018/A) ▪ To be implemented upon early stage of construction works for dredging / jetting operations for FEP-02/558/2018/A and FEP-03/558/2018/A |
| Construction Phase Monitoring | FEP-02/558/2018/A FEP-03/558/2018/A | <ul style="list-style-type: none"> ▪ On-going for dredging / jetting operations for FEP-02/558/2018/A ▪ To be implemented upon commencement of construction works for dredging/jetting operations for FEP-03/558/2018/A |
| Post-Construction Monitoring | FEP-02/558/2018/A FEP-03/558/2018/A | <ul style="list-style-type: none"> ▪ To be implemented upon completion of construction works for the Project |
| Monitoring for Hydrotesting for the Subsea Gas Pipelines | FEP-02/558/2018/A FEP-03/558/2018/A | <ul style="list-style-type: none"> ▪ To be implemented during hydrotesting for the subsea gas pipelines |
| First-year of LNG Terminal Operation | FEP-01/558/2018/A | <ul style="list-style-type: none"> ▪ To be implemented during LNG Terminal operation |
| Maintenance Dredging | FEP-01/558/2018/A | <ul style="list-style-type: none"> ▪ To be implemented during maintenance dredging |

| Aspects | Relevant FEP(s) | Status |
|---|---|---|
| Waste Management | | |
| Audit of Waste Management Practice | FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A | <ul style="list-style-type: none"> ■ On-going |
| Ecology | | |
| Baseline Monitoring (Vessel-based Line Transect Survey and Passive Acoustic Monitoring) | FEP-01/558/2018/A | <ul style="list-style-type: none"> ■ Completed |
| Construction Phase Monitoring (Vessel-based Line Transect Survey and Passive Acoustic Monitoring) | FEP-01/558/2018/A | <ul style="list-style-type: none"> ■ To be implemented when percussive piling works for construction of Jetty are undertaken |
| Post-Construction Monitoring (Vessel-based Line Transect Survey and Passive Acoustic Monitoring) | FEP-01/558/2018/A | <ul style="list-style-type: none"> ■ To be implemented upon completion of construction works for the Project |
| Marine Mammal Exclusion Zone Monitoring | FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A | <ul style="list-style-type: none"> ■ On-going for marine dredging / jetting operations for FEP-02/558/2018/A (marine mammal exclusion zone with 250 m radius) ■ To be implemented when percussive piling works for construction of Jetty (under FEP-01/558/2018/A) or marine dredging / jetting operations (under FEP-03/558/2018/A) are undertaken |
| Environmental Site Inspection | | |
| Regular Site Inspection | FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A | <ul style="list-style-type: none"> ■ On-going |
| Records of Operating Speeds and Marine Travel Routes for Working Vessels | FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A | <ul style="list-style-type: none"> ■ On-going for FEP-02/558/2018/A ■ To be implemented when marine-based works are undertaken for FEP-01/558/2018/A and upon commencement of marine-based construction works for FEP-03/558/2018/A |
| Environmental Log Book | FEP-01/558/2018/A FEP-02/558/2018/A FEP-03/558/2018/A | <ul style="list-style-type: none"> ■ On-going |

1.7 Status of Statutory Environmental Requirements and Compliance with Further Environmental Permit Conditions

The environmental licenses and permits, including further environmental permits, registration as chemical waste producer, construction noise permits, which were valid in the reporting period. No non-compliance with environmental statutory requirements, including FEP conditions (status of submission) under the EIA Ordinance was identified. The status of statutory environmental requirements is presented in **Annex D**.

1.8 Impact Prediction Review

The potential environmental impacts arising from the major construction activities undertaken in the reporting period provided in **Table 1.3** were mainly associated with dust emission from construction activities and stockpiles, waste management, site surface runoff, wastewater discharge, and elevation

in suspended solids and disturbance to marine mammals due to marine-based works. There were no breaches of Action and Limit Levels and no non-compliance of environmental statutory requirements identified for the environmental monitoring and auditing works conducted in the reporting period, including regular site inspections of construction works conducted by the ET, audit of implementation of Waste Management Plan, review of the acceptability of operating speeds and marine travel routes of working vessels, and checking of compliance with the approval conditions given by EPD for allowing the entry of working vessels within the proposed SLMP in pursuant to Condition 3.4 of FEP-02/558/2018/A. The recommended environmental mitigation measures were properly implemented in the reporting period. Excessive variation between the EIA study predictions and the EM&A monitoring results was not found and therefore no investigation and follow-up procedures were considered necessary.

The environmental mitigation implementation schedule (EMIS) is presented in **Annex C**.

2. SUMMARY OF EM&A RESULTS

The EM&A programme for the Project required environmental monitoring for marine water quality and marine mammals as well as environmental site inspections for air quality, construction noise, water quality, waste management, marine ecology, landscape and visual, and hazard to life impacts. As presented in *Section 1.6*, environmental site inspections and audit on waste management practice were conducted for FEP-01/558/2018/A, FEP-02/558/2018/A and FEP-03/558/2018/A while marine water quality monitoring, including pilot test on the efficiency of silt curtain system, and marine mammal exclusion zone monitoring with 250 m radius were conducted for FEP-02/558/2018/A during the reporting period, and the findings are presented below.

2.1 Environmental Site Inspection

Regular environmental site inspections were carried out with the Contractor and Project Proponents to confirm the implementation of appropriate environmental protection and pollution control mitigation measures for air quality, construction noise, water quality, waste management, marine ecology, landscape and visual, and hazard to life impacts under the Project. In the reporting period, 13 environmental site inspections were carried out on 6, 13, 20 and 27 January; 2, 11, 17 and 23 February; 3, 10, 17, 23 and 31 March 2021. The Independent Environmental Checker (IEC) attended the environmental site inspections as the IEC audits on 20 January, 11 February, 10 and 17 March 2021 during the reporting period. The key observations from site inspections and Contractor's follow-up actions are summarized in **Table 2.1**. The environmental mitigation implementation schedule (EMIS) is presented in **Annex C**.

Table 2.1 Key Observations from Site Inspections and Contractor's Follow-up Actions

| Item | Description | Contractor's Follow-up Action(s) Taken |
|-----------------------------|---|---|
| FEP-02/558/2018/A | | |
| <i>January - March 2021</i> | | |
| - | Nil observation. | N/A |
| FEP-03/558/2018/A | | |
| <i>January – March 2021</i> | | |
| 1 | Copies of updated Further Environmental Permit (i.e. FEP-03/558/2018/A) were not displayed at various locations within the construction site. | Copies of updated FEP were displayed accordingly. |
| 2 | Dusty material left on the haul road outside the GRS area was observed. The Contractor was reminded to keep the road surface clear of dusty material with adequate dust suppression measures. | Haul road was clear of dusty material with dust suppression measures implemented. |
| 3 | Two excavators of which one not being affixed to an approved label while the other one being affixed to an approved label without proper colour, and an air compressor being affixed to an exemption label without proper colour as required by the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation were observed. The Contractor was reminded to affix proper labels to the Non-road Mobile Machineries (NRMMS) in accordance with the labelling | Proper labels were affixed to NRMMS. |

| Item | Description | Contractor's Follow-up Action(s) Taken |
|------|--|--|
| | requirements as per the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation. | |
| 4 | Improper disposal of general refuse was observed. The Contractor was reminded to provide waste collection bin for proper disposal of general refuse. | Waste collection point was provided. |

2.2 Waste Management Status

Waste management audits were performed with reference to the Waste Management Checklists for the corresponding Waste Management Plans detailed in *Annex E of the associated Monthly EM&A Reports* during the regular environmental site inspections carried out in the reporting period. No non-compliance for Contractor's waste management practices was identified during the audits.

The quantities of different types of waste and marine sediment generated for the three FEPs are summarised in **Tables 2.2, 2.3** and **2.4** with reference to the waste flow tables prepared by the Contractor. General refuse and marine sediment, and inert C&D materials (public fill) were generated under FEP-02/558/2018/A and FEP-03/558/2018/A, respectively, in the reporting period. Detailed waste flow tables can be referred to *Annex F of the associated Monthly EM&A Reports* for the reporting period.

Table 2.2 Quantities of Waste Generated for FEP-01/558/2018/A

| Inert C&D Materials Generated (in '000kg) | | | | | | |
|---|--------------------------|-------------------------------------|------------------------|--------------------------|-------------------------|---------------|
| Month/Year | Total Quantity Generated | Hard Rock and Large Broken Concrete | Reused in the Contract | Reused in other Projects | Disposed as Public Fill | Imported Fill |
| Jan 2021 | 0 | 0 | 0 | 0 | 0 | 0 |
| Feb 2021 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mar 2021 | 0 | 0 | 0 | 0 | 0 | 0 |

| C&D Wastes Generated | | | | | | |
|----------------------|----------------------------------|---|------------------------------------|---------------------------|------------|---|
| Month/Year | Metals (in '000kg ³) | Paper / Cardboard Packaging (in '000kg ³) | Plastics (in '000kg ³) | Chemical Waste | | Other (e.g. general refuse) (in '000kg) |
| | | | | (in '000kg ³) | (in '000L) | |
| Jan 2021 | 0 | 0 | 0 | 0 | 0 | 0 |
| Feb 2021 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mar 2021 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 2.3 Quantities of Waste and Marine Sediment Generated for FEP-02/558/2018/A

| Inert C&D Materials Generated (in '000kg) | | | | | | |
|--|---------------------------------|--|-------------------------------|---------------------------------|--------------------------------|----------------------|
| Month/Year | Total Quantity Generated | Hard Rock and Large Broken Concrete | Reused in the Contract | Reused in other Projects | Disposed as Public Fill | Imported Fill |
| Jan 2021 | 0 | 0 | 0 | 0 | 0 | 0 |
| Feb 2021 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mar 2021 | 0 | 0 | 0 | 0 | 0 | 0 |

| C&D Wastes Generated | | | | | | |
|---------------------------------|---------------------------------------|--|---|--------------------------------|-------------------|--|
| Month/Year | Metals (in '000kg³) | Paper / Cardboard Packaging (in '000kg³) | Plastics (in '000kg³) | Chemical Waste | | Other (e.g. general refuse) (in '000kg) |
| | | | | (in '000kg³) | (in '000L) | |
| Jan 2021 | 0 | 0 | 0 | 0 | 0 | 26.930 |
| Feb 2021 | 0 | 0 | 0 | 0 | 0 | 21.500 |
| Mar 2021 | 0 | 0 | 0 | 0 | 0 | 26.230 |

| Marine Sediment Generated (in '000m³) | | | | |
|---|---|---|-------------------------------|---------------------------------|
| Month/Year | Total Quantity of Type L Generated | Total Quantity of Type M Generated | Reused in the Contract | Reused in other Projects |
| Jan 2021 | 0 | 0 | 0 | 0 |
| Feb 2021 | 4.388 | 0 | 0 | 0 |
| Mar 2021 | 0 | 0 | 0 | 0 |

Table 2.4 Quantities of Waste and Marine Sediment Generated for FEP-03/558/2018/A

| Inert C&D Materials Generated (in '000kg) | | | | | | |
|---|--------------------------|-------------------------------------|------------------------|--------------------------|-------------------------|---------------|
| Month/Year | Total Quantity Generated | Hard Rock and Large Broken Concrete | Reused in the Contract | Reused in other Projects | Disposed as Public Fill | Imported Fill |
| Jan 2021 | 244.400 | 0 | 0 | 0 | 244.400 | 0 |
| Feb 2021 | 605.040 | 0 | 0 | 0 | 605.040 | 0 |
| Mar 2021 | 1274.410 | 0 | 0 | 0 | 1274.410 | 0 |

| C&D Wastes Generated | | | | | | |
|----------------------|----------------------------------|---|------------------------------------|---------------------------|------------|---|
| Month/Year | Metals (in '000kg ³) | Paper / Cardboard Packaging (in '000kg ³) | Plastics (in '000kg ³) | Chemical Waste | | Other (e.g. general refuse) (in '000kg) |
| | | | | (in '000kg ³) | (in '000L) | |
| Jan 2021 | 0 | 0 | 0 | 0 | 0 | 0 |
| Feb 2021 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mar 2021 | 0 | 0 | 0 | 0 | 0 | 0 |

| Marine Sediment Generated (in '000m ³) | | | | |
|--|------------------------------------|------------------------------------|------------------------|--------------------------|
| Month/Year | Total Quantity of Type L Generated | Total Quantity of Type M Generated | Reused in the Contract | Reused in other Projects |
| Jan 2021 | 0 | 0 | 0 | 0 |
| Feb 2021 | 0 | 0 | 0 | 0 |
| Mar 2021 | 0 | 0 | 0 | 0 |

2.3 Marine Water Quality Monitoring

2.3.1 Monitoring Requirements

In accordance with the Updated EM&A Manual, marine water quality monitoring shall be undertaken at the monitoring stations as shown in **Figure 2.1** and **Table 2.5** three times a week at both mid-ebb and mid-flood tides during periods when there are dredging / jetting operations during construction phase of BPPS Pipeline or LPS Pipeline. The interval between two sets of monitoring would not be less than 36 hours. Two replicates of *in-situ* measurements and samples were collected at each monitored water depth of each monitoring stations. Levels of dissolved oxygen (DO), pH value, salinity, temperature and turbidity were measured *in-situ* whereas the level of suspended solids (SS) were determined by a HOKLAS accredited laboratory. The detailed methodology is presented in the Updated EM&A Manual.

Table 2.5 Location of Marine Water Quality Monitoring Stations

| Station | Easting | Northing | Description |
|---|---------|----------|---|
| Group 1 – During construction at the pipeline shore approach at LPS (KP17.4 - 18.2), West Lamma Channel (KP14.5 - 17.4) | | | |
| IM1 | 829453 | 806896 | Impact Station for Coastline of South Lamma |
| IM2 | 828235 | 810347 | Impact Station for Coastline of North Lamma |
| E1 | 827317 | 811510 | Control Station for Ebb Tide |
| F1 | 827892 | 804243 | Control Station for Flood Tide |
| Group 2 – During construction at the Double Berth Jetty to West Lamma Channel (KP0.0 - 14.5) | | | |
| IM3 | 820683 | 805931 | Impact Station for Coastline of South Cheung Chau |
| IM4 | 816997 | 805153 | Impact Station for Coastline of South Shek Kwu Chau |
| IM5 | 814068 | 804100 | Boundary of Proposed South Lantau Marine Park (MP) |
| IM6 | 814073 | 802029 | Boundary of Proposed South Lantau MP |
| E2 | 813367 | 808213 | Control Station for Ebb Tide |
| F2 | 822532 | 802161 | Control Station for Flood Tide |
| F3 | 815032 | 801161 | Control Station for Flood Tide |
| Group 3 – During construction at the Jetty Approach (KP0.0 - 5.0), South of Soko Islands (KP5.0 - 8.9), Southwest of Soko Islands (KP8.9 - 12.1) | | | |
| IM6 | 814073 | 802029 | Boundary of Proposed South Lantau MP |
| IM7 | 811652 | 802029 | Boundary of Proposed South Lantau MP |
| IM8 | 810833 | 801430 | Boundary of Proposed South Lantau MP |
| IM9 | 807101 | 801595 | Boundary of Proposed South Lantau MP |
| E3 | 802686 | 804123 | Control Station for Ebb Tide |
| F3 | 815032 | 801161 | Control Station for Flood Tide |
| Group 4 – During construction at the Adamasta Channel (KP12.1 - 15.6), Southwest Lantau (KP15.6 - 21.3) | | | |
| IM10 | 803145 | 806407 | Boundary of Southwest Lantau MP |
| IM11A | 801914 | 806510 | Boundary of Southwest Lantau MP |
| IM12 | 801041 | 807024 | Boundary of Southwest Lantau MP |
| IM13 | 800386 | 810750 | Boundary of Southwest Lantau MP |
| IM14 | 801376 | 810750 | Boundary of Southwest Lantau MP |
| E4 | 801571 | 811923 | Control Station for Ebb Tide |
| F4 | 809058 | 806567 | Control Station for Flood Tide |
| Group 5 – During construction at the West of Tai O to West of HKIA (KP21.3 - 31.5) | | | |
| IM15 | 804820 | 821110 | Boundary of Sha Chau and Lung Kwu Chau MP |
| E5 | 804634 | 822606 | Control Station for Ebb Tide |
| F5 | 805185 | 816591 | Control Station for Flood Tide |
| Group 6 – During construction at the West of HKIA to Lung Kwu Chau (KP31.5 - 37.5) | | | |
| IM15 | 804820 | 821110 | Boundary of Sha Chau and Lung Kwu Chau MP |
| IM17 | 804865 | 827855 | Boundary of Sha Chau and Lung Kwu Chau MP |
| IM16A | 805039 | 824343 | Coral Colonies at Pak Chau |
| E6 | 805418 | 832113 | Control Station for Ebb Tide |
| F5 | 805185 | 816591 | Control Station for Flood Tide |
| Group 7 – During construction at the Lung Kwu Chau to Urmston Anchorage (37.5 - 41.1), Urmston Road (KP41.1 - 42.9) | | | |
| IM17 | 804865 | 827855 | Boundary of Sha Chau and Lung Kwu Chau MP |
| IM18 | 806220 | 827890 | Boundary of Sha Chau and Lung Kwu Chau MP |
| IM19 | 807274 | 829250 | Impact Station for Coastline of Lung Kwu Tan |
| E6 | 805418 | 832113 | Control Station for Ebb Tide |
| F6 | 808812 | 824266 | Control Station for Flood Tide |
| E5 | 804634 | 822606 | Control Station for Flood Tide |
| Group 8 – During construction at the West of BPPS (KP42.9 - 44.9), Pipeline shore approach at BPPS (KP44.9 - 45.0) | | | |

| Station | Easting | Northing | Description |
|---------|---------|----------|--|
| IM19 | 807274 | 829250 | Impact Station for Coastline of Lung Kwu Tan |
| IM20A | 809445 | 831728 | Impact Station for Coastline of Deep Bay |
| IM21A | 808879 | 830900 | Coral Colony at Artificial Seawall at BPPS |
| IM22A | 808703 | 830717 | Coral Colony at Artificial Seawall at BPPS |
| E7A | 808313 | 833524 | Control Station for Ebb Tide |
| F6 | 808812 | 824266 | Control Station for Flood Tide |

Note: Alternative monitoring stations (E7A, IM11A, IM16A, IM20A, IM21A & IM22A) were proposed by the ET in consultation with the IEC and approved by EPD in accordance with the provision in Section 5.1 and Section 5.2.5 of the Updated EM&A Manual.

2.3.2 Action and Limit Levels for Marine Water Quality Monitoring

The Action and Limit Levels for marine water quality monitoring have been established based on the baseline marine water quality monitoring data in accordance with the Updated EM&A Manual. Action and Limit Levels of key assessment parameters for construction phase marine water quality monitoring including DO, turbidity and SS are summarised in **Table 2.6**.

Table 2.6 Action and Limit Levels for Marine Water Quality Monitoring

| Parameter | Action Level | Limit Level |
|---|--|--|
| Group 1 – During construction at the pipeline shore approach at LPS (KP17.4 - 18.2), West Lamma Channel (KP14.5 - 17.4) | | |
| DO in mg L ⁻¹ ^a | <u>Surface and Middle</u> 4.2 mg L ⁻¹ | <u>Surface and Middle</u> 2.9 mg L ⁻¹ |
| | <u>Bottom</u> 2.4 mg L ⁻¹ | <u>Bottom</u> 1.6 mg L ⁻¹ |
| Turbidity in NTU (Depth-averaged ^b) ^c | 14.4 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day | 19.9 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day |
| SS in mg L ⁻¹ (Depth-averaged ^b) ^c | 20.8 mg L ⁻¹ , and 120% of the relevant control station's SS at the same tide of the same day | 29.6 mg L ⁻¹ , and 130% of the relevant control station's SS at the same tide of the same day |
| Group 2 – During construction at the Double Berth Jetty to West Lamma Channel (KP0.0 - 14.5) | | |
| DO in mg L ⁻¹ ^a | <u>Surface and Middle</u> 3.4 mg L ⁻¹ | <u>Surface and Middle</u> 2.4 mg L ⁻¹ |
| | <u>Bottom</u> 1.8 mg L ⁻¹ | <u>Bottom</u> 1.4 mg L ⁻¹ |
| Turbidity in NTU (Depth-averaged ^b) ^c | 17.1 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day | 26.8 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day |
| SS in mg L ⁻¹ (Depth-averaged ^b) ^c | 25.7 mg L ⁻¹ , and 120% of the relevant control station's SS at the same tide of the same day | 37.1 mg L ⁻¹ , and 130% of the relevant control station's SS at the same tide of the same day |
| Group 3 – During construction at the Jetty Approach (KP0.0 - 5.0), South of Soko Islands (KP5.0 - 8.9), Southwest of Soko Islands (KP8.9 - 12.1) | | |
| DO in mg L ⁻¹ ^a | <u>Surface and Middle</u> 4.1 mg L ⁻¹ | <u>Surface and Middle</u> 3.0 mg L ⁻¹ |
| | <u>Bottom</u> 2.7 mg L ⁻¹ | <u>Bottom</u> 2.0 mg L ⁻¹ |
| Turbidity in NTU (Depth-averaged ^b) ^c | 17.0 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day | 30.9 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day |

| Parameter | Action Level | Limit Level |
|--|--|---|
| SS in mg L ⁻¹ (Depth-averaged) ^{b) c)} | 22.3 mg L ⁻¹ , and 120% of the relevant control station's SS at the same tide of the same day | 36.9 mg L ⁻¹ , and 130% of the relevant control station's SS at the same tide of the same day |
| Group 4 – During construction at the Adamasta Channel (KP12.1 - 15.6), Southwest Lantau (KP15.6 - 21.3) | | |
| DO in mg L ^{-1 a)} | <u>Surface and Middle</u> 3.4 mg L ⁻¹ | <u>Surface and Middle</u> 2.5 mg L ⁻¹ |
| | <u>Bottom</u> 2.8 mg L ⁻¹ | <u>Bottom</u> 2.0 mg L ⁻¹ |
| Turbidity in NTU (Depth-averaged) ^{b) c)} | 63.1 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day | 165.7 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day |
| SS in mg L ⁻¹ (Depth-averaged) ^{b) c)} | 75.4 mg L ⁻¹ , and 120% of the relevant control station's SS at the same tide of the same day | 121.8 mg L ⁻¹ , and 130% of the relevant control station's SS at the same tide of the same day |
| Group 5 – During construction at the West of Tai O to West of HKIA (KP21.3 - 31.5) | | |
| DO in mg L ^{-1 a)} | <u>Surface and Middle</u> 4.6 mg L ⁻¹ | <u>Surface and Middle</u> 4.0 mg L ⁻¹ |
| | <u>Bottom</u> 4.0 mg L ⁻¹ | <u>Bottom</u> 2.0 mg L ⁻¹ |
| Turbidity in NTU (Depth-averaged) ^{b) c)} | 31.9 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day | 46.6 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day |
| SS in mg L ⁻¹ (Depth-averaged) ^{b) c)} | 64.9 mg L ⁻¹ , and 120% of the relevant control station's SS at the same tide of the same day | 72.5 mg L ⁻¹ , and 130% of the relevant control station's SS at the same tide of the same day |
| Group 6 – During construction at the West of HKIA to Lung Kwu Chau (KP31.5 - 37.5) | | |
| DO in mg L ^{-1 a)} | <u>Surface and Middle</u> 4.4 mg L ⁻¹ | <u>Surface and Middle</u> 3.9 mg L ⁻¹ |
| | <u>Bottom</u> 3.9 mg L ⁻¹ | <u>Bottom</u> 2.0 mg L ⁻¹ |
| Turbidity in NTU (Depth-averaged) ^{b) c)} | 30.7 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day | 47.0 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day |
| SS in mg L ⁻¹ (Depth-averaged) ^{b) c)} | 49.2 mg L ⁻¹ , and 120% of the relevant control station's SS at the same tide of the same day | 74.0 mg L ⁻¹ , and 130% of the relevant control station's SS at the same tide of the same day |
| Group 7 – During construction at the Lung Kwu Chau to Urmston Anchorage (37.5 - 41.1), Urmston Road (KP41.1 - 42.9) | | |
| DO in mg L ^{-1 a)} | <u>Surface and Middle</u> 3.8 mg L ⁻¹ | <u>Surface and Middle</u> 3.4 mg L ⁻¹ |
| | <u>Bottom</u> 3.1 mg L ⁻¹ | <u>Bottom</u> 2.0 mg L ⁻¹ |
| Turbidity in NTU (Depth-averaged) ^{b) c)} | 34.5 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day | 79.2 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day |
| SS in mg L ⁻¹ (Depth-averaged) ^{b) c)} | 37.8 mg L ⁻¹ , and 120% of the relevant control station's SS at the same tide of the same day | 98.2 mg L ⁻¹ , and 130% of the relevant control station's SS at the same tide of the same day |
| Group 8 – During construction at the West of BPPS (KP42.9 - 44.9), Pipeline shore approach at BPPS (KP44.9 - 45.0) | | |

| Parameter | Action Level | Limit Level |
|---|--|--|
| DO in mg L ⁻¹ ^a | <u>Surface and Middle</u> 4.3 mg L ⁻¹ | <u>Surface and Middle</u> 3.4 mg L ⁻¹ |
| | <u>Bottom</u> 3.6 mg L ⁻¹ | <u>Bottom</u> 2.0 mg L ⁻¹ |
| Turbidity in NTU (Depth-averaged ^b) ^c | 34.3 NTU, and 120% of the relevant control station's turbidity at the same tide of the same day | 58.5 NTU, and 130% of the relevant control station's turbidity at the same tide of the same day |
| SS in mg L ⁻¹ (Depth-averaged ^b) ^c | 42.4 mg L ⁻¹ , and 120% of the relevant control station's SS at the same tide of the same day | 78.2 mg L ⁻¹ , and 130% of the relevant control station's SS at the same tide of the same day |

Notes:

- a. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
- b. "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
- c. For Turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

The Event and Action Plan for marine water quality monitoring can be referred to *the Updated EM&A Manual*.

2.3.3 Monitoring Results

A total of 13 monitoring events for construction phase marine water quality monitoring were conducted for construction of LPS Pipeline within the works area(s) for the associated marine-based activities in the reporting period. Graphical presentations are provided in **Annex F**. There were no breaches of Action and Limit Levels for marine water quality monitoring in the reporting period.

2.4 Pilot Test on the Efficiency of Silt Curtain System

2.4.1 Monitoring Requirements

According to Condition 2.10 of FEP-02/558/2018/A and FEP-03/558/2018/A, and Section 5.3.2 of the Updated EM&A Manual, pilot tests on the efficiency of silt curtain system shall be conducted during the early stage of construction to confirm the removal efficiency of the silt curtains. The pilot tests on the efficiency of silt curtain system include i) testing of silt removal efficiency of 75% or higher for silt curtain at grab dredger; ii) testing of silt removal efficiency of 85% or higher for silt curtain at jetting machine; and iii) testing of silt removal efficiency of 80% or higher for double layer silt curtain at sensitive receivers, as determined by the difference between the SS levels near marine works area and that outside silt curtain in the event of the dredging / jetting operations being actively undertaken for BPPS Pipeline and/or LPS Pipeline. The detailed methodology of the pilot tests on the efficiency of silt curtain system is presented in the approved Silt Curtain Deployment Plans for the corresponding FEPs.

2.4.2 Monitoring Results

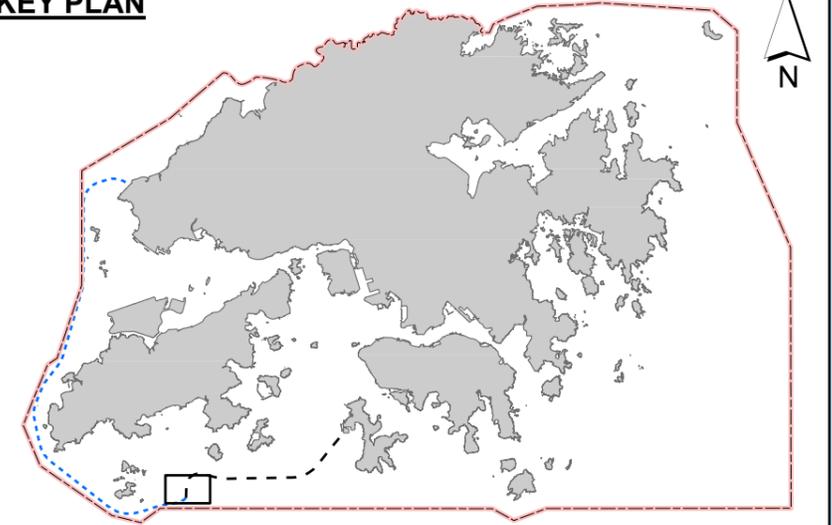
Pilot test on the efficiency of cage-type silt curtain at grab dredger was conducted on 2 February 2021 while dredging operation for construction of LPS Pipeline was undertaken on 1, 2 and 4 February 2021 and completed on 4 February 2021. Three rounds of monitoring (i.e. Rounds 1, 2 & 3) for the pilot test covering ebb and flood tides were conducted when dredging operation was operated at or close to the maximum productivity for LPS Pipeline. The dredging work rate ranged from 230 – 255 m³/hr, which is equivalent to 5,520 – 6,120 m³/day for 24 hours work. The monitoring stations for the pilot test are presented in **Figure 2.2**.

The results of the pilot test have demonstrated that the tested cage-type silt curtain for dredging operation is capable of achieving an efficiency greater than 75% as assumed in the approved EIA Report for the HKOLNG Terminal project. As such, the proposed cage-type silt curtain is effective for the dredging operation for the Project to minimize water quality impacts and no further

Legend

- ⋯ Proposed Route of BPPS Pipeline
- Proposed Route of LPS Pipeline
- Monitoring Locations for Silt Curtain Pilot Test
- Cage-type Silt Curtain
- Boundary of HKSAR

KEY PLAN



Coordinates of Monitoring Stations

| Position | Easting | Northing |
|----------|-----------|-----------|
| A1 | 814188.60 | 802071.00 |
| B1 | 814155.21 | 802115.87 |
| B2 | 814246.59 | 802074.45 |
| B3 | 814231.89 | 802017.91 |
| B4 | 814117.20 | 802067.40 |

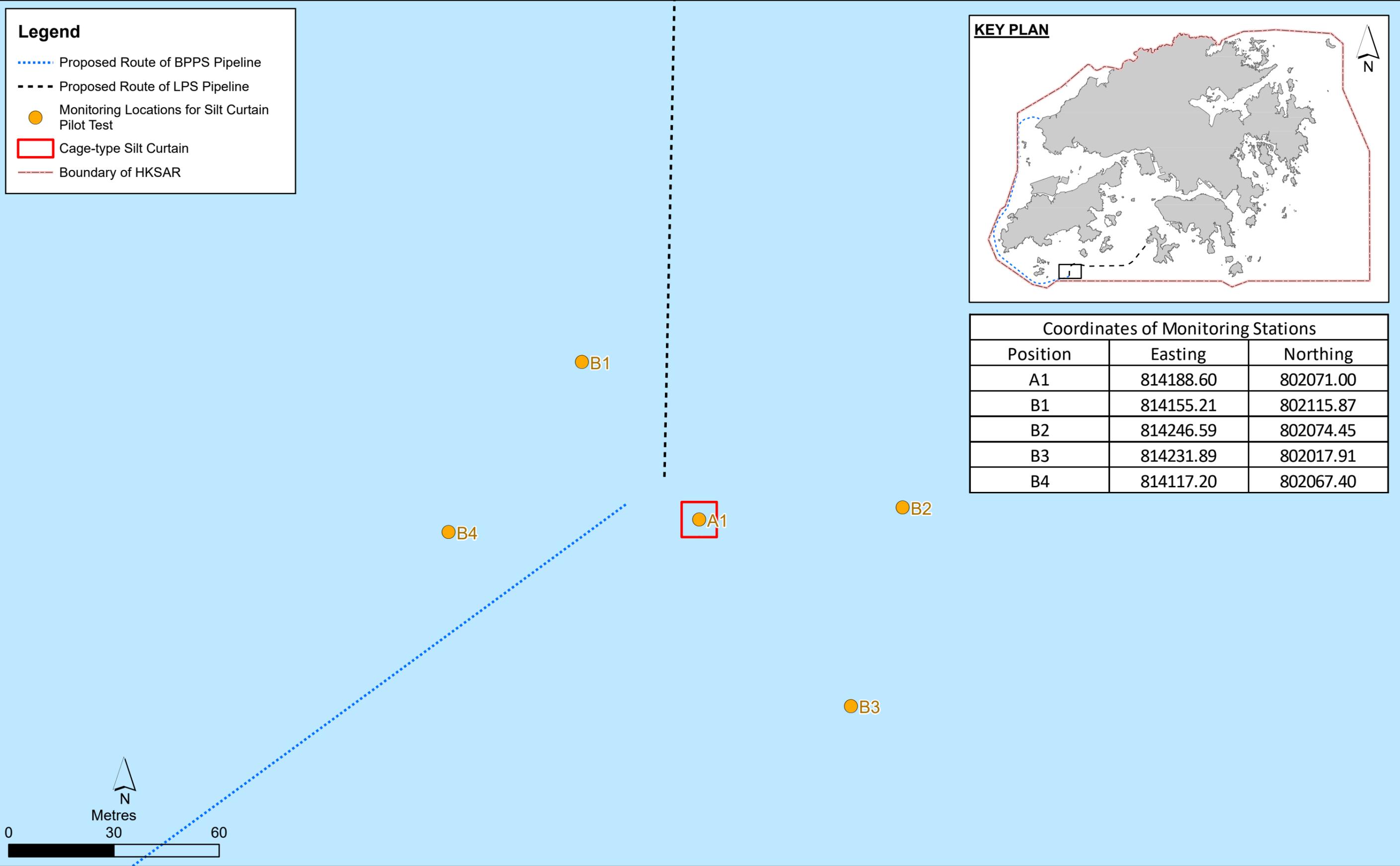


Figure 2.2

Monitoring Locations for Silt Curtain Pilot Test for Dredging Operation

measures/recommendations are required. The detailed monitoring results can be referred to *Sections 2.4 of the Monthly EM&A Report for February 2021*.

2.5 Marine Mammal Exclusion Zone Monitoring

2.5.1 Monitoring Requirements

According to Condition 3.7 of FEP-02/558/2018/A, Condition 3.8 of FEP-03/558/2018/A, Section 9.11.3 of the approved EIA Report and Section 7 of the Updated EM&A Manual, marine mammal exclusion zone monitoring with 250 m radius is required during the course of dredging / jetting operations for construction of BPPS Pipeline or LPS Pipeline. Marine mammal exclusion zone requirements for marine dredging / jetting operations for construction of BPPS Pipeline or LPS Pipeline are presented in **Table 2.7**.

Table 2.7 Marine Mammal Exclusion Zone Requirements

| Activity | Exclusion Zone | Requirement |
|---------------------------------------|----------------|--|
| Marine dredging or jetting operations | 250m | Before pipeline dredging or jetting commence, the exclusion zone must have been continuously clear of marine mammals for 30 minutes. During pipeline dredging/ jetting, if marine mammals are spotted within the exclusion zone, pipeline dredging/ jetting works will cease and will not resume until the observer confirms that the zone has been continuously clear of marine mammals for a period of 30 minutes. |

2.5.2 Monitoring Results

Marine mammal exclusion zone monitoring with 250 m radius was undertaken during the reporting period when marine dredging / jetting operations for construction of LPS Pipeline was conducted. No sightings of marine mammals were observed during marine mammal exclusion zone monitoring in the reporting period. The monitoring results for marine mammal exclusion zone monitoring in the reporting period is summarised in **Table 2.8**.

Table 2.8 Monitoring Results for Marine Mammal Exclusion Zone Monitoring

| Date | Active works activities | Monitoring results |
|-------------|---|--------------------------------|
| 27 Jan 2021 | Marine dredging operation for LPS Pipeline (Note 1) | No sightings of marine mammals |
| 01 Feb 2021 | | |
| 02 Feb 2021 | | |
| 04 Feb 2021 | | |
| 23 Feb 2021 | De-burial (pre-trenching) of pre-installed pipeline by Mass Flow Excavator for LPS Pipeline | |
| 26 Feb 2021 | | |
| 27 Feb 2021 | | |
| 05 Mar 2021 | | |
| 06 Mar 2021 | | |
| 13 Mar 2021 | | |
| 14 Mar 2021 | | |
| 15 Mar 2021 | | |

Note:

(1) Pre-trenching works was not undertaken on 27 January 2021 due to adverse weather and malfunction of the grab dredger.

2.6 Records of Operating Speeds and Marine Travel Routes of Working Vessels

The operating speeds and marine travel routes of working vessels for construction of the Project within the reporting period were checked and reviewed. A total of 16 working vessels were used for the construction of LPS Pipeline under FEP-02/558/2018/A during the reporting period. All these

working vessels were operated at a speed lower than 10 knots when moving within the areas frequented by marine mammals, including the waters near Sha Chau and Lung Kwu Chau Marine Park, the waters at the west of Lantau Island and the waters between Soko Islands and Shek Kwu Chau, and followed the relevant marine travel requirements stipulated in the FEP. No non-compliance on the operating speeds and marine travel routes of working vessels was identified. Records of operating speeds and marine travel routes of working vessels for construction of the Project provided by the Contractor can be referred to the *relevant Annexes of the associated Monthly EM&A Reports* for the reporting period.

The compliance status on approval conditions given by the Director of Environmental Protection for the entry of working vessels (i.e. anchor handling tugs (AHTs)) within the proposed SLMP in pursuant to Condition 3.4 of FEP-02/558/2018/A for anchoring activities for (i) pipelaying process and (ii) riser stalk-on installation process for the construction of LPS Pipeline within the reporting period was checked. A total of two AHTs with six entries to the proposed SLMP were recorded within the reporting period. No non-compliance on the approval conditions was identified. Records of entry events of working vessels within the proposed SLMP for the construction of LPS Pipeline provided by the Contractor can be referred to *Annex N of the Monthly EM&A Report for March 2021*.

2.7 Implementation Status of Environmental Mitigation Measures

A summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in **Annex C**. The necessary mitigation measures were implemented properly for the Project.

2.8 Summary of Exceedances of the Environmental Quality Performance Limit

There were no breaches of Action and Limit Levels for marine water quality monitoring in the reporting period.

Since there were no construction activities conducted in the reporting period requiring impact monitoring of marine mammal in accordance with the Updated EM&A Manual, there were no breaches of Action and Limit Levels for marine mammal monitoring in the reporting period.

Cumulative statistics on exceedance is provided in **Annex E**.

2.9 Summary of Environmental Complaints, Notification of Summons and Successful Prosecutions

There were no environmental complaints, notification of summons and successful prosecutions recorded in the reporting period.

Statistics on environmental complaints, notification of summons and successful prosecutions are summarised in **Annex E**.

3. CONCLUSION AND RECOMMENDATIONS

This Quarterly EM&A Summary Report presents the key findings of the EM&A works during the reporting period from 1 January to 31 March 2021 for the construction works for the Project in accordance with the Updated EM&A Manual and the requirements of the Further Environmental Permits (FEP-01/558/2018/A, FEP-02/558/2018/A & FEP-03/558/2018/A).

Environmental auditing works, including regular site inspections of construction works conducted by the ET, audit of implementation of Waste Management Plan, and review of the acceptability of operating speeds and marine travel routes of working vessels, including checking of compliance with the approval conditions given by EPD for allowing the entry of working vessels within the proposed SLMP in pursuant to Condition 3.4 of FEP-02/558/2018/A, were conducted in the reporting period. No non-compliance of environmental statutory requirements was identified.

Marine water quality monitoring was conducted during the reporting period in accordance with the Updated EM&A Manual. No breaches of Action and Limit Levels were recorded.

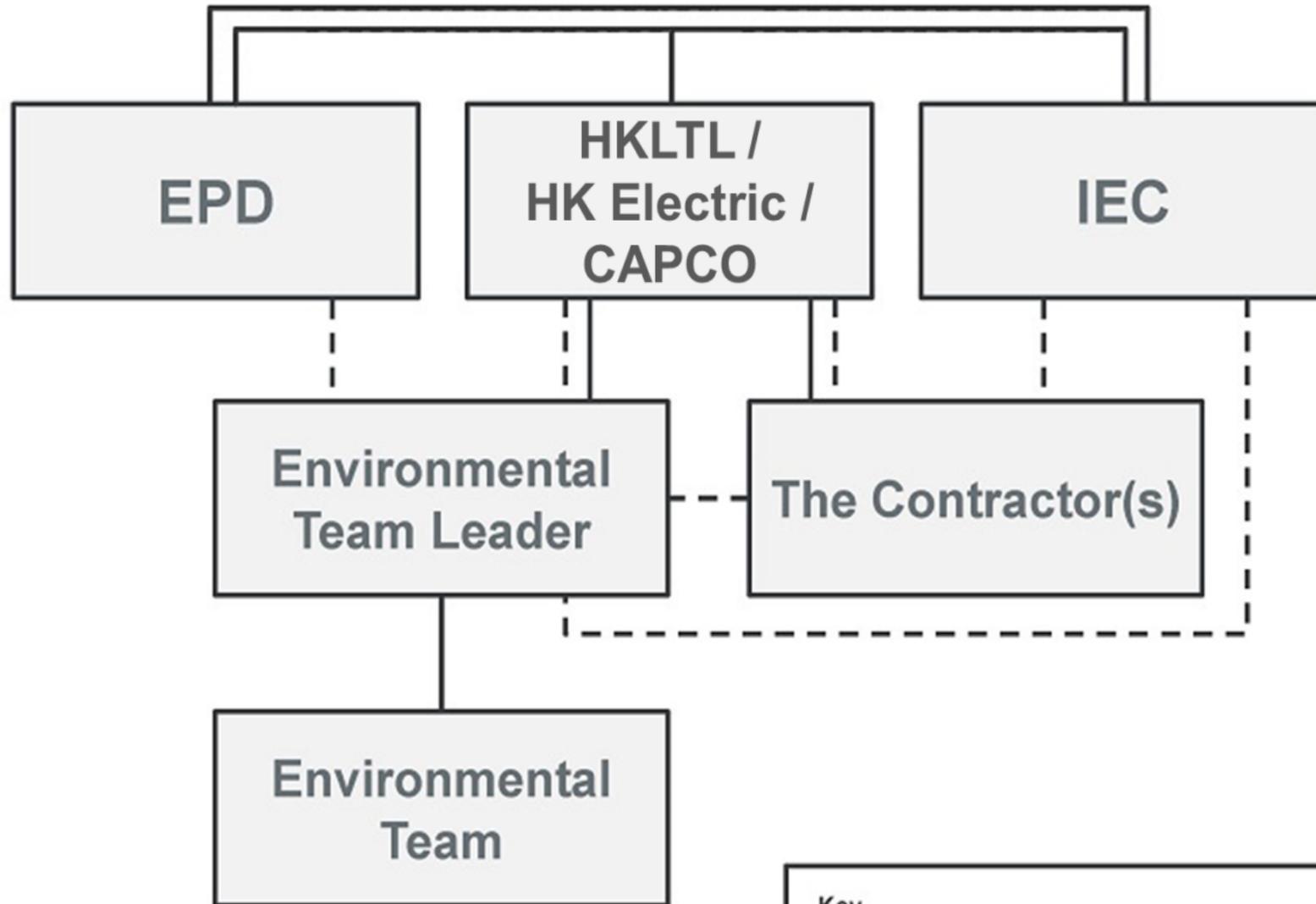
Pilot test on the efficiency of silt curtain system (cage-type silt curtain for dredging operation) was conducted during the reporting period in accordance with the approved Silt Curtain Deployment Plan. The results of the pilot test have demonstrated that the tested cage-type silt curtain for dredging operation is capable of achieving an efficiency greater than 75% as assumed in the approved EIA Report for the HKOLNG Terminal project. As such, the proposed cage-type silt curtain is effective for the dredging operation for the Project to minimize water quality impacts and no further measures/recommendations are required.

There were no environmental complaints, notification of summons and successful prosecutions recorded in the reporting period.

The recommended environmental mitigation measures for the Project were effectively implemented and the EM&A programme undertaken by the ET has effectively monitored the construction activities as well as ensured proper implementation of mitigation measures in the reporting period.

ANNEX A

PROJECT ORGANISATION



Key

— Formal Communication Channel

- - - Line of Management Responsibility

ANNEX B

CONSTRUCTION PROGRAMME

Schedule of Works associated with the double berth jetty at LNG Terminal

| WORK | Q3 2020 | Q4 2020 | Q1 2021 | Q2 2021 | Q3 2021 | Q4 2021 | Q1 2022 |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|
| Preparation Phase | | | | | | | |
| Pre-survey | ■ | | | | | | |
| Construction Phase | | | | | | | |
| Jacket Installation | | ■ | | | ■ | | |
| Topsides Construction | | | | | | ■ | |

Schedule of the works associated with the subsea gas pipeline for Lamma Power Station (LPS) and the associated Gas Receiving Station (GRS) in LPS

| WORK | Q3 2020 | Q4 2020 | Q1 2021 | Q2 2021 | Q3 2021 | Q4 2021 |
|--|---------|---------|---------|---------|---------|---------|
| Preparation Phase | | | | | | |
| Pre-survey | | | | | | |
| Removal of obstructions | | | | | | |
| Construction Phase | | | | | | |
| Pre-trenching including Deployment of Silt Curtain and Pilot Test | | | | | | |
| De-burial of pre-installed pipeline by Mass Flow Excavator | | | | | | |
| Pipeline Laying | | | | | | |
| Intermediate Hydrotesting for Pipeline | | | | | | |
| Post-trenching including Deployment of Silt Curtain and Pilot Test | | | | | | |
| Rock Armour Placement | | | | | | |
| Final Hydrotesting for Pipeline | | | | | | |
| Gas Receiving Station (GRS) including pipe rack construction, preparation works at the vent header for tie-in of the new GRS, fencing, new gas receiving facility and new pipeline connection, and pre-commissioning, commissioning and start up | | | | | | |

Remarks:
Pilot tests on the efficiency of silt curtain system shall be conducted during the early stage of construction to confirm the removal efficiency of the silt curtains.

Schedule of the works associated with the subsea gas pipeline for Black Point Power Station (BPPS) and the associated Gas Receiving Station (GRS) in BPPS

| WORK | Q3 2020 | Q4 2020 | Q1 2021 | Q2 2021 | Q3 2021 | Q4 2021 | Q1 2022 | Q2 2022 |
|--|---------|---------|---------|---------|---------|---------|---------|---------|
| Preparation Phase | | | | | | | | |
| Pre-survey | | | | | | | | |
| Removal of obstructions | | | | | | | | |
| Construction Phase | | | | | | | | |
| Pre-trenching including Deployment of Silt Curtain and Pilot Test | | | | | | | | |
| Cofferdam and Sheet Pile Construction | | | | | | | | |
| Pipeline Laying | | | | | | | | |
| Post-trenching including Deployment of Silt Curtain and Pilot Test | | | | | | | | |
| Rock Armour Placement | | | | | | | | |
| Intermediate and Final Hydrotesting for Pipeline | | | | | | | | |
| Gas Receiving Station (GRS) including pipe rack construction, preparation works at the vent header for tie-in of the new GRS, fencing, new gas receiving facility and new pipeline connection, and pre-commissioning, commissioning and start up | | | | | | | | |
| Remarks: Pilot tests on the efficiency of silt curtain system shall be conducted during the early stage of construction to confirm the removal efficiency of the silt curtains. | | | | | | | | |

ANNEX C

ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

TABLE C.1 IMPLEMENTATION SCHEDULE OF RECOMMENDED MITIGATION MEASURES

| EIA Reference | EM&A Reference | Recommended Environmental Protection Measures/ Mitigation Measures | Location/ duration of recommended measures & timing of completion of recommended measures | Implementation Agent | Implementation Stage ⁽¹⁾ | | | Relevant Legislation & Guidelines | Implementation Status |
|--------------------|----------------|--|---|----------------------|-------------------------------------|---|---|---|---|
| | | | | | D | C | O | | |
| Air Quality | | | | | | | | | |
| S4.10.1 | S2.1 | Impervious sheet will be provided for skip hoist for material transport. | Land sites for GRSS within BPPS and LPS / During construction, particularly dry season | Contractor(s) | | ✓ | | <i>Air Pollution Control (Construction Dust) Regulation</i> | ✓ for GRS in BPPS N/A for GRS in LPS |
| S4.10.1 | S2.1 | 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 sites for GRSS within BPPS and LPS / During construction | Contractor(s) | | ✓ | | <i>Air Pollution Control (Construction Dust) Regulation</i> | ✓ for GRS in BPPS N/A for GRS in LPS |
| S4.10.1 | S2.1 | All dusty materials should be sprayed with water or a dust suppression chemical immediately prior to any loading, unloading or transfer operation. | Land sites for GRSS within BPPS and LPS / During construction | Contractor(s) | | ✓ | | <i>Air Pollution Control (Construction Dust) Regulation</i> | ✓ for GRS in BPPS N/A for GRS in LPS |
| S4.10.1 | S2.1 | Dropping heights for excavated materials should be controlled to a practical height to minimise the fugitive dust arising from unloading. | Land sites for GRSS within BPPS and LPS / During construction | Contractor(s) | | ✓ | | <i>Air Pollution Control (Construction Dust) Regulation</i> | N/A |

⁽¹⁾ D = Design Phase; C = Construction Phase; O = Operational Phase

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|---------------|----------------|--|---|----------------------|-------------------------------------|---|---|---|--|
| | | | | | D | C | O | | |
| S4.10.1 | S2.1 | 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 sites for GRSS within BPPS and LPS / During construction | Contractor(s) | | ✓ | | <i>Air Pollution Control (Construction Dust) Regulation</i> | N/A |
| S4.10.1 | S2.1 | 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 sites for GRSS within BPPS and LPS / During construction | Contractor(s) | | ✓ | | <i>Air Pollution Control (Construction Dust) Regulation</i> | A reminder was given for GRS in BPPS N/A for GRS in LPS |
| S4.10.1 | S2.1 | Road sections between vehicle-wash areas and vehicular entrance will be paved. | Land sites for GRSS within BPPS and LPS / During construction | Contractor(s) | | ✓ | | <i>Air Pollution Control (Construction Dust) Regulation</i> | N/A |
| S4.10.1 | S2.1 | 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 sites for GRSS within BPPS and LPS / During construction | Contractor(s) | | ✓ | | <i>Air Pollution Control (Construction Dust) Regulation</i> | An observation and a reminder were given for GRS in BPPS N/A for GRS in LPS |
| S4.10.1 | S2.1 | Temporary stockpiles of dusty materials will be either covered entirely by impervious sheets or | Land sites for GRSS within BPPS and | Contractor(s) | | ✓ | | <i>Air Pollution Control</i> | A reminder was given for GRS in BPPS |

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|---------------|----------------|---|---|-------------------------------------|-------------------------------------|---|---|--|---|
| | | | | | D | C | O | | |
| | | sprayed with water to maintain the entire surface wet all the time. | LPS / During construction | | | | | (Construction Dust) Regulation | N/A for GRS in LPS |
| S4.10.1 | S2.1 | Stockpiles of more than 20 bags of cement and dusty construction materials will be covered entirely by impervious sheeting sheltered on top and 3-sides. | Land sites for GRSS within BPPS and LPS / During construction | Contractor(s) | | ✓ | | Air Pollution Control (Construction Dust) Regulation | N/A |
| S4.10.1 | S2.1 | All exposed areas will be kept wet to minimise dust emission. | Land sites for GRSS within BPPS and LPS / During construction | Contractor(s) | | ✓ | | Air Pollution Control (Construction Dust) Regulation | ✓ for GRS in BPPS N/A for GRS in LPS |
| S4.10.1 | S2.1 | Ultra-low-sulphur diesel (ULSD), defined as diesel fuel containing not more than 0.005% sulphur by weight, will be used for all construction plant on-site. | Land sites for GRSS within BPPS and LPS / During construction/ During operation | Contractor(s) / CAPCO / HK Electric | | ✓ | ✓ | Environment, Transport and Works Bureau Technical Circular (ETWB-TC(W)) No 19/2005 on Environmental Management on Construction Sites | ✓ for GRS in BPPS N/A for GRS in LPS |
| S4.10.1 | S2.1 | The engine of the construction equipment during idling will be switched off. | Land sites for GRSS within BPPS and LPS / During construction | Contractor(s) | | ✓ | | Air Pollution Control (Construction Dust) Regulation | ✓ for GRS in BPPS N/A for GRS in LPS |

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|---------------|----------------|---|--|--|-------------------------------------|---|---|--|---|
| | | | | | D | C | O | | |
| S4.10.1 | S2.1 | Regular maintenance of construction equipment deployed on-site will be conducted to prevent black smoke emission. | Land sites for GRSS within BPPS and LPS / During construction | Contractor(s) | | ✓ | | <i>Air Pollution Control (Construction Dust) Regulation</i> | A reminder was given for marine-based works for LPS Pipeline ✓ for GRS in BPPS N/A for GRS in LPS |
| S4.10.1 | S2.1 | All marine vessels fuelled in Hong Kong are required to operate using marine light diesel with sulphur content lower than 0.05%. | Marine sites for the LNG Terminal, the BPPS Pipeline and the LPS Pipeline / During construction/ During operation | Contractor(s) / Project Proponents | | ✓ | ✓ | <i>Air Pollution Control (Marine Light Diesel) Regulation</i> | ✓ for LPS Pipeline N/A for BPPS Pipeline and LNG Terminal |
| S4.10.1 | S2.1 | Non-road mobile machinery (NRMMs), e.g. mobile generator and air compressor, shall comply with the prescribed emission standards and approved with a proper label by EPD. | Land sites for GRSSs within BPPS and LPS and marine sites for the LNG Terminal, the BPPS Pipeline and the LPS Pipeline / During construction | Contractor(s) | | ✓ | | <i>Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation</i> | An observation was given for GRS in BPPS N/A for GRS in LPS, LNG Terminal and BPPS and LPS Pipelines |
| S4.10.1 | S2.1 | To ensure proper implementation of the recommended dust mitigation measures and good construction site practices during | Land sites for GRSSs within BPPS and | Contractor(s)/ Environmental Team (ET) & Independent | | ✓ | | - | ✓ for GRS in BPPS |

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| | | | | | D | C | O | | |
| | | the construction phase of the GRSs and the BPPS and the LPS, environmental site audits on monthly basis is recommended throughout the construction period. | LPS / During construction | Environmental Checker (IEC) | | | | | N/A for GRS in LPS |
| S4.10.2 | S2.2 | LNGCs shall comply with the fuel restriction requirement under the <i>Air Pollution Control (Ocean Going Vessels) (Fuel at berth) Regulation</i> . | Marine site for the LNG Terminal / During operation | HKLTL | | | ✓ | <i>Air Pollution Control (Ocean Going Vessels) (Fuel at berth) Regulation</i> | N/A |
| Hazard to Life | | | | | | | | | |
| S5.3.3 | S3 | All personnel within the BPPS shall comply with CLP safety policy and requirements. | Land site for the GRS within BPPS / During construction / During operation | Contractor(s) / CAPCO | | ✓ | ✓ | - | ✓ |
| S5.3.3 | S3 | All personnel within the LPS shall comply with HK Electric safety policy and requirements. | Land site for the GRS within LPS / During construction / During operation | Contractor(s) / HK Electric | | ✓ | ✓ | - | N/A |
| S5.3.3 | S3 | All operation work procedures shall be complied with the operating plant procedures or guidelines and regulatory requirements. | Land sites for GRSs within BPPS and LPS / During construction / During operation | Contractor(s) / CAPCO / HK Electric | | ✓ | ✓ | - | ✓ for GRS in BPPS N/A for GRS in LPS |

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| | | | | | D | C | O | | |
| S5.3.3 | S3 | All personnel shall be equipped with appropriate personal protective equipment (PPE) when working at the BPPS and LPS facilities. | Land sites for GRSS within BPPS and LPS / During construction / During operation | Contractor(s) / CAPCO / HK Electric | | ✓ | ✓ | - | ✓ for GRS in BPPS N/A for GRS in LPS |
| S5.3.3 | S3 | Safety training and briefings shall be provided to all personnel. | Land sites for GRSS within BPPS and LPS / During construction / During operation | Contractor(s) / CAPCO / HK Electric | | ✓ | ✓ | - | ✓ for GRS in BPPS N/A for GRS in LPS |
| S5.3.3 | S3 | Regular site safety inspections/ audits shall be conducted. | Land sites for GRSS within BPPS and LPS / During construction/ During operation | Contractor(s) / CAPCO / HK Electric | | ✓ | ✓ | - | ✓ for GRS in BPPS N/A for GRS in LPS |
| S5.3.3 | S3 | Method statements and risk assessments shall be prepared and safety control measures shall be in place before commencement of work. | Land sites for GRSS within BPPS and LPS / During construction | Contractor(s) | | ✓ | | - | ✓ for GRS in BPPS N/A for GRS in LPS |
| S5.3.3 | S3 | Work permit system, on-site pre-work risk assessment and emergency response procedure shall be in place before commencement of work. | Land sites for GRSS within BPPS and LPS / During construction | Contractor(s) | | ✓ | | - | ✓ for GRS in BPPS N/A for GRS in LPS |

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|---------------|----------------|--|---|----------------------|-------------------------------------|---|---|-----------------------------------|---|
| | | | | | D | C | O | | |
| S5.3.3 | S3 | All construction workers shall be under close site supervision during the construction phase of the GRSSs. | Land sites for GRSSs within BPPS and LPS / During construction | Contractor(s) | | ✓ | | - | ✓ for GRSS in BPPS N/A for GRSS in LPS |
| S5.4.1 | S3 | An emergency response plan will be put in place which fully documents the procedures to be followed in the event of an emergency. | Transit of the LNGC and FSRU Vessel under Emergency Situation / During operation | HKLTL | | | ✓ | - | N/A |
| S5.3.3 | S3 | Method statements and risk assessments shall be prepared and safety control measures should be in place before the commencement of construction works. | LNG Terminal / During construction | Contractor(s) | | ✓ | | - | N/A |
| S5.3.3 | S3 | Work permit system, on-site pre-work risk assessment and emergency response procedure shall be in place before commencement of construction works. | LNG Terminal / During construction | Contractor(s) | | ✓ | | - | N/A |
| S5.3.3 | S3 | All construction workers shall be under close site supervision during the construction phase of the LNG Terminal. | LNG Terminal / During construction | Contractor(s) | | ✓ | | - | N/A |

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|---------------|----------------|--|---|----------------------|-------------------------------------|---|---|-----------------------------------|-----------------------|
| | | | | | D | C | O | | |
| S5.3.3 | S3 | All personnel within the LNG Terminal shall comply with relevant safety policy and requirements. | LNG Terminal / During operation | HKLTL | | | ✓ | - | N/A |
| S5.3.3 | S3 | All operation work procedures shall be complied with relevant codes and standards (e.g. SIGTTO) and regulatory requirements. | LNG Terminal / During operation | HKLTL | | | ✓ | - | N/A |
| S5.3.3 | S3 | Work permit system and emergency response procedure shall be in place. | LNG Terminal / During operation | HKLTL | | | ✓ | - | N/A |
| S5.3.3 | S3 | Robust and extended process control system, safety control system, fire-fighting system and security system shall be provided. | LNG Terminal / During operation | HKLTL | | | ✓ | - | N/A |
| S5.3.3 | S3 | Sufficient and trained / competent staff shall be provided to operate the LNG Terminal. | LNG Terminal / During operation | HKLTL | | | ✓ | - | N/A |
| S5.3.3 | S3 | Regular safety inspections/audits shall be conducted. | LNG Terminal / During operation | HKLTL | | | ✓ | - | N/A |
| Noise | | | | | | | | | |
| S6.7 | S4 | N/A | | | | | | | N/A |

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|----------------------|----------------|--|--|----------------------|-------------------------------------|---|---|--|---|
| | | | | | D | C | O | | |
| Water Quality | | | | | | | | | |
| S7.9.1 | S5 | A detailed hydrotesting procedure for subsea pipelines will be developed that will detail how the process will be carried out, how it will be carefully controlled and monitored, and how the intake and subsequent discharge of the seawater will be managed. Water quality monitoring for commissioning hydrotest for the subsea pipelines is presented in Section 5.3.5 of the Updated EM&A Manual. | LNG Terminal / During construction | Contractor(s) | | ✓ | | TM Standard under the WPCO, WPCO license requirements, WQO | N/A |
| S7.9.1 | S5 | Adoption of appropriate dredging and jetting rates, plant numbers and silt curtains at the plant and WSRs, where applicable (Table 7.18 of the EIA Report, reprovided as Table A.2 below). | Marine Dredging & Jetting for the BPPS Pipeline and the LPS Pipeline / During construction | Contractor(s) | | ✓ | | - | ✓ for LPS Pipeline N/A for BPPS Pipeline |
| S7.9.1 | S5 | Grab dredging can be conducted concurrently with one TSHD. | Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction | Contractor(s) | | ✓ | | - | N/A for BPPS Pipeline and LPS Pipeline |
| S7.9.1 | S5 | One jetting machine will be working on each pipeline. | Marine Jetting for the BPPS Pipeline and the LPS | Contractor(s) | | ✓ | | - | ✓ for LPS Pipeline |

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|-------------------|----------------|--|---|----------------------|-------------------------------------|---|---|-----------------------------------|---|
| | | | | | D | C | O | | |
| | | | Pipeline / During construction | | | | | N/A for BPPS Pipeline | |
| S7.9.1 | S5 | Cofferdam construction and removal at landfalls of BPPS and LPS (where required) should not be conducted concurrently with the nearby pipeline dredging sections (BPPS KP44.9 - 45.0 and LPS KP17.4-18.2). Silt curtain surrounding the works areas for cofferdam construction and removal at pipeline landfalls of the BPPS and the LPS should also be implemented. | Pipeline landfalls for the BPPS Pipeline and the LPS Pipeline / During construction | Contractor(s) | | ✓ | | - | N/A |
| S7.9.1/ S7.9.2 | S5 | The following measures shall be followed for provision of silt curtain: <ul style="list-style-type: none"> The silt curtain shall be formed and installed in such a way that tidal rise and fall are accommodated, with the silt curtains always extending from the surface to the bottom of the water column and held with anchor blocks. Schematic diagrams on silt curtain deployment are provided in Figures 7.4 and 7.5 of the EIA Report. | Marine Dredging & Jetting for the BPPS Pipeline and the LPS Pipeline / During construction Marine Maintenance Dredging (LNG Terminal) / During operation | Contractor(s) | | ✓ | ✓ | - | ✓ for LPS Pipeline N/A for BPPS Pipeline |

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|-----------------|----------------|---|--|----------------------|-------------------------------------|---|---|-----------------------------------|--|
| | | | | | D | C | O | | |
| | | <ul style="list-style-type: none"> 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 only be undertaken when the repair is fixed to the satisfaction of the engineer. | | | | | | | |
| S7.9.1 / S7.9.2 | S5 | All vessels should be well maintained and inspected before use to limit any potential discharges to the marine environment. | <p>Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction</p> <p>Marine Maintenance Dredging (LNG Terminal) / During operation</p> | Contractor(s) | | ✓ | ✓ | - | <p>✓ for LPS Pipeline</p> <p>N/A for BPPS Pipeline</p> |
| S7.9.1 | S5 | All vessels must have a clean ballast system. | Marine Dredging for the BPPS Pipeline and the LPS | Contractor(s) | | ✓ | | - | ✓ for LPS Pipeline |

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|-----------------|----------------|---|---|----------------------|-------------------------------------|---|---|-----------------------------------|---|
| | | | | | D | C | O | | |
| | | | Pipeline / During construction | | | | | | N/A for BPPS Pipeline |
| S7.9.1 / S7.9.2 | S5 | No overflow is permitted from the trailing suction hopper dredger and the Lean Mixture Overboard (LMOB) system will only be in operation at the beginning and end of the dredging cycle when the drag head is being lowered and raised. | Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction Marine Maintenance Dredging (LNG Terminal) / During operation | Contractor(s) | | ✓ | ✓ | - | ✓ for LPS Pipeline N/A for BPPS Pipeline |
| S7.9.1 / S7.9.2 | S5 | Dredged marine mud will be disposed of in a gazetted marine disposal area in accordance with the Dumping at Sea Ordinance (DASO) permit conditions. | Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction Marine Maintenance Dredging (LNG Terminal) / During operation | Contractor(s) | | ✓ | ✓ | - | N/A for LPS Pipeline N/A for BPPS Pipeline |
| S7.9.1 / S7.9.2 | S5 | Dredgers 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 | Marine Dredging for the BPPS Pipeline and the LPS | Contractor(s) | | ✓ | ✓ | - | A reminder was given for LPS Pipeline |

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|-----------------|----------------|--|---|----------------------|-------------------------------------|---|---|-----------------------------------|---|
| | | | | | D | C | O | | |
| | | not generated by turbulence from vessel movement or propeller wash. | Pipeline / During construction Marine Maintenance Dredging (LNG Terminal) / During operation | | | | | | N/A for BPPS Pipeline |
| S7.9.1 / S7.9.2 | S5 | Marine works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site. Wastewater from potentially contaminated area on working vessels should be minimised and collected. These kinds of wastewater should be brought back to port and discharged at appropriate collection and treatment system. | Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction / During operation | Contractor(s) | | ✓ | ✓ | - | ✓ for LPS Pipeline N/A for BPPS Pipeline |
| S7.9.1 / S7.9.2 | S5 | No solid waste is allowed to be disposed overboard. | Marine Dredging for the BPPS Pipeline and the LPS Pipeline / During construction / During operation | Contractor(s) | | ✓ | ✓ | - | ✓ for LPS Pipeline N/A for BPPS Pipeline |
| S7.9.1 | S5 | Appropriate infiltration control, such as cofferdam wall, should be adopted to limit groundwater | Land sites & drainages for GRSS within BPPS and | Contractor(s) | | ✓ | | - | N/A |

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| | | 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. | LPS / During construction | | | | | | |
| S7.9.1 | S5 | 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 sites & drainages for GRSS within BPPS and LPS / During construction | Contractor(s) | | ✓ | | ProPECC PN 1/94, TM Standard under the WPCO | ✓ for GRS in BPPS N/A for GRS in LPS |
| S7.9.1 | S5 | Earthworks to form the final surfaces will be followed up with surface protection and drainage works to prevent erosion caused by rainstorms. | Land sites & drainages for GRSS within BPPS and LPS / During construction | Contractor(s) | | ✓ | | - | N/A |

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| S7.9.1 | S5 | Appropriate surface drainage will be designed and provided where necessary. | Land sites & drainages for GRSs within BPPS and LPS / During construction | Contractor(s) | | ✓ | | - | N/A |
| S 7.9.1 | S5 | 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 sites & drainages for GRSs within BPPS and LPS / During construction | Contractor(s) | | ✓ | | ProPECC PN 1/94 | N/A |
| S7.9.1 | S5 | 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 sites & drainages for GRSs within BPPS and LPS / During construction | Contractor(s) | | ✓ | | - | N/A |
| S7.9.1 | S5 | 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 sites & drainages for GRSs within BPPS and LPS / During construction | Contractor(s) | | ✓ | | - | ✓ for GRS in BPPS N/A for GRS in LPS |

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| S7.9.1 | S5 | 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 sites & drainages for GRSs within BPPS and LPS / During construction | Contractor(s) | | ✓ | | - | N/A |
| S7.9.1 | S5 | 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. No onsite discharge from these chemical toilets would be allowed. | Land sites & drainages for GRSs within BPPS and LPS / During construction | Contractor(s) | | ✓ | | - | ✓ for GRS in BPPS N/A for GRS in LPS |
| S 7.9.2 | S5 | Mitigation measures for maintenance dredging at the LNG Terminal in form of controlled dredging rate (maximum of 5,500m ³ day ⁻¹) as well as silt curtain should be implemented for the control of sediment dispersion and the protection of the nearby WSRs. | Marine Maintenance Dredging (LNG Terminal) / During operation | Contractor(s) / HKLTL | | | ✓ | - | N/A |
| S 7.9.2 / S9.11.3 | S5 / S7 | A project-specific contingency plan (including protocols for avoidance, containment, remediation and reporting accidental fuel spill event) will be prepared and | Fuel spillage for the LNG Terminal / During operation | Contractor(s) / HKLTL | | | ✓ | | N/A |

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| | | implemented to contain and clean up the spilled or leaked fuels or chemicals at the LNG Terminal, surrounding waters and marine parks. | | | | | | | |
| S7.12.1 | S5.2-S5.5 | Marine water quality monitoring at selected WSRs is recommended for marine dredging and jetting works for the pipeline construction. | Designated monitoring stations as defined in EM&A Manual / During marine construction period | Environmental Team (ET) | | ✓ | | - | ✓ |
| S7.12.1 | S5.2-S5.5 | To ensure proper implementation of the recommended mitigation measures and good construction site practices during marine-based construction works, environmental site audits on a regular basis is recommended throughout the construction period. | Marine sites for the LNG Terminal, the BPPS Pipeline and the LPS Pipeline / During construction | Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC) | | ✓ | | - | ✓ for LPS Pipeline N/A for BPPS Pipeline and LNG Terminal |
| S7.12.2 | S5.2-S5.5 | Water quality monitoring at the selected nearby WSRs is recommended for first year of operation of the LNG Terminal. | During operation for the LNG Terminal | Environmental Team (ET)/ HKLTL | | | ✓ | TM Standard under the WPCO, WPCO license requirements, WQO | N/A |
| S7.12.2 | S5.2-S5.5 | During maintenance dredging at the LNG Terminal, water quality | Marine Maintenance Dredging (LNG | Contractor(s) / HKLTL | | | ✓ | TM Standard under the WPCO, WPCO license | N/A |

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| | | monitoring at the selected nearby WSRs would be required. | Terminal) / During operation | | | | | requirements, WQO | |
| Waste Management | | | | | | | | | |
| S8.5 | S6.2 | The contractor(s) will nominate approved personnel to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site. | All areas / During construction / During operation | Contractor(s)/ Project Proponents | | ✓ | ✓ | - | ✓ |
| S8.5 | S6.2 | Good waste management practices should be implemented: <ul style="list-style-type: none"> • Training of site personnel in proper waste management and chemical handling procedures; • Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre; • 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; | All areas / During construction / During operation | Contractor(s)/ Project Proponents | | ✓ | ✓ | - | ✓ for 1 st , 3 rd , 5 th , 6 th & 7 th bullet points for GRS in BPPS N/A for 2 nd & 4 th bullet points for GRS in BPPS ✓ for 1 st , 2 nd , 5 th , 6 th & 7 th bullet points for LPS Pipeline N/A for 3 rd & 4 th bullet points for LPS Pipeline |

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| | | | | | D | C | O | | |
| | | <ul style="list-style-type: none"> Any unused chemicals, and those with remaining functional capacity, be recycled as far as possible; Prior to disposal of C&D materials, 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 in a landfill; Proper storage and site practices to reduce the potential for damage or contamination of construction materials; and Plan and stock construction materials carefully to reduce amount of waste generated and avoid unnecessary generation of waste. | | | | | | | |
| S8.5 | Table 6.1 | The contractor(s) must provide sufficient waste disposal points. Wastes will be collected and removed from site in a timely manner. | All areas / During construction / During operation | Contractor(s) / Project Proponents | | ✓ | ✓ | - | An observation was given for GRS in BPPS |

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| S8.5 | Table 6.1 | The contractor(s) will have appropriate measures to reduce windblown/ floating litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers. | All areas / During construction / During operation | Contractor(s) / Project Proponents | | ✓ | ✓ | - | N/A |
| S8.5 | Table 6.1 | The contractor(s) will take and keep records of quantities of wastes generated, recycled and disposed of and the disposal sites. | All areas / During construction / During operation | Contractor(s) / Project Proponents | | ✓ | ✓ | - | ✓ |
| S8.5 | Table 6.1 | The contractor(s) must segregate and store different types of waste in different containers, skips or stockpiles to enhance reuse and recycling of material and proper disposal of waste. | All areas / During construction / During operation | Contractor(s) / Project Proponents | | ✓ | ✓ | - | ✓ |
| S8.5 | S6.2 | The contractor(s) will use reusable non-timber formwork to reduce the amount of C&D materials. | All areas / During construction | Contractor(s) | | ✓ | | - | ✓ for GRS in BPPS N/A for LPS Pipeline |
| S8.5 | Table 6.1 | The contractor(s) must ensure that all the necessary waste disposal and marine dumping permits or licences are obtained prior to the | During construction | Contractor(s) | | ✓ | | - | ✓ |

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| | | commencement of the construction works. | | | | | | | |
| S8.5 | S6.2 | The contractor will open a billing account with EPD in accordance with the <i>Waste Disposal (Charges for Disposal of Construction Waste) Regulation</i> for the payment of disposal charges. | During construction | Contractor(s) | | ✓ | | <i>Cap 354N Waste Disposal (Charges for Disposal of Construction Waste) Regulation</i> | ✓ |
| S8.5 | S6.2 | A trip-ticket system will be established in accordance with <i>DEVB TC(W) No. 6/2010</i> 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. | During construction | Contractor(s) | | ✓ | | <i>DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials</i> | ✓ |
| S8.5 | S6.2 | A WMP as stated in the <i>PNAP ADV-19</i> 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 | All areas / During construction | Contractor(s) | | ✓ | | <i>PNAP ADV-19</i> | ✓ |

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| | | Contract for approval prior to implementation. | | | | | | | |
| S8.5 | Table 6.1 | The management of dredged marine sediment requirement from <i>PNAP ADV-21</i> will be incorporated in the Contract for the construction and maintenance dredging during the operation of the Project. | Marine works / During construction / During operation | Contractor(s)/ Project Proponents | | ✓ | ✓ | <i>PNAP ADV-21</i> and <i>Dumping at Sea Ordinance (DASO)</i> | ✓ |
| S8.5/ S7.9 | S6.2 / S5 | Disposal vessels will be fitted with tight bottom seals in order to prevent leakage of material during transport. | Dredged areas / During construction | Contractor(s)/ Project Proponents | | ✓ | | <i>Dumping at Sea Ordinance (DASO)</i> | ✓ |
| S8.5/ S7.9 | S6.2 / S5 | Barges will be filled to a level, which ensures that of marine sediment and marine sediment laden water does not spill over during loading or transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action. | Dredged areas / During construction | Contractor(s)/ Project Proponents | | ✓ | | <i>Dumping at Sea Ordinance (DASO)</i> | A reminder was given for LPS Pipeline |
| S8.5/ S7.9 | S6.2 / S5 | After dredging, any excess materials will be cleaned from decks and exposed fittings before the vessel is moved from the dredging area. | Dredged areas / During construction | Contractor(s)/ Project Proponents | | ✓ | | <i>Dumping at Sea Ordinance (DASO)</i> | A reminder was given for LPS Pipeline |

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| S8.5/ S7.9 | S6.2 / S5 | 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. | Dredged areas / During construction | Contractor(s)/ Project Proponents | | ✓ | | | A reminder was given for LPS Pipeline |
| S8.5 | S6.2 | Dredgers 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. | Dredged areas / During construction | Contractor(s)/ Project Proponents | | ✓ | | | ✓ |
| S8.5 | Table 6.1 | C&D materials will be segregated on-site into public fill and non-inert C&D materials and stored in different containers or skips to facilitate reuse of the public fill and proper disposal of the construction waste. Specific areas of the land and marine-based construction sites will be designated for such segregation and storage if immediate use is not practicable. Prefabrication will be adopted as | During construction | Contractor(s) | | ✓ | | - | ✓ |

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| | | | | | D | C | O | | |
| | | far as practicable to reduce the construction waste arisings. | | | | | | | |
| S8.5 | Table 6.1 | The contractor(s) will register as a chemical waste producer with the EPD. Chemical waste will be handled in accordance with the <i>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i> . | All areas / During construction / During operation | Contractor(s)/ Project Proponents | | ✓ | ✓ | <i>Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i> | ✓ |
| S8.5 | Table 6.1 | Containers used for storage of chemical wastes will: <ul style="list-style-type: none"> • Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; • Have a capacity of less than 450 L unless the specifications have been approved by the EPD; and • Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations. | All areas / During construction / During operation | Contractor(s)/ Project Proponents | | ✓ | ✓ | <i>Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i> | ✓ |

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| S8.5 | Table 6.1 | <p>The storage area for chemical wastes will:</p> <ul style="list-style-type: none"> • Be clearly labelled and used solely for the storage of chemical waste; • Be enclosed on at least 3 sides; • 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; • Have adequate ventilation; • Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and • Be arranged so that incompatible materials are appropriately separated. | All areas / During construction / During operation | Contractor(s)/ Project Proponents | | ✓ | ✓ | Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes | ✓ |
| S8.5 | Table 6.1 | <p>Chemical waste will be disposed of:</p> <ul style="list-style-type: none"> • Via a licensed waste collector; and | All areas / During construction / During operation | Contractor(s)/ Project Proponents | | ✓ | ✓ | Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the | N/A |

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| | | | | | D | C | O | | |
| | | <ul style="list-style-type: none"> 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. | | | | | | <i>Packaging, Labelling and Storage of Chemical Wastes</i> | |
| S8.5 | Table 6.1 | <p>General refuse (including the floating refuse collected) will be stored in enclosed bins separately from C&D materials and chemical wastes. Floating refuse will be collected on an 'as needed' basis for disposal as general refuse. Workers will be prohibited from throwing rubbish into the sea and adequate bins will be provided on both land and marine-based sites and marine vessels. General refuse will be delivered separately from C&D materials and chemical wastes for offsite disposal on a regular basis to reduce odour, pest and litter impacts. General refuse from the marine vessels will be collected and disposed on shore.</p> | All areas / During construction / During operation | Contractor(s)/ Project Proponents | | ✓ | ✓ | - | A reminder was given for GRS in BPPS |

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| | | | | | D | C | O | | |
| S8.5 | Table 6.1 | Recycling bins will be provided at strategic locations within the land and marine-based construction site and marine vessels to facilitate recovery of recyclable materials (including aluminium can, waste paper, glass bottles and plastic bottles) from the Project Site. Materials recovered will be sold for recycling. | All areas / During construction / During operation | Contractor(s)/ Project Proponents | | ✓ | ✓ | - | ✓ for provision of recycling bins N/A for material recovered being sold for recycling |
| S8.5 | S6.2 | To avoid any odour and litter impact, appropriate number of portable toilets will be provided for workers on-site. | All areas / During construction / During operation | Contractor(s) | | ✓ | ✓ | - | ✓ |
| S8.5 | S6.2 | At the commencement of the construction works and operations, training will be provided to workers on the concepts of site cleanliness and on appropriate waste management procedures, including waste reduction, reuse and recycling. In particular, the training will emphasize no dumping of waste into the sea is allowed, particularly at marine-based work sites and on marine vessels. | All areas / During construction / During operation | Contractor(s)/ Project Proponents | | ✓ | ✓ | - | ✓ |

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| | | | | | D | C | O | | |
| S8.5 | S6.2 | Industrial waste arising from maintenance activities will be segregated. Scrap metals and recyclables will be sent for recycling to reduce the overall quantity of waste disposed from these activities. | All areas / During operation | Project Proponents | | | ✓ | - | N/A |
| S8.7 | S6.1 | It is recommended that monthly audits of the waste management practices be carried out during the construction phase land-based work sites (at the GRSs at the BPPS and the LPS), and at marine-based work sites (on marine vessels and Jetty) to determine if wastes are being managed in accordance with the recommended good site practices and WMP. The audits will include all aspects of waste management including waste generation, storage, handling, recycling, transportation and disposal, to prevent any dumping of waste into the sea or malpractice of waste disposal. | All areas / During construction | Contractor(s)/ Environmental Team (ET) & Independent Environmental Checker (IEC) | | ✓ | | - | ✓ |
| Ecology | | | | | | | | | |

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| | | | | | D | C | O | | |
| S9.11.2 | S7 | The vessel operators will be required to control and manage all effluent from vessels. These kinds of wastewater shall be brought back to port where possible and discharged at appropriate collection and treatment system to prevent avoidable water quality impact. | Marine works / During construction / During operation | Contractor(s)/ Project Proponents | | ✓ | ✓ | - | ✓ |
| S9.11.2 | S7 | A policy of no dumping of rubbish, food, oil, or chemicals will be strictly enforced. This will also be covered in the contractor briefings. | Marine works / During construction / During operation | Contractor(s) / Project Proponents | | ✓ | ✓ | - | ✓ |
| S9.11.2 | S7 | Only well-maintained and inspected vessels would be used to limit any potential discharges to the marine environment. | Marine works / During construction / During operation | Contractor(s) / Project Proponents | | ✓ | ✓ | - | ✓ |
| S9.11.2 | S7 | Standard site practices outlined in <i>ProPECC PN 1/94 "Construction Site Drainage"</i> will be followed as far as practicable in order to reduce surface runoff, minimise erosion, and also to retain and reduce any SS prior to discharge. | Marine works / During construction / During operation | Contractor(s) / Project Proponents | | ✓ | ✓ | <i>ProPECC PN 1/94</i> | ✓ |
| S9.11.3 | S7 | Pipeline dredging/ jetting works between North of Tai O and Fan Lau (BPPS KP21.3 to 15.6) will avoid the peak months of Chinese | Marine works (Dredging/ jetting works between North of Tai O and | Contractor(s) | | ✓ | | - | N/A |

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| | | | | | D | C | O | | |
| | | White Dolphin (CWD) calving (May and June). | Fan Lau along the BPPS Pipeline) / During construction | | | | | | |
| S9.11.3 | S7 | Pipeline dredging/ jetting works between South of Soko Islands and the LNG Terminal (BPPS KP8.9 to 0.0) will be restricted to a daily maximum of 12 hours with daylight (0700 – 1900) operations. | Marine works (Dredging/ jetting works between South of Soko Islands and the LNG Terminal along the BPPS Pipeline) / During construction | Contractor(s) | | ✓ | - | N/A | |
| S9.11.3 | S7 | Pipeline dredging/ jetting from LNG Terminal to South of Shek Kwu Chau (LPS KP0.0 to 5.0) will be restricted to a daily maximum of 12 hours with daytime (0700 – 1900) operations. | Marine works (Dredging/ jetting works between from LNG Terminal to South of Shek Kwu Chau along the LPS Pipeline) / During construction | Contractor(s) | | ✓ | - | ✓ | |
| S9.11.3 | S7 | Use of vibratory/ hydraulic pushing method to vibrate / push the open-ended steel tubular pile for the upper layer of the seabed and only use hydraulic hammer (if needed) to install the remainder of the pile length through the lower layer of | Marine works (Piling at the LNG Terminal) / During construction | Contractor(s) | | ✓ | - | N/A | |

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| EIA Reference | EM&A Reference | Recommended Environmental Protection Measures/ Mitigation Measures | Location/ duration of recommended measures & timing of completion of recommended measures | Implementation Agent | Implementation Stage ⁽¹⁾ | | | Relevant Legislation & Guidelines | Implementation Status |
|---------------|----------------|---|---|----------------------|-------------------------------------|---|---|-----------------------------------|-----------------------|
| | | | | | D | C | O | | |
| | | <p>the seabed. During underwater percussive piling works:</p> <ul style="list-style-type: none"> • Quieter hydraulic hammers should be used instead of the noisier diesel hammers; • Use of Noise Reduction System for hydraulic hammering; • Acoustic decoupling of noisy equipment on work barges should be undertaken; • Using ramp-up piling procedures. This comprises of low energy driving for a period of time prior to commencement of full piling. This will promote avoidance of the area by marine mammals when sounds levels are not injurious. Blow frequency during this ramping up period should replicate the intensity that would be undertaken during full piling (e.g. one blow every two seconds) to provide cues for marine mammals to localize the sound source. Pile blow energy should be ramped up gradually over the 'soft start' period. Activities will be continuous without short- | | | | | | | |

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|---------------|----------------|---|---|---------------------------------------|-------------------------------------|---|---|-----------------------------------|-----------------------|
| | | | | | D | C | O | | |
| | | breaks and avoiding sudden random loud sound emissions; <ul style="list-style-type: none"> Underwater percussive piling should be conducted inside a bubble curtain so as to ameliorate underwater sound level transmission; The percussive pile driving will be conducted during the daytime (0700 – 1900) for a maximum of 12 hours, avoiding generation of underwater sounds at night time; and Underwater percussive piling works for the Jetty construction will avoid the peak season of FP (December to May). | | | | | | | |
| S9.11.3 | S7 | The vessel operators of this Project will be required to use predefined and regular routes (that do not encroach into existing and proposed marine parks), make use of designated fairways to access the works areas, and would avoid traversing sensitive habitats such as existing and proposed marine parks (with the exception of the FSRU Vessel which will need to transit through | Marine works / During construction / During operation | Contractor(s) / Project Proponents | | ✓ | ✓ | - | ✓ |

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|---------------|----------------|---|---|-----------------------------------|-------------------------------------|---|---|-----------------------------------|-----------------------|
| | | | | | D | C | O | | |
| | | the proposed SLMP during manoeuvring to the Jetty and after typhoon event due to its safe operational requirement). | | | | | | | |
| S9.11.3 | S7 | Any anchoring/ anchor spread requirements during Project construction will avoid encroachment into the existing and proposed marine parks, unless otherwise agreed by the Director of Environmental Protection. | Marine works (on existing, planned and potential marine parks) / During construction | Contractor(s)/ Project Proponents | | ✓ | | - | ✓ |
| S9.11.3 | S7 | Silt curtain deployment during Project construction and maintenance dredging will avoid encroachment into the existing and proposed marine parks, unless otherwise agreed by the Director of Environmental Protection. | Marine works (on existing, planned and potential marine parks) / During construction / During operation | Contractor(s)/ Project Proponents | | ✓ | ✓ | - | ✓ |
| S9.11.3 | S7 | No stopping over or anchoring activity of vessels related to the Project should be conducted within existing and proposed marine parks, even before, during and after typhoon, unless otherwise agreed by the Director of Environmental Protection. | Marine works (on existing, planned and potential marine parks) / During construction / During operation | Contractor(s)/ Project Proponents | | ✓ | ✓ | - | ✓ |

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|---------------|----------------|--|---|---------------------------------------|-------------------------------------|---|---|-----------------------------------|-----------------------|
| | | | | | D | C | O | | |
| S9.11.3 | S7 | Use of appropriate dredging and jetting rates with the use of silt curtain where needed as recommended in the Water Quality section (Section 7 of the EIA Report) to reduce potential water quality impacts from elevated suspended solids (SS) due to the proposed marine works. | Marine works / During construction / During operation | Contractor(s) / Project Proponents | | ✓ | ✓ | - | ✓ |
| S9.11.3 | S7 | Silt curtain will be checked and maintained to ensure its effectiveness in mitigating water quality impacts on existing, planned and potential marine parks. | Marine works / During construction / During operation | Contractor(s) / Project Proponents | | ✓ | ✓ | - | ✓ |
| S9.11.3 | S7 | All vessel operators working on the Project will be given a briefing, alerting them to the locations of the existing, proposed and potential marine parks and the regulations for marine parks, the possible presence of dolphins and porpoises in the marine works areas, and the guidelines for safe vessel operation in the presence of cetaceans. The vessels will avoid using high speed as far as possible. By observing the guidelines, vessels will be operated in an appropriate manner so that marine mammals will not | Marine works / During construction / During operation | Contractor(s) / Project Proponents | | ✓ | ✓ | - | ✓ |

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|---------------|----------------|--|---|---------------------------------------|-------------------------------------|---|---|-----------------------------------|-----------------------|
| | | | | | D | C | O | | |
| | | be subject to undue disturbance or harassment. | | | | | | | |
| S9.11.3 | S7 | All vessels used in this Project will be required to slow down to 10 knots around the Project's marine works areas and areas with high dolphin and porpoise usage, including existing and proposed marine parks. With implementation of this measure, the chance of vessel strike resulting in physical injury or mortality of marine mammals will be extremely unlikely. | Marine works / During construction / During operation | Contractor(s) / Project Proponents | | ✓ | ✓ | - | ✓ |
| S9.11.3 | S7 | During underwater percussive piling works, a marine mammal exclusion zone within a radius of 500m radius will be implemented during underwater percussive piling works. Qualified observer(s) will scan an exclusion zone of 500m radius around the work area for at least 30 minutes prior to the start of piling. If a marine mammal is observed in the exclusion zone, piling will be delayed until they have left the area. This measure will ensure the area in the vicinity of the underwater percussive piling work is clear of marine mammals prior to the | Marine works / During construction | Contractor(s) / Project Proponents | | ✓ | | - | N/A |

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|---------------|----------------|--|---|---------------------------------------|-------------------------------------|---|---|-----------------------------------|-----------------------|
| | | | | | D | C | O | | |
| | | commencement of works and will serve to reduce any disturbance to marine mammals. When a marine mammal is spotted by qualified personnel within the exclusion zone, piling works will cease and will not resume until the observer confirms that the zone has been continuously clear of the marine mammal for a period of 30 minutes. This measure will ensure the area in the vicinity of the piling is clear of the marine mammal during works and will serve to reduce any disturbance to marine mammals. | | | | | | | |
| S9.11.3 | S7 | During marine dredging or jetting operations, a marine mammal exclusion zone within a radius of 250m from dredger or jetting machine will be implemented. Qualified observer(s) will scan an exclusion zone of 250m radius around the work area for at least 30 minutes prior to the start of dredging or jetting. If cetaceans or other megafauna are observed in the exclusion zone, dredging or jetting will be delayed until they have left the area. This measure will ensure the area in the vicinity of the dredging or jetting work is | Marine works / During construction / During operation | Contractor(s) / Project Proponents | | ✓ | ✓ | - | ✓ |

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|---------------|----------------|--|---|-----------------------|-------------------------------------|---|---|-----------------------------------|-----------------------|
| | | | | | D | C | O | | |
| | | clear of marine mammals prior to the commencement of works and will serve to reduce any disturbance to marine mammals. When a marine mammal is spotted by qualified personnel within the exclusion zone, dredging or jetting works will cease and will not resume until the observer confirms that the zone has been continuously clear of the marine mammal for a period of 30 minutes. This measure will ensure the area in the vicinity of the works is clear of the marine mammal during works and will serve to reduce any disturbance to marine mammals. If necessary, for night-time works, exclusion zone monitoring for FP by underwater acoustic means would be explored to supplement the exclusion zone monitoring by trained observers. A site trial will be conducted to demonstrate its practicability/ effectiveness before actual implementation during the night-time works. | | | | | | | |
| S9.11.3 | S7 | Implementation of a contingency plan to contain and clean up the spilled or leaked fuels or chemicals at the LNG Terminal, | Marine site for the LNG Terminal / During operation | Contractor(s) / HKLTL | | | ✓ | - | N/A |

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|------------------|----------------|---|---|--|-------------------------------------|---|---|-----------------------------------|-----------------------|
| | | | | | D | C | O | | |
| | | surrounding waters and marine parks. | | | | | | | |
| S9.15.1 | S7 | Baseline, impact and post-construction monitoring of marine mammal using vessel-based line transect surveys and passive acoustic monitoring (PAM) will be undertaken to keep track of potential changes in the usage of waters in the vicinity of the Project's works areas by FP. Prior to the commencement of monitoring, methods will be agreed with the AFCD. | Marine site / During construction | Contractor(s) / ET/ Project Proponents | | ✓ | | - | N/A |
| Fisheries | | | | | | | | | |
| S10.8 | S8 | The mitigation measures designed to mitigate impacts to water quality to acceptable levels (compliance with assessment criteria) and marine ecological impacts are expected to mitigate impacts to fisheries resources. | During construction and operation | Contractor(s) / Project Proponents / Environmental Team (ET) & Independent Environmental Checker (IEC) | | ✓ | ✓ | - | ✓ |
| S10.8 | S8 | Impingement and entrainment of fisheries resources will be reduced through appropriate design of the intake screens on the cooling water intake. | During operation for the LNG Terminal | Contractor(s) / HKLTL | | | ✓ | - | N/A |
| Visual | | | | | | | | | |

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|---------------|----------------|--|---|--|-------------------------------------|---|---|-----------------------------------|--|
| | | | | | D | C | O | | |
| S11.8 | S9 | Sensitive architectural design of the new facilities. This should take into account material texture, colour, finished to structure and the context of the site to ensure the GRSs at the BPPS and LPS blend into the existing context, cause least disturbance to the existing land. LNG Terminal will be designed for marine safety and operations, in accordance with relevant standards and regulations and sensitive architectural design will be considered where practicable. | All areas / Detailed design / During construction / During operation | Design Contractor / Project Proponents | ✓ | ✓ | ✓ | - | ✓ |
| S11.8 | S9 | Pre-construction and construction period for the GRSs and LNG Terminal should be reduced as far as practical to lower visual impact. | All areas / During construction | Contractor(s) | | ✓ | | - | ✓ for GRS in BPPS and LNG Terminal N/A for GRS in LPS |
| S11.8 | S9 | Following construction, land areas temporarily affected by the construction works, will be reinstated to their former state. | Land sites for the GRSs within BPPS and LPS / During construction | Contractor(s) | | ✓ | | - | ✓ for GRS in BPPS N/A for GRS in LPS |

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|--------------------------|----------------|--|---|--|-------------------------------------|---|---|-----------------------------------|---|
| | | | | | D | C | O | | |
| S11.8 | S9 | Light intensity and beam directional angle should be controlled at the GRSs and the LNG Terminal at the design stage to reduce light pollution and glare (e.g. hooded lights, specific directional focus, etc.). | All areas / Detailed design / During operation | Design Contractor / Project Proponents | ✓ | | ✓ | - | N/A |
| S11.8 | S9 | Any plants to be affected by the GRSs at the BPPS and the LPS should be preserved and care taken to ensure the existing health status of the vegetation is maintained or enhanced after construction. | All areas / During construction | Contractor(s) | | ✓ | | - | ✓ for GRS in BPPS N/A for GRS in LPS |
| Cultural Heritage | | | | | | | | | |
| S12.7 | S10 | N/A | | | | | | | N/A |

TABLE C.2 SUMMARY OF MITIGATION MEASURES FOR PIPELINE CONSTRUCTION WORKS

| Work Location | Plants Involved | Allowed Maximum Work Rate | Silt Curtain at Plants | Silt Curtain at Water Sensitive Receivers | Other Measures | Implementation Status |
|--|--|--|------------------------|--|---|--|
| LPS Pipeline (under FEP-02/558/2018/A) | | | | | | |
| Pipeline shore approach at LPS (KP17.4 - 18.2) | 1 Grab Dredger | 1,600m ³ day ⁻¹ for 24 hours each day | Yes | Not required | | N/A |
| West Lamma Channel (KP14.5 - 17.4) | 1 Jetting Machine | 1,000m day ⁻¹ for 24 hours each day | Yes | Not required | | ✓ |
| South of Shek Kwu Chau to West Lamma Channel (KP5.0 - 14.5) | 1 Jetting Machine | 7,000m day ⁻¹ for 24 hours each day | Yes | Not required | | N/A |
| Double Berth Jetty to South of Shek Kwu Chau (KP0.1 - 5.0) | 1 Jetting Machine | 720m day ⁻¹ for 24 hours each day | Yes | Two layers at Eastern Boundary of the Proposed South Lantau Marine Park (KP0.1 - 5.0) | Daily maximum of 12 hours with daylight (0700 – 1900) | N/A |
| Pipeline Riser Sections at Double Berth Jetty (under FEP-02/558/2018/A and FEP-03/558/2018/A) | | | | | | |
| Pipeline Riser (KP0.0 - 0.1 for both pipelines) | 1 Grab Dredger | 8,000m ³ day ⁻¹ for 24 hours each day | Yes | Not required | Daily maximum of 12 hours with daylight (0700 – 1900) | ✓ for FEP-02/558/2018/A N/A for FEP-03/558/2018/A |
| BPPS Pipeline (under FEP-03/558/2018/A) | | | | | | |
| Jetty Approach (KP0.1 - 5.0), excluding Subsea Cable Sterile Corridors | 1 Jetting Machine | 1,000m day ⁻¹ for 24 hours each day | Yes | Not required for grab dredging; Two layers at Southern Boundary of the Proposed South Lantau Marine Park (KP0.1 - 8.9) for jetting | Daily maximum of 12 hours with daylight (0700 – 1900) | N/A |
| Subsea Cable Sterile Corridors (KP1.49 - 2.75 & KP3.55 - 4.43) | 2 Grab Dredgers, followed by 1 Jetting Machine | 8,000m ³ day ⁻¹ for 24 hours each day for each dredger 720m day ⁻¹ for 24 hours each day jetting machine | Yes | | | N/A |

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| Work Location | Plants Involved | Allowed Maximum Work Rate | Silt Curtain at Plants | Silt Curtain at Water Sensitive Receivers | Other Measures | Implementation Status |
|--|-------------------|---|------------------------|--|---|-----------------------|
| South of Soko Islands (KP5.0 - 8.9) | 1 Jetting Machine | 1,000m day ⁻¹ for 24 hours each day | Yes | | | N/A |
| Southwest of Soko Islands (KP8.9 - 12.1) | 1 Jetting Machine | 1,000m day ⁻¹ for 24 hours each day | Yes | Not required | | N/A |
| Adamasta Channel (KP12.1 - 15.6) | 1 Jetting Machine | 1,000m day ⁻¹ for 24 hours each day | Yes | Not required | | N/A |
| Southwest Lantau (KP15.6 - 21.3) | 1 Jetting Machine | 1,500 m day ⁻¹ for 24 hours each day | Yes | Not required | Avoid the peak months of Chinese White Dolphin (CWD) calving (May and June) | N/A |
| West of Tai O to West of HKIA (KP21.3 - 31.5) | 1 Jetting Machine | 1,500m day ⁻¹ for 24 hours each day from KP KP26.2 to 21.3 720m day ⁻¹ for 24 hours each day from KP31.5 to 26.2 | Yes | Not required | | N/A |
| Sha Chau to Lung Kwu Chau (KP31.5 - 36.0) | 1 Jetting Machine | 720m day ⁻¹ for 24 hours each day | Yes | Two layers at Western Boundary of the Sha Chau and Lung Kwu Chau Marine Park (KP31.5 - 36.0) | | N/A |
| Sha Chau to Lung Kwu Chau (KP36.0 - 37.5) | 1 Jetting Machine | 720m day ⁻¹ for 24 hours each day | Yes | Two layers at Western Boundary of the Sha Chau and Lung Kwu Chau Marine Park (KP36.0 - 37.5) | | N/A |
| Lung Kwu Chau to Urmston Anchorage (KP37.5 - 41.1) | 1 Jetting Machine | 1,000m day ⁻¹ for 24 hours each day | Yes | Two layers at Northwestern corner of Sha Chau and Lung Kwu Chau Marine Park (KP37.5 - 41.1) | | N/A |

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| Work Location | Plants Involved | Allowed Maximum Work Rate | Silt Curtain at Plants | Silt Curtain at Water Sensitive Receivers | Other Measures | Implementation Status |
|---|------------------------|---|-------------------------------|--|-----------------------|------------------------------|
| Urmston Road (KP41.1 - 42.9) | 1 Grab Dredger | 8,000m ³ day ⁻¹ for 24 hours each day | Yes | Not required | | N/A |
| West of BPPS (KP42.9 - 44.9) | 1 Jetting Machine | 1,000m day ⁻¹ for 24 hours each day | Yes | Two layers at CR1, CR2 (Note 1) | | N/A |
| Pipeline shore approach at BPPS (KP44.9 - 45.0) | 1 Grab Dredger | 1,500m ³ day ⁻¹ for 24 hours each day | Yes | Two layers at CR1, CR2 (Note 1) | | N/A |

Note: (1) CR1 and CR2 denote the coral colonies identified at the artificial seawall at BPPS.

ANNEX D

STATUS OF STATUTORY ENVIRONMENTAL REQUIREMENTS

TABLE D.1 STATUS OF STATUTORY ENVIRONMENTAL REQUIREMENTS FOR WHOLE PROJECT (FEP-01/558/2018/A, FEP-02/558/2018/A & FEP-03/558/2018/A)

| Item | Description | Ref. No. | Date of Expiry | Status |
|------|--|--------------------------------|----------------|--|
| 1 | Notification Pursuant to Section 3(1) of <i>Air Pollution Control (Construction Dust) Regulation</i> | 454879 | N/A | Valid |
| 2 | Billing Account under <i>Waste Disposal (Charges for Disposal of Construction Waste) Regulation</i> | 7037035 | N/A | Valid |
| 3 | Registration as Chemical Waste Producer under <i>Waste Disposal (Chemical Waste) (General) Regulation</i> | WPN 5213-912-C4445-01 (Note 1) | N/A | Registration completed on 12 May 2020 |
| 4 | Construction Noise Permit (for construction site for the Hong Kong Offshore LNG Terminal Project) under <i>Noise Control Ordinance</i> | GW-RS0743-20 (Note 2) | 19 Mar 2021 | Validity from 2 Oct 2020 to 19 Mar 2021 |
| 5 | Construction Noise Permit (for construction site for the Hong Kong Offshore LNG Terminal Project) under <i>Noise Control Ordinance</i> | GW-RS0911-20 (Note 3) | 3 Jun 2021 | Validity from 4 Dec 2020 to 3 Jun 2021 |
| 6 | Construction Noise Permit (for construction site for the Hong Kong Offshore LNG Terminal Project) under <i>Noise Control Ordinance</i> | GW-RS0955-20 | 13 Jun 2021 | Validity from 17 Dec 2020 to 13 Jun 2021 |

Notes:

- (1) The location/premises where the waste is produced (i.e. Working Vessel – Lan Jiang, Lan Jing, Hai Yang Shi You 202) as per the registration.
- (2) Construction Noise Permit GW-RS0743-20 has been withdrawn and replaced by GW-RS0911-20.
- (3) Construction Noise Permit GW-RS0911-20 has been withdrawn and replaced by GW-RS0955-20.

TABLE D.2 STATUS OF STATUTORY ENVIRONMENTAL REQUIREMENTS FOR FEP-01/558/2018/A

| Item | Description | Ref. No. | Date of Expiry | Status |
|------|---|-------------------|----------------|-----------------------|
| 1 | Further Environmental Permit under <i>EIA Ordinance</i> | FEP-01/558/2018 | N/A | Issued on 17 Jan 2020 |
| 2 | Further Environmental Permit under <i>EIA Ordinance</i> | FEP-01/558/2018/A | N/A | Issued on 6 Nov 2020 |

TABLE D.3 STATUS OF STATUTORY ENVIRONMENTAL REQUIREMENTS FOR FEP-02/558/2018/A

| Item | Description | Ref. No. | Date of Expiry | Status |
|------|---|-------------------|----------------|-----------------------|
| 1 | Further Environmental Permit under <i>EIA Ordinance</i> | FEP-02/558/2018 | N/A | Issued on 17 Jan 2020 |
| 2 | Further Environmental Permit under <i>EIA Ordinance</i> | FEP-02/558/2018/A | N/A | Issued on 22 Dec 2020 |
| 3 | Marine Dumping Permit under <i>Dumping at Sea Ordinance</i> | EP/MD/21-055 | 12 Jul 2021 | Issued on 13 Jan 2021 |

TABLE D.4 STATUS OF STATUTORY ENVIRONMENTAL REQUIREMENTS FOR FEP-03/558/2018/A

| Item | Description | Ref. No. | Date of Expiry | Status |
|------|--|--------------------------------|----------------|--|
| 1 | Further Environmental Permit under <i>EIA Ordinance</i> | FEP-03/558/2018 | N/A | Issued on 17 Jan 2020 |
| 2 | Further Environmental Permit under <i>EIA Ordinance</i> | FEP-03/558/2018/A | N/A | Issued on 22 Jan 2021 |
| 3 | Registration as Chemical Waste Producer under <i>Waste Disposal (Chemical Waste) (General) Regulation</i> | WPN 5293-431-P2781-26 (Note 1) | N/A | Registration completed on 1 Dec 2020 |
| 4 | Wastewater Discharge License under <i>Water Pollution Control Ordinance</i> | WT00037473-2021 (Note 2) | 31 Mar 2026 | Validity from 9 Mar 2021 to 31 Mar 2026 |
| 5 | Construction Noise Permit (for offshore construction site near Urmston Road, Tuen Mun) under <i>Noise Control Ordinance</i> | GW-RW0389-20 (Note 3) | 14 Feb 2021 | Validity from 28 Aug 2020 to 14 Feb 2021 |
| 6 | Construction Noise Permit (for construction site near Eastern Road, BPPS, Yung Long Road, Tuen Mun) under <i>Noise Control Ordinance</i> | GW-RW0407-20 (Note 4) | 6 Mar 2021 | Validity from 11 Sept 2020 to 6 Mar 2021 |
| 7 | Construction Noise Permit (for offshore construction site near Urmston Road, Tuen Mun) under <i>Noise Control Ordinance</i> | GW-RW0037-21 | 30 Jun 2021 | Validity from 15 Feb 2021 to 30 Jun 2021 |
| 8 | Construction Noise Permit (for construction site near Eastern Road, BPPS, Yung Long Road, Tuen Mun) under <i>Noise Control Ordinance</i> | GW-RW0067-21 | 6 Sept 2021 | Validity from 7 Mar 2021 to 6 Sept 2021 |

Notes:

- (1) The location/premises where the waste is produced (i.e. Black Point Power Station) as per the registration.
- (2) The location/premises where the industrial trade effluent is discharged into communal storm water drain (i.e. construction site at Black Point Power Station, Tuen Mun) as per the license.
- (3) Construction Noise Permit GW-RW0389-20 has been replaced by GW-RW0037-21 since 15 February 2021.
- (4) Construction Noise Permit GW-RW0407-20 has been replaced by GW-RW0067-21 since 7 March 2021.

TABLE D.5 STATUS OF SUBMISSIONS UNDER FURTHER ENVIRONMENTAL PERMITS

| EP Condition | Submission | Status |
|--|---|--|
| FEP-01/558/2018/A | | |
| 2.4 2.5 2.6 2.8 2.9 2.10 2.11 4.10 5.3 | Management Organization Updated EM&A Manual Location Plan Piling Installation Plan Review Report on Finless Porpoise Peak Occurrence Season Baseline Study Report on Phytoplankton, Zooplankton and Benthic Organisms Waste Management Plan Environmental Enhancement Plan Baseline Monitoring Report | Accepted / approved by EPD |
| 2.7 5.4 | Construction Works Schedule Monthly EM&A Reports | Submitted to EPD |
| 4.2 4.4 4.6 4.8 4.9 | Safety Management Plan Marine Routing Plan of the FSRU Vessel Design Plan of the FSRU Seawater Intake Mitigation Proposal for Emergency Gas Discharge and Accidental Spillage Emergency Response Plan | To be submitted no later than 3 months before the commencement of operation of the Project |
| 4.11 | Maintenance Dredging Plan | To be submitted no later than 6 months before the commencement of maintenance dredging works for the Project |
| FEP-02/558/2018/A | | |
| 2.4 2.5 2.6 2.8 2.9 2.10 2.11 4.6 5.3 | Management Organization Updated EM&A Manual Location Plan Pipeline Construction Plan Pipeline Laying Method Plan Silt Curtain Deployment Plan Waste Management Plan Environmental Enhancement Plan Baseline Monitoring Report | Accepted / approved by EPD |
| 2.7 5.4 | Construction Works Schedule Monthly EM&A Reports | Submitted to EPD |
| 4.2 4.5 | Safety Management Plan Emergency Response Plan | To be submitted no later than 3 months before the commencement of operation of the Project |
| FEP-03/558/2018/A | | |
| 2.4 2.5 2.6 2.7 2.8 2.9 2.10 2.11 | Management Organization Updated EM&A Manual Location Plan Construction Works Schedule Pipeline Construction Plan Pipeline Laying Method Plan Silt Curtain Deployment Plan Waste Management Plan | Accepted / approved by EPD |

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| EP Condition | Submission | Status |
|---------------------|--|--|
| 4.6 5.3 | Environmental Enhancement Plan Baseline Monitoring Report | |
| 5.4 | Monthly EM&A Reports | Submitted to EPD |
| 4.2 4.5 | Safety Management Plan Emergency Response Plan | To be submitted no later than 3 months before the commencement of operation of the Project |

ANNEX E

CUMULATIVE STATISTICS ON EXCEEDANCES, ENVIRONMENTAL COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTION

TABLE E.1 CUMULATIVE STATISTICS ON EXCEEDANCES FOR FEP-01/558/2018/A

| Monitoring Parameter | Level of Exceedance | Total no. recorded in this reporting period ⁽¹⁾ | Total no. recorded since project commencement |
|--|---------------------|--|---|
| Marine Mammal (STG & ANI) (running quarterly) | Action | N/A | N/A |
| | Limit | N/A | N/A |

TABLE E.2 CUMULATIVE STATISTICS ON ENVIRONMENTAL COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS FOR FEP-01/558/2018/A

| Reporting Period | Cumulative Statistics | | |
|---|--------------------------|-------------------------|-------------------------|
| | Environmental Complaints | Notification of Summons | Successful Prosecutions |
| This Reporting Period (1 Jan to 31 Mar 2021) | 0 | 0 | 0 |
| Total no. recorded since project commencement | 0 | 0 | 0 |

⁽¹⁾ Exceedances, which are non-project related, are not shown in this table.

TABLE E.3 CUMULATIVE STATISTICS ON EXCEEDANCES FOR FEP-02/558/2018/A

| Monitoring Parameter | Level of Exceedance | Total no. recorded in this reporting period ⁽¹⁾ | Total no. recorded since project commencement |
|---|---------------------|--|---|
| Marine Water Quality (DO) (surface & middle) | Action Limit | 0 0 | 0 0 |
| Marine Water Quality (DO) (bottom) | Action Limit | 0 0 | 0 0 |
| Marine Water Quality (Turbidity) (depth-averaged) | Action Limit | 0 0 | 0 0 |
| Marine Water Quality (SS) (depth-averaged) | Action Limit | 0 0 | 0 0 |

TABLE E.4 CUMULATIVE STATISTICS ON ENVIRONMENTAL COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS FOR FEP-02/558/2018/A

| Reporting Period | Cumulative Statistics | | |
|---|--------------------------|-------------------------|-------------------------|
| | Environmental Complaints | Notification of Summons | Successful Prosecutions |
| This Reporting Period (1 Jan to 31 Mar 2021) | 0 | 0 | 0 |
| Total no. recorded since project commencement | 0 | 0 | 0 |

⁽¹⁾ Exceedances, which are non-project related, are not shown in this table.

TABLE E.5 CUMULATIVE STATISTICS ON EXCEEDANCES FOR FEP-03/558/2018/A

| Monitoring Parameter | Level of Exceedance | Total no. recorded in this reporting period ⁽¹⁾ | Total no. recorded since project commencement |
|---|---------------------|--|---|
| Marine Water Quality (DO) (surface & middle) | Action Limit | N/A N/A | N/A N/A |
| Marine Water Quality (DO) (bottom) | Action Limit | N/A N/A | N/A N/A |
| Marine Water Quality (Turbidity) (depth-averaged) | Action Limit | N/A N/A | N/A N/A |
| Marine Water Quality (SS) (depth-averaged) | Action Limit | N/A N/A | N/A N/A |

TABLE E.6 CUMULATIVE STATISTICS ON ENVIRONMENTAL COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS FOR FEP-03/558/2018/A

| Reporting Period | Cumulative Statistics | | |
|---|--------------------------|-------------------------|-------------------------|
| | Environmental Complaints | Notification of Summons | Successful Prosecutions |
| This Reporting Period (1 Jan to 31 Mar 2021) | 0 | 0 | 0 |
| Total no. recorded since project commencement | 0 | 0 | 0 |

⁽¹⁾ Exceedances, which are non-project related, are not shown in this table.

ANNEX F

GRAPHICAL PRESENTATION OF CONSTRUCTION PHASE MARINE WATER QUALITY MONITORING RESULTS

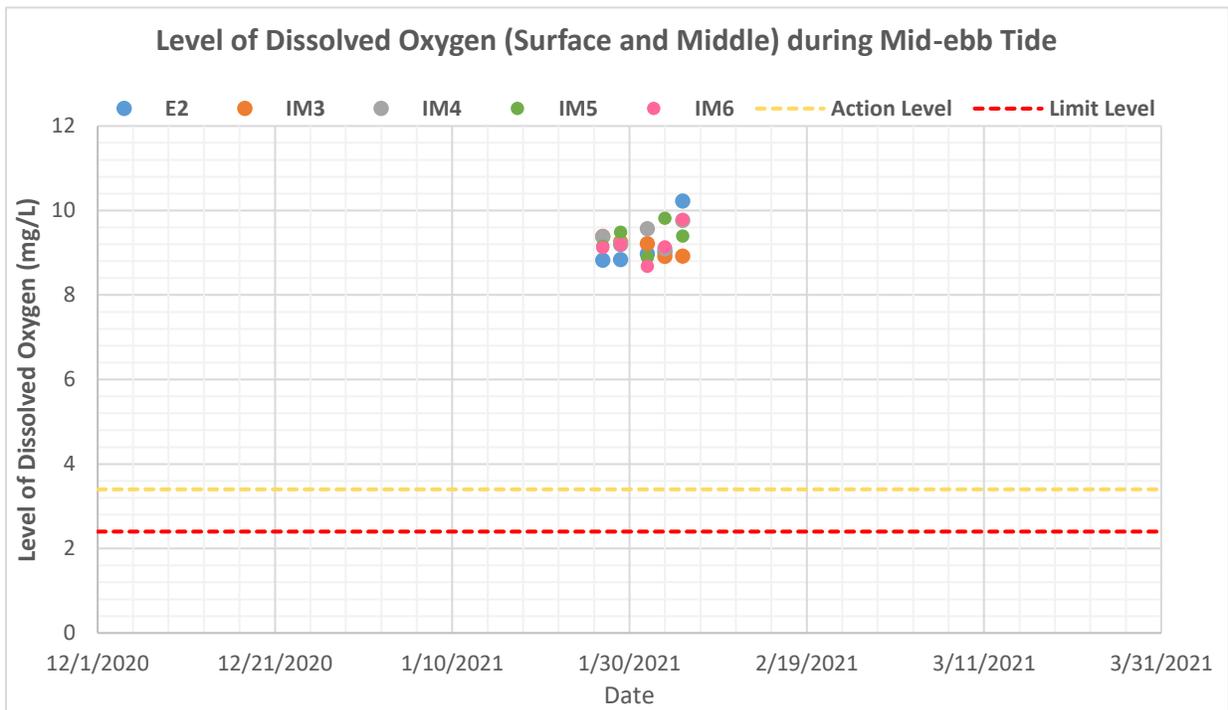


Figure F1a: Levels of Surface and Middle Dissolved Oxygen (mg/L) at control station (E2) and impact stations (IM3-IM6) under Group 2 during mid-ebb tides in the past four months (i.e. December 2020 to March 2021).

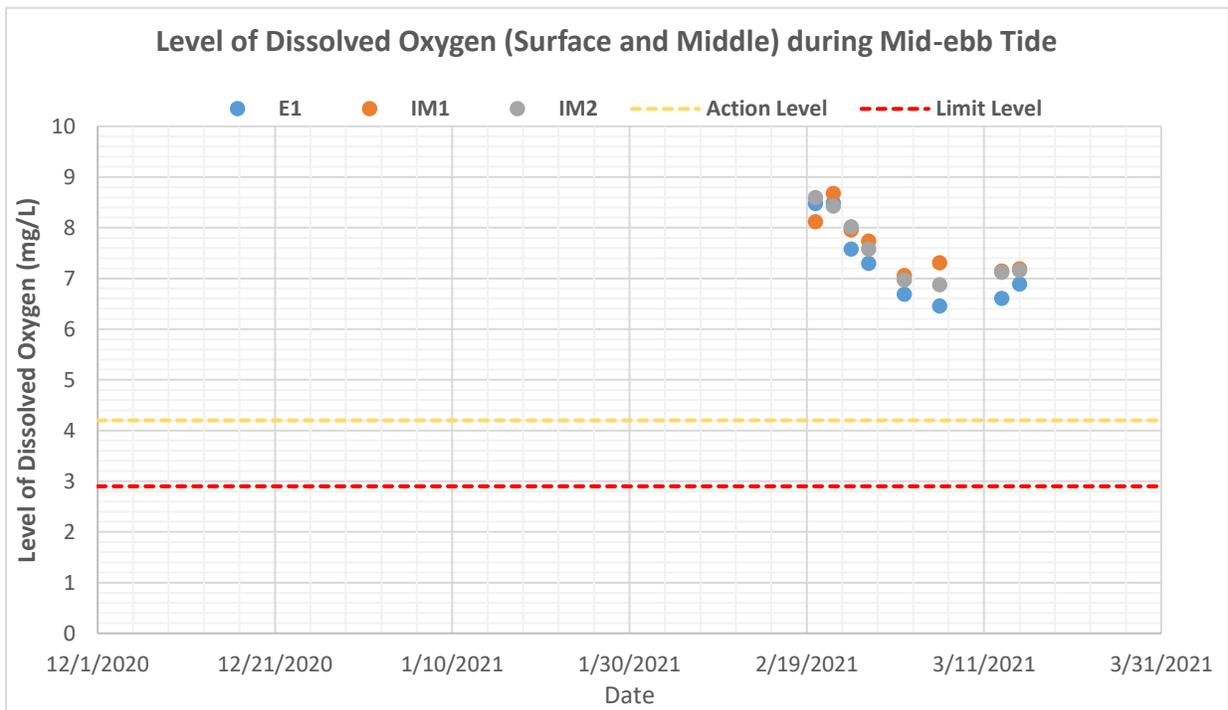


Figure F1b: Levels of Surface and Middle Dissolved Oxygen (mg/L) at control station (E1) and impact stations (IM1-IM2) under Group 1 during mid-ebb tides in the past four months (i.e. December 2020 to March 2021).

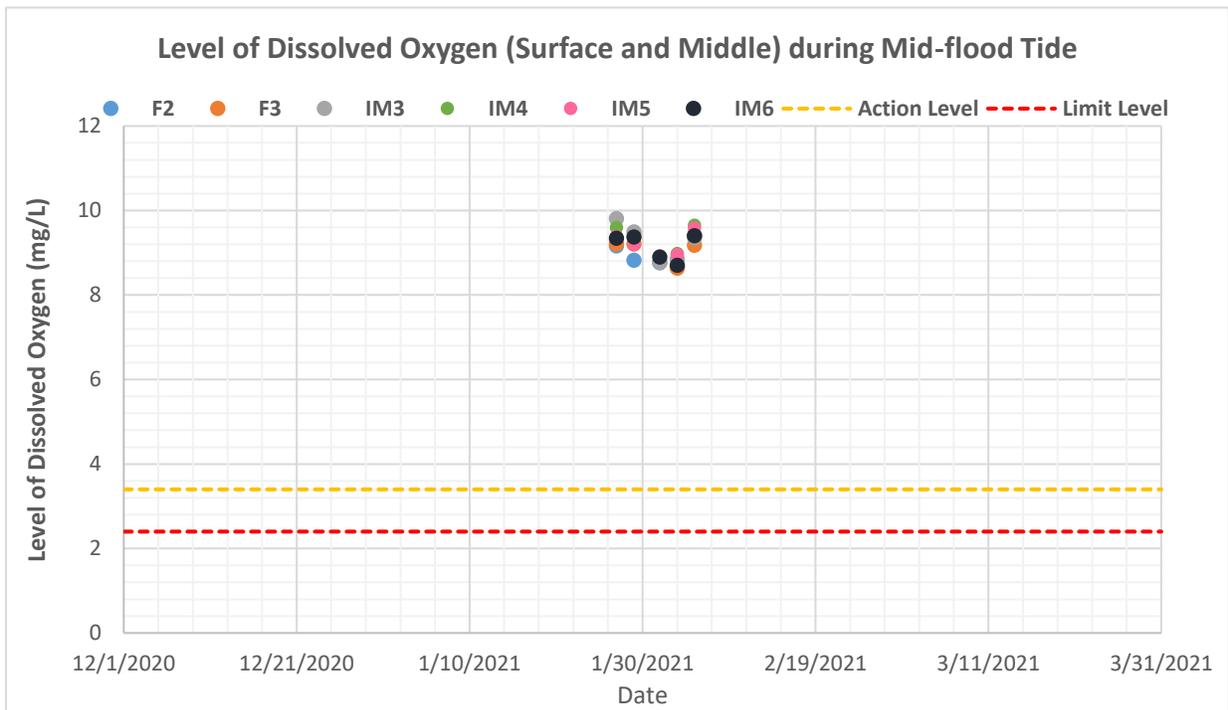


Figure F1c: Levels of Surface and Middle Dissolved Oxygen (mg/L) at control stations (F2-F3) and impact stations (IM3-IM6) under Group 2 during mid-flood tides in the past four months (i.e. December 2020 to March 2021).

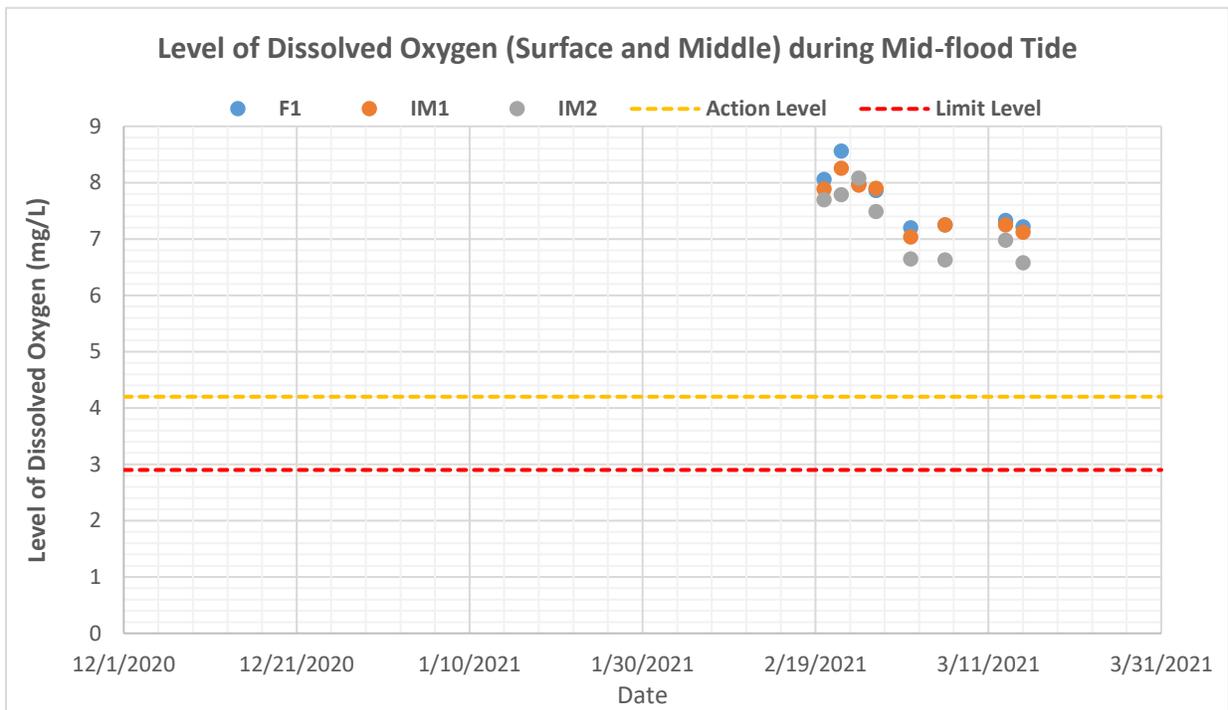


Figure F1d: Levels of Surface and Middle Dissolved Oxygen (mg/L) at control station (F1) and impact stations (IM1-IM2) under Group 1 during mid-flood tides in the past four months (i.e. December 2020 to March 2021).

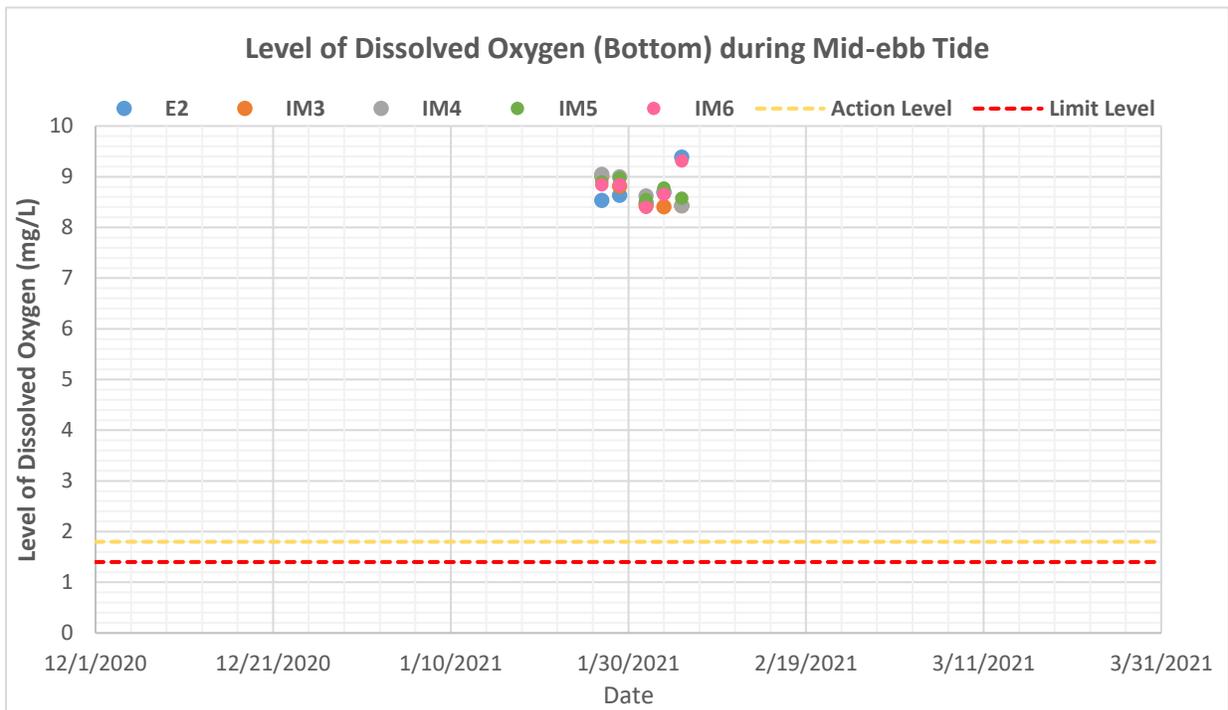


Figure F2a: Levels of Bottom Dissolved Oxygen (mg/L) at control station (E2) and impact stations (IM3-IM6) under Group 2 during mid-ebb tides in the past four months (i.e. December 2020 to March 2021).

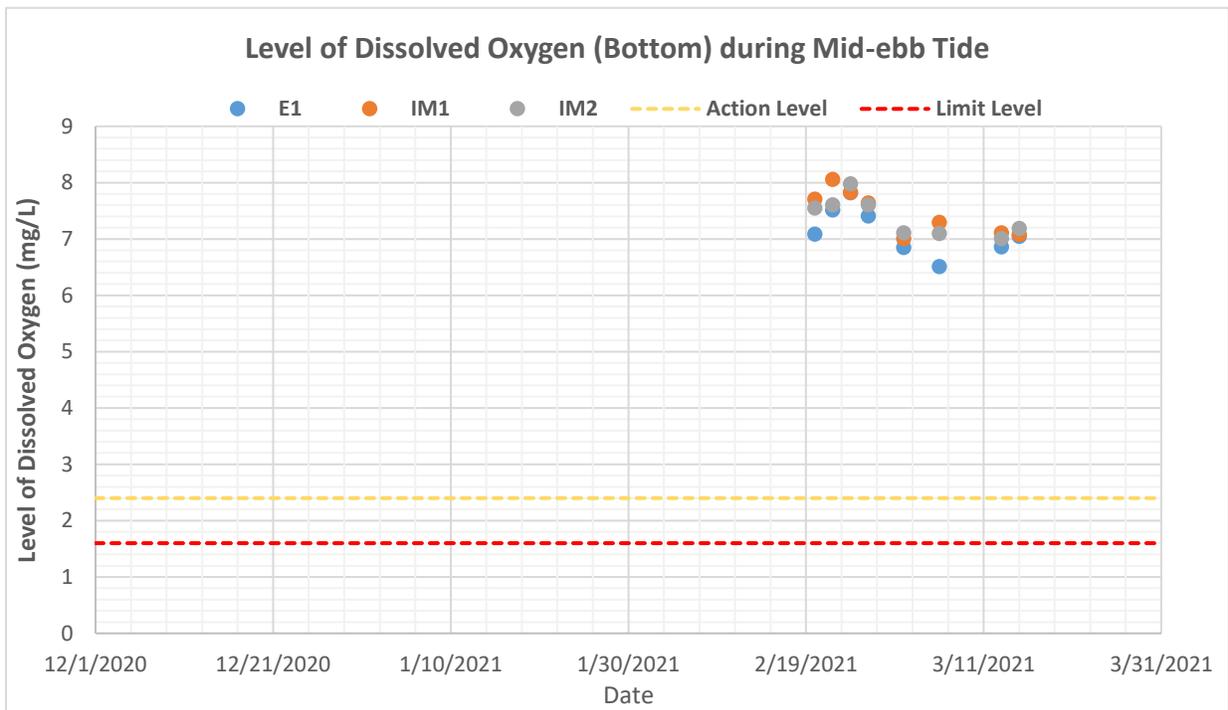


Figure F2b: Levels of Bottom Dissolved Oxygen (mg/L) at control station (E1) and impact stations (IM1-IM2) under Group 1 during mid-ebb tides in the past four months (i.e. December 2020 to March 2021).

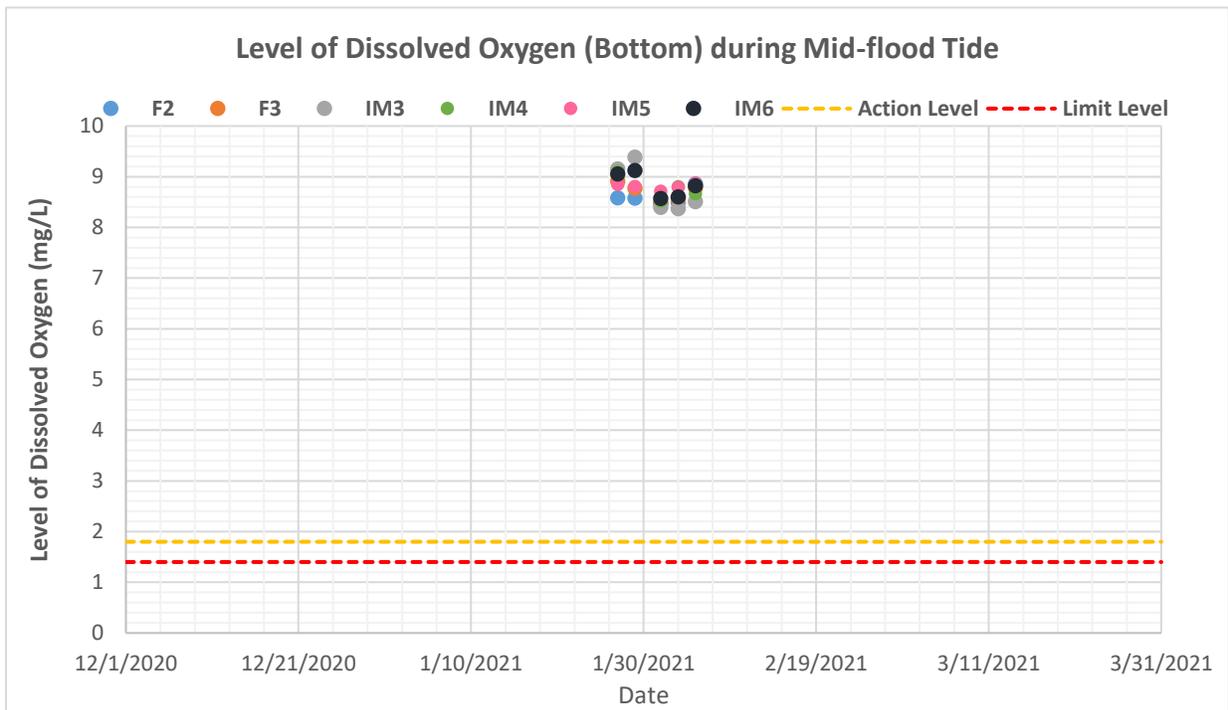


Figure F2c: Levels of Bottom Dissolved Oxygen (mg/L) at control stations (F2-F3) and impact stations (IM3-IM6) under Group 2 during mid-flood tides in the past four months (i.e. December 2020 to March 2021).

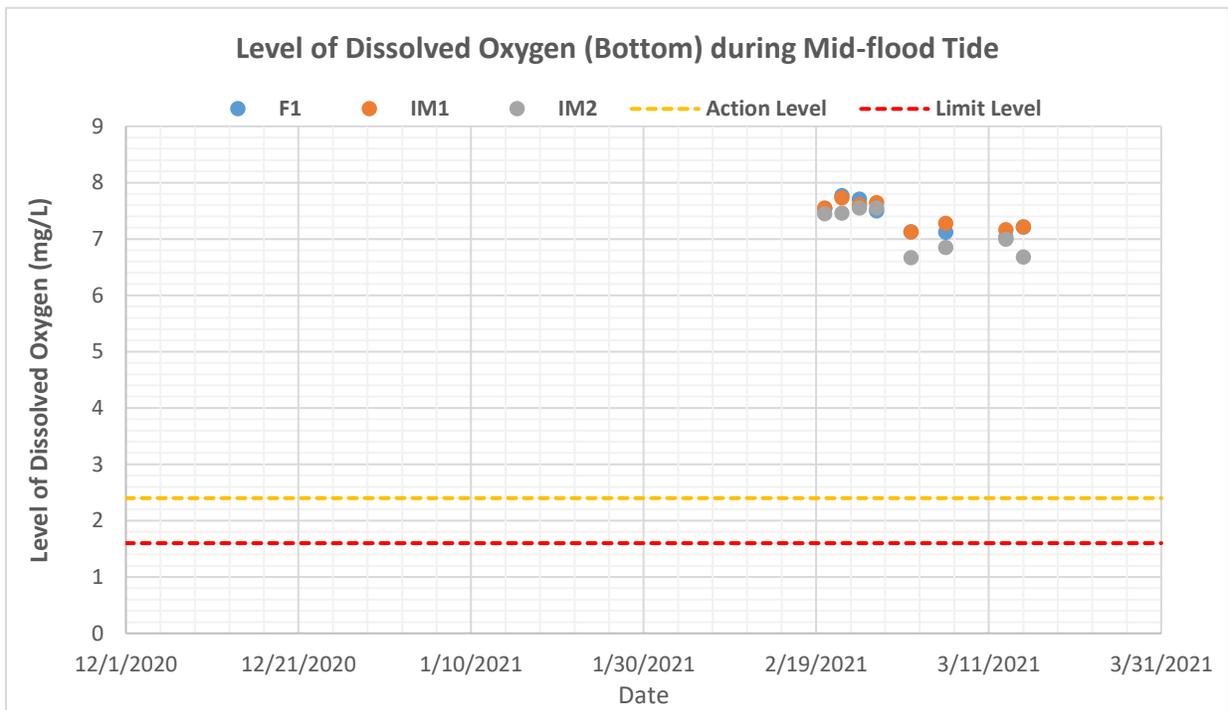


Figure F2d: Levels of Bottom Dissolved Oxygen (mg/L) at control station (F1) and impact stations (IM1-IM2) under Group 1 during mid-flood tides in the past four months (i.e. December 2020 to March 2021).

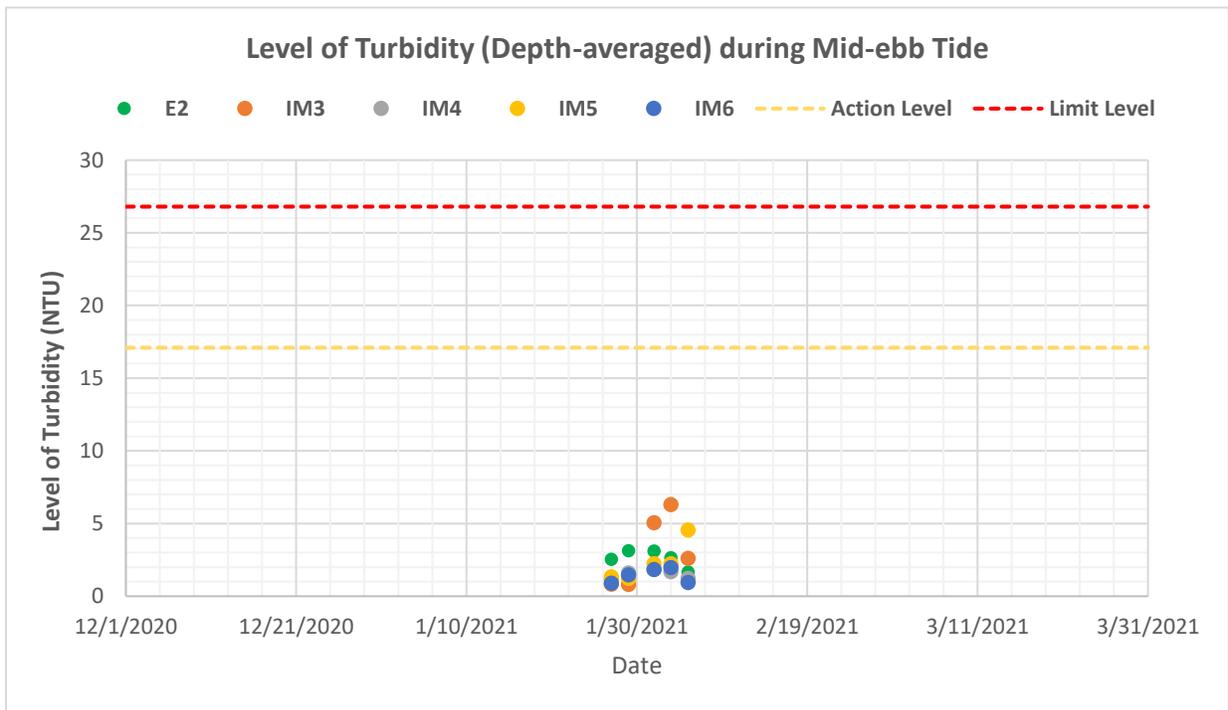


Figure F3a: Levels of Depth-averaged Turbidity (NTU) at control station (E2) and impact stations (IM3-IM6) under Group 2 during mid-ebb tides in the past four months (i.e. December 2020 to March 2021).

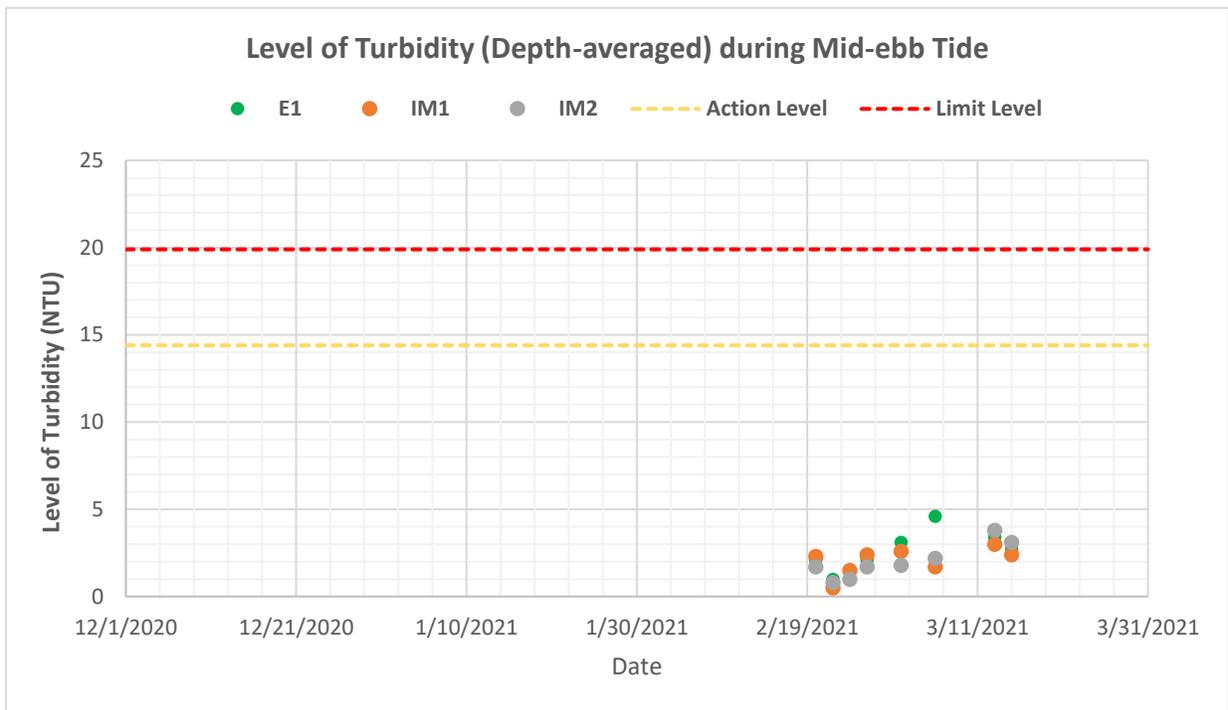


Figure F3b: Levels of Depth-averaged Turbidity (NTU) at control station (E1) and impact stations (IM1-IM2) under Group 1 during mid-ebb tides in the past four months (i.e. December 2020 to March 2021).

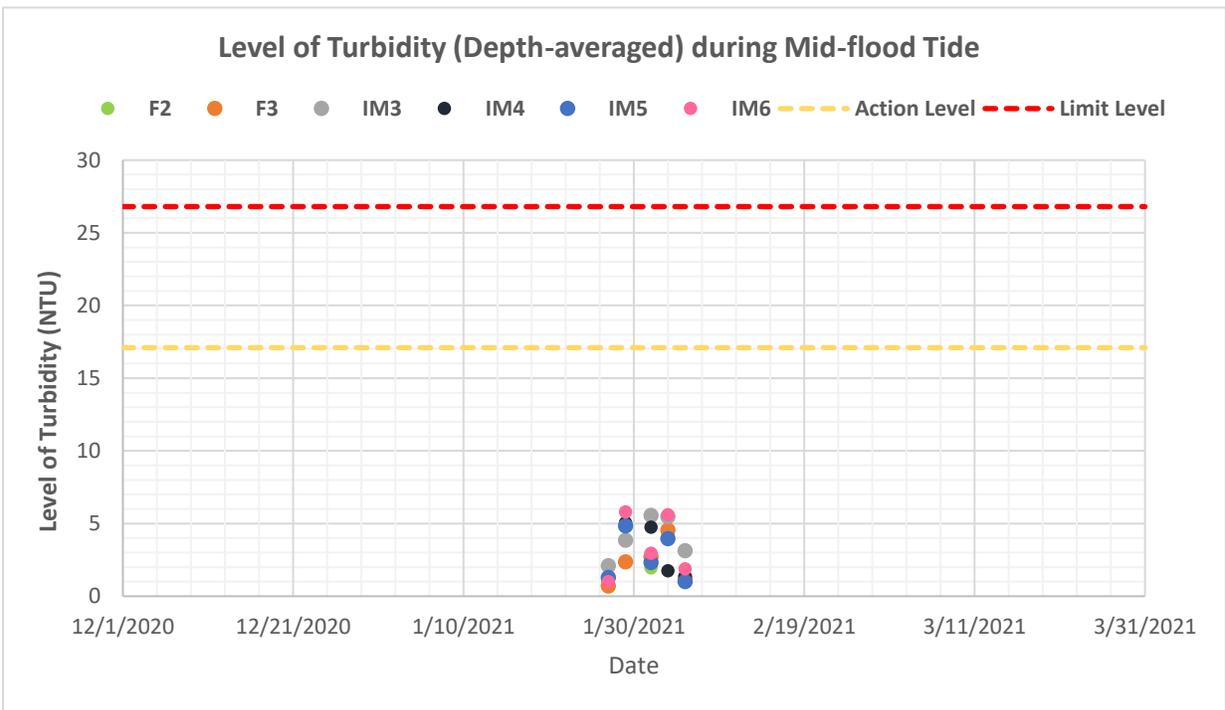


Figure F3c: Levels of Depth-averaged Turbidity (NTU) at control stations (F2-F3) and impact stations (IM3-IM6) under Group 2 during mid-flood tides in the past four months (i.e. December 2020 to March 2021).

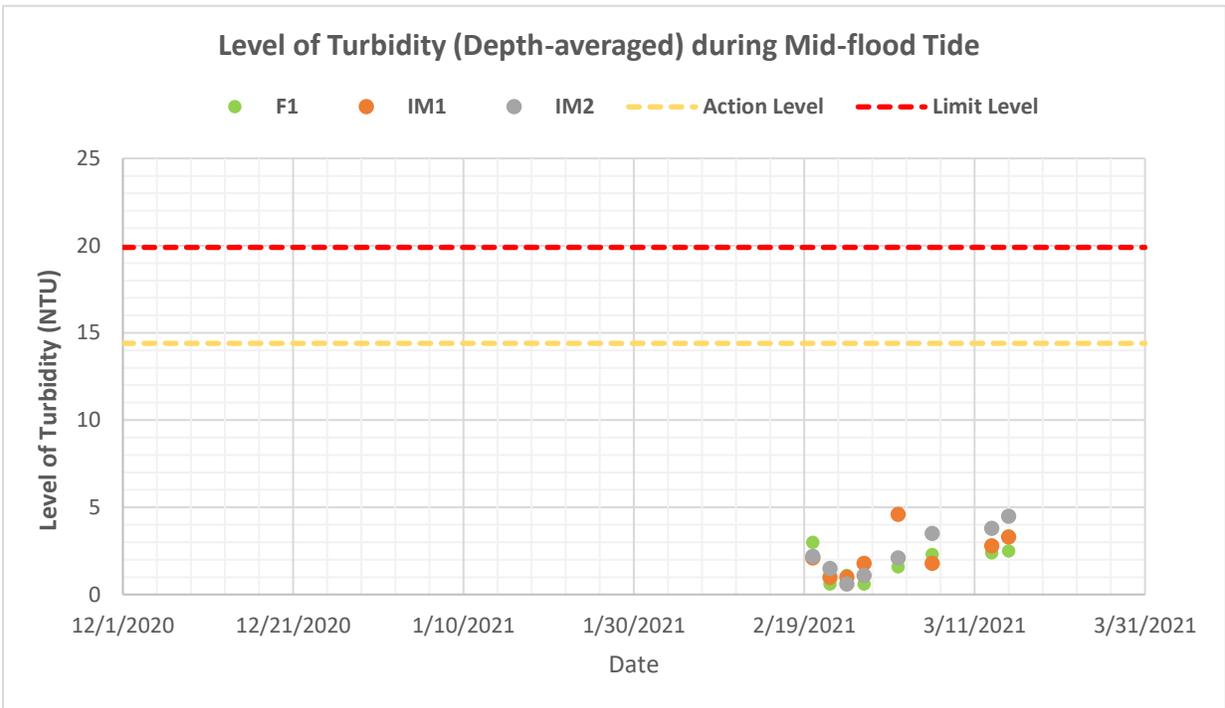


Figure F3d: Levels of Depth-averaged Turbidity (NTU) at control station (F1) and impact stations (IM1-IM2) under Group 1 during mid-flood tides in the past four months (i.e. December 2020 to March 2021).

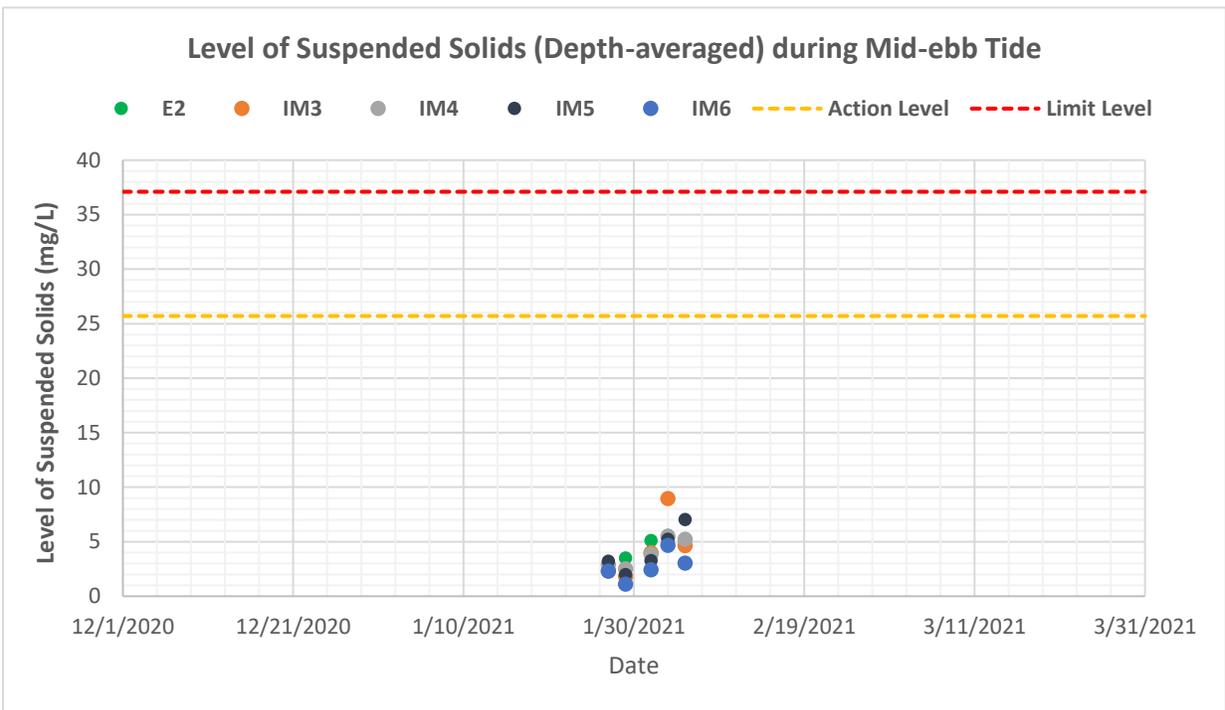


Figure F4a: Levels of Depth-averaged Suspended Solids (mg/L) at control station (E2) and impact stations (IM3-IM6) under Group 2 during mid-ebb tides in the past four months (i.e. December 2020 to March 2021).

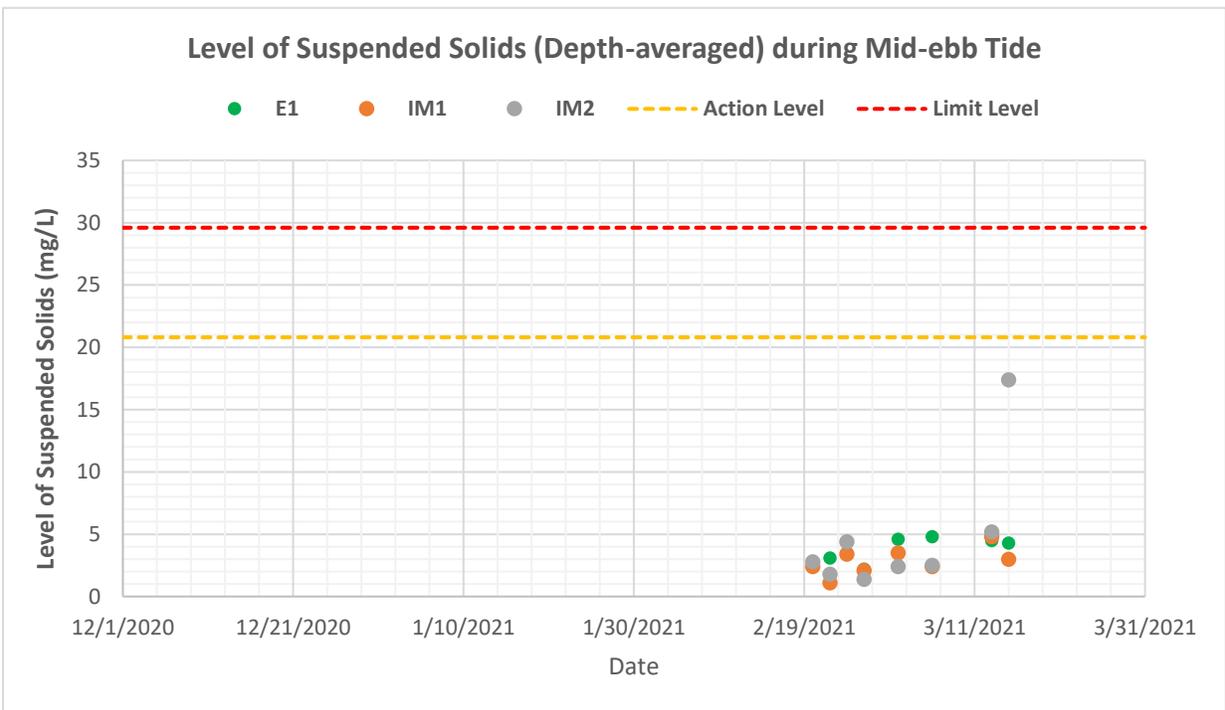


Figure F4b: Levels of Depth-averaged Suspended Solids (mg/L) at control station (E1) and impact stations (IM1-IM2) under Group 1 during mid-ebb tides in the past four months (i.e. December 2020 to March 2021).

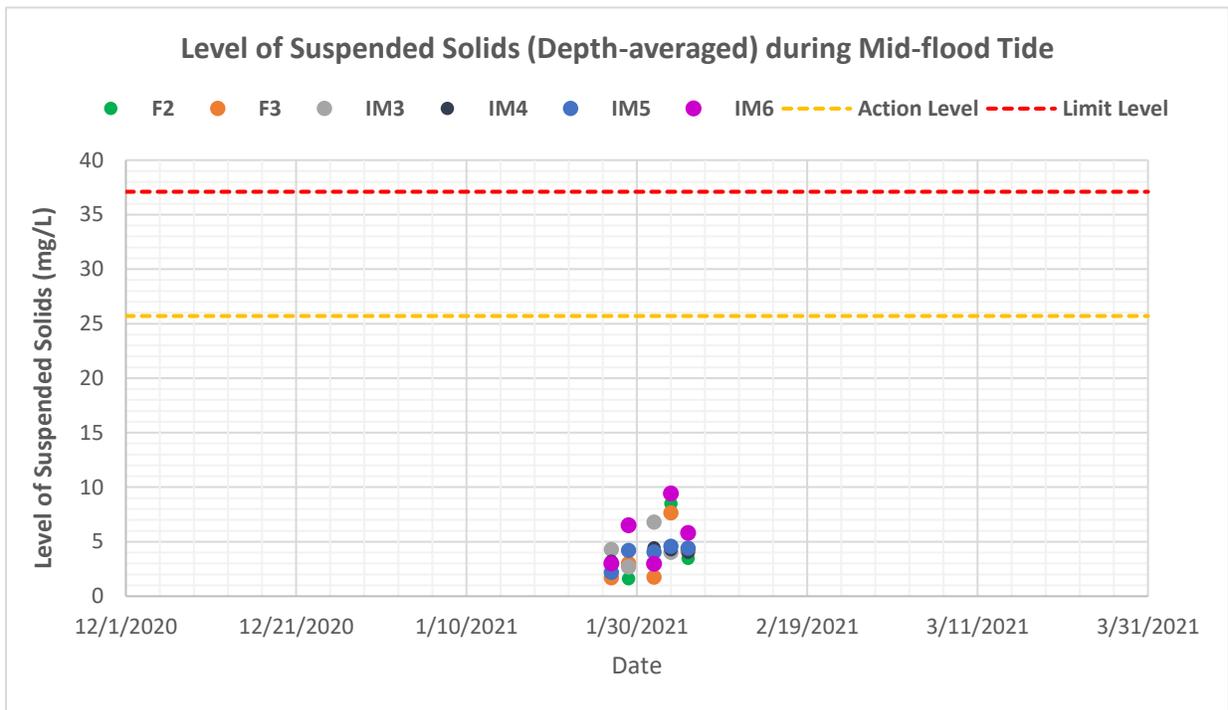


Figure F4c: Levels of Depth-averaged Suspended Solids (mg/L) at control stations (F2-F3) and impact stations (IM3-IM6) under Group 2 during mid-flood tides in the past four months (i.e. December 2020 to March 2021).

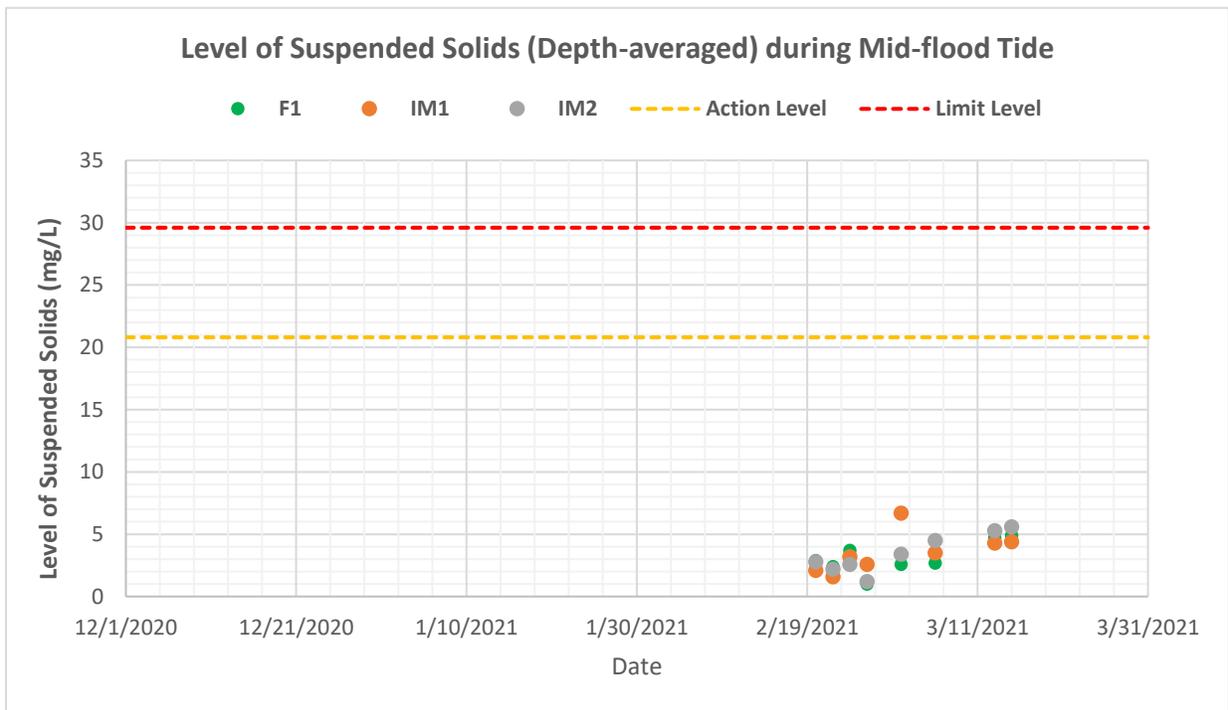


Figure F4d: Levels of Depth-averaged Suspended Solids (mg/L) at control station (F1) and impact stations (IM1-IM2) under Group 1 during mid-flood tides in the past four months (i.e. December 2020 to March 2021).

Notes:

- Key marine-based activities of the Project undertaken for construction of LPS Pipeline included:
 - i. pre-trenching works in terms of dredging operation in the vicinity of marine water quality monitoring stations under Group 2 on 1, 2 and 4 February 2021; and
 - ii. de-burial works by mass flow excavator in the vicinity of marine water quality monitoring stations under Group 1 on 23, 26, 27 February, 5, 6, 13, 14 and 15 March 2021.
- Marine water quality monitoring was conducted at monitoring stations under Group 1 on 20, 22, 24, 26 February, 2, 6, 13 and 15 March 2021; and at monitoring stations under Group 2 on 27, 29 January, 1, 3 and 5 February 2021.
- Weather conditions during the monitoring period ranged from fine to cloudy, with sea conditions ranged from calm to moderate. Detailed meteorological conditions can be referred to *Annex G of the associated Monthly EM&A Reports* for the reporting period.
- No special phenomena and/or other factors which might affect the monitoring results were observed and recorded during the monitoring period.