

MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk



QUARTERLY EM&A REPORT

March 2016 – May 2016

Client : Civil Engineering and Development
Department, HKSAR

Contract No. : KLN/2015/07

Contract Name : Environmental Monitoring Works for
Contract KL/2014/03 – Kai Tak Development
– Stage 3 Infrastructure Works for Developments
at the Southern Part of the Former Runway

Report No. : 0405/15/ED/0491B


EP-337/2009 New Distributor Roads Serving the Planned Kai Tak
Development Area

EP-339/2009/A Decommissioning of the Remaining Parts (Ex-GFS
Building, Radar Station and Hong Kong Aviation Club)
of the former Kai Tak Airport

EP-451/2013 Trunk Road T2

Prepared by : Alfred Y. S. Lam

Reviewed by : Cyrus C. Y. Lai

Certified by : 
Colin K. L. Yung
Environmental Team Leader
MaterialLab Consultants Limit

Ref.: CEDKTDS3EM00_0_0090L.16

13 July 2016

Hyder-Meinhardt Joint Venture
20/F., AXA Tower,
Landmark East,
100 How Ming Street,
Kwun Tong,
Kowloon, Hong Kong

By Post and Email

Attention: Mr. Wong W K, Chris

Dear Mr. Wong,

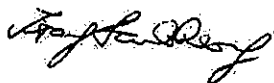
Re: Contract No. KL/2014/03 – Kai Tak Development – Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway Quarterly EM&A Report for March to May 2016

Reference is made to the Environmental Team's submission of the Quarterly EM&A Report for March to May 2016 (Report No. 0405/15/ED/0491B) we received by e-mail on 12 July 2016.

Please be informed that we have no adverse comment on the captioned report.

Thank you for your attention. Please do not hesitate to contact us should you have any queries.

Yours sincerely,
For and on behalf of
Ramboll Environ Hong Kong Limited



F. C. Tsang
Independent Environmental Checker

| | | | |
|------|------------|-----------------------------|----------------|
| c.c. | CEDD | Attn.: Ms. Amy Chu | Fax: 2369 4980 |
| | MateriaLab | Attn.: Mr. Colin K. L. Yung | Fax: 2450 8032 |
| | CRBC | Attn.: Mr. Arnold Chan | Fax: 2283 1689 |

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EXECUTIVE SUMMARY

- i. The Civil Engineering and Development Department HKSAR has appointed Materialab Consultants Limited (MCL) to undertake the Environmental Team services for the Project and implement the EM&A works.
- ii. This is the First Quarterly EM&A Report presents the environmental monitoring and audit works for the period between 26 February 2016 and 31 May 2016. As informed by the Contractor, major activities in the reporting period included:

| February - March 2016 | April 2016 | May 2016 |
|--|---|---|
| <ul style="list-style-type: none"> • Setting up RE site office at Portion WA1; • Carrying out ground investigation and pre-drilling; • Carrying out Condition Survey; • Construction of guide walls at Zone 1; • Setting up Silo Tanks and Bentonite Pools for SUS; • Construction of H piles at Zone 1; • Installation of ground monitoring instruments at Zone 1; • Demolition of foundation at Zone 4; • Construction of hoarding along Shing Fung Road & Shing Cheong Road; • Setting up stockpiling area for drying of slurry and Bentonite at Portion E; and • Tree felling at Portion X. | <ul style="list-style-type: none"> • Carrying out ground investigation and pre-drilling; • Construction of guide walls and D-walls at Zone 1; • Construction of H piles at Zone 1; • Construction of hoarding along Shing Fung Road & Shing Cheong Road; • Construction of garden at Portion WA1; • Construction of temporary manhole at Zone 1 as discharge point; • Implementation of Temporary Traffic Arrangement (TTA) along Cheung Yip Street and Shing Cheong Road; • Setting up wheel washing bay near portion E; and • Setting up waste water treatment system at Zone 1. | <ul style="list-style-type: none"> • Carrying out ground investigation and pre-drilling; • Construction of guide walls and D-walls at Zone 1 & Zone 2; • Construction of H piles at Zone 1; • Demolition of foundation at Zone 4; • Demolition of guard house at Zone 4; • Construction of temporary drainage system at Zone 1; • Construction of subway B; • Construction of hoarding along Shing Fung Road, Shing Cheong Road & Cheung Yip Street; • Implementation of Temporary Traffic Arrangement (TTA) along Cheung Yip Street and Shing Cheong Road; • Erection of scaffolding at Radar Tower; and • Setting up waste water treatment system at Zone 4. |

Breaches of the Action and Limit Levels

- iii. Total 3 no. of Action Level exceedances were recorded in the reporting period. Exceedances were recorded for 24-hr TSP Action Levels at KTD1a and KTD2a on 1 March 2016 and at KTD2a on 30 March 2016. No Limit Level exceedance for 24-hr TSP and no Action and Limit Level exceedance for construction noise were recorded in the reporting period.

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Email : mcl@fugro.com.hk



Complaint, Notification of Summons and Successful Prosecution

- iv. No environmental complaint and no notification of summons and successful prosecution were received in the reporting period.

1. INTRODUCTION

1.1 Background

1.1.1 The Kai Tak Development is located in the south-eastern part of Kowloon Peninsula of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling.

1.1.2 Contract No. KL/2014/03 is the works package to construct an approximately 420m long supporting underground structure (SUS) underneath Shing Cheong Road and Cheung Yip Street. The EM&A programme under this Contract is governed by three EPs (EP-337/2009, EP-339/2009/A and EP-451/2013) and two EM&A Manuals (AEIAR-130/2009 and AEIAR-174/2013). The Works to be executed under this Contract and corresponding EPs include but not be limited to the following main items:

EP-451/2013 – Trunk Road T2

(i) Construction of approximately 420m long supporting underground structure (SUS) including diaphragm walls, barrettes, piled foundation, top and bottom slabs, end wall and adits underneath Shing Cheong Road and Cheung Yip Street;

EP-337/2009 – New Distributor Roads Serving the Planned Kai Tak Development

- (ii) Widening and re-alignment of Cheung Yip Street of approximately 330m long and associated footpaths;
- (iii) Demolition, reconstruction and widening of Shing Cheong Road of approximately 410m long and associated footpaths;
- (iv) Construction of drainage outfall and modification of existing seawall;
- (v) Construction of ancillary works including surface drainage, sewerage, water, fire fighting, street lighting, street furniture, road marking, road signage, utilities and services, irrigation and landscape works.

EP-339/2009/A – Decommissioning of the Remaining Parts (Ex-GFS Building, Radar Station and Hong Kong Aviation Club) of the former Kai Tak Airport

(vi) Demolition of RADAR Tower and guard house;

Other works not covered by any EP

- (vii) Construction of two subways between Phase II of New Acute Hospital (Site A) and Hong Kong Children's Hospital (Site C), and between Phase I of New Acute Hospital (Site B) and Site C;
- (viii) Construction of District Cooling System (DCS) along Cheung Yip Street and Shing Cheong Road

1.1.3 The location and boundary of the site is shown in **Figure 1**.

1.1.4 This Quarterly EM&A report is required under Section 16.1.2 and 16.7.1 of the EM&A Manual AEIAR-130/2009. It is to report the results and findings of the EM&A programme required in the EM&A Manual.

1.1.5 This is the first quarterly EM&A Report which summaries the impact monitoring results and audit findings for the Project within the period between 26 February 2016 and 31 May 2016.

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Email : mcl@fugro.com.hk

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1.2 Project Organization

1.2.1 The project proponent was the Civil Engineering and Development Department, HKSAR (CEDD). Hyder Meinhardt Joint Venture (HMJV) was commissioned by CEDD as the Engineer for the Project. Ramboll Environ Hong Kong Limited was commissioned as the Independent Environmental Checker (IEC). China Road and Bridge Corporation (Hong Kong) (CRBC) was appointed as the main contractor for the construction works under the contract KL/2014/03. Materialab Consultants Limited (MCL) was appointed as the Environmental Team (ET) by CEDD to implement the EM&A programme for the Project.

1.2.2 The organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project are summarized in **Table 1.1**.

Table 1.1 Contact Information of Key Personnel

| Party | Position | Name | Telephone | Fax |
|---|-----------------------------------|--------------------------|-----------|-----------|
| Project Proponent (CEDD) | Co-ordinator | Ms. Amy Chu | 3106 3172 | 2369 4980 |
| Engineer's Representative (HMJV) | Chief Resident Engineer | Mr. W. K., Chris Wong | 2911 2233 | 2805 5028 |
| IEC (Ramboll Environ Hong Kong Limited) | Independent Environmental Checker | Mr. F. C. Tsang | 3465 2888 | 3465 2899 |
| Main Contractor (CRBC) | Site Agent | Mr. Chan See Wai, Arnold | 9380 4110 | 2283 1689 |
| | Environmental Officer | Mr. Wong Tan Tat | 9492 5918 | 2283 1689 |
| ET (MCL) | Environmental Team Leader | Mr. Colin Yung | 3565 4114 | 3565 4160 |

1.3 Construction Programme and Activities

1.3.1 The construction of the Project commenced in February 2016 and is expected to complete in 2020. The construction programme is shown in **Appendix A**.

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Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

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Fax : (852)-24508032
Email : mcl@fugro.com.hk

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1.3.2 A summary of the major construction activities undertaken in the reporting period were:

| February - March 2016 | April 2016 | May 2016 |
|--|---|---|
| <ul style="list-style-type: none">• Setting up RE site office at Portion WA1;• Carrying out ground investigation and pre-drilling;• Carrying out Condition Survey;• Construction of guide walls at Zone 1;• Setting up Silo Tanks and Bentonite Pools for SUS;• Construction of H piles at Zone 1;• Installation of ground monitoring instruments at Zone 1;• Demolition of foundation at Zone 4;• Construction of hoarding along Shing Fung Road & Shing Cheong Road;• Setting up stockpiling area for drying of slurry and Bentonite at Portion E; and• Tree felling at Portion X. | <ul style="list-style-type: none">• Carrying out ground investigation and pre-drilling;• Construction of guide walls and D-walls at Zone 1;• Construction of H piles at Zone 1;• Construction of hoarding along Shing Fung Road & Shing Cheong Road;• Construction of garden at Portion WA1;• Construction of temporary manhole at Zone 1 as discharge point;• Implementation of Temporary Traffic Arrangement (TTA) along Cheung Yip Street and Shing Cheong Road;• Setting up wheel washing bay near portion E; and• Setting up waste water treatment system at Zone 1. | <ul style="list-style-type: none">• Carrying out ground investigation and pre-drilling;• Construction of guide walls and D-walls at Zone 1 & Zone 2;• Construction of H piles at Zone 1;• Demolition of foundation at Zone 4;• Demolition of guard house at Zone 4;• Construction of temporary drainage system at Zone 1;• Construction of subway B;• Construction of hoarding along Shing Fung Road, Shing Cheong Road & Cheung Yip Street;• Implementation of Temporary Traffic Arrangement (TTA) along Cheung Yip Street and Shing Cheong Road;• Erection of scaffolding at Radar Tower; and• Setting up waste water treatment system at Zone 4. |

2. SUMMARY OF EM&A REQUIREMENTS AND MONITORING RESULTS

2.1 Monitoring Requirement

In accordance with the approved EM&A Manuals, 24-hour Total Suspended Particulates (TSP) level and Leq (30min) at the designated monitoring stations is required. Impact 24-hour TSP monitoring should be carried out at least once every 6 days. In case of complaints, 1-hour TSP monitoring should be carried out at least 3 times per 6 days when the highest dust impacts are likely to occur. Leq (30min) monitoring is conducted for at least once a week during the construction phase between 0700 and 1900 on normal weekdays. The Action and Limit Levels of the air quality monitoring and noise monitoring are given in **Appendix C**

2.2 Monitoring Locations

2.2.1 According to the EM&A Manual, three monitoring locations for air quality monitoring and noise monitoring, namely KTD1, KTD2 and KER1, are covered by this Contract within the South Apron Area of Former Kai Tak Airport. The other two air quality monitoring locations and two noise monitoring locations which are identified in Cha Kwo Ling area, are farther than 500m and 300m away from the site boundary respectively and thus not covered by this Contract. The monitoring works in Cha Kwo Ling area are covered by other Contract(s) respectively.

2.2.2 According to the approved alternative baseline air quality and noise monitoring locations (EPD reference: EP2/K19/A/21 Pt.5), the original monitoring locations (KTD1, KTD2 and KER1) are proposed to be replaced by alternative monitoring locations (KTD1a, KTD2a and KER1a), they are summarized in **Table 2.1** and shown in **Figure 2**.

Table 2.1 Location of Air Quality Monitoring and Noise Monitoring Station

| Monitoring Station | Location |
|--------------------|--|
| KTD1a | Centre of Excellence in Paediatrics (Children's Hospital) |
| KTD2a | G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1) |
| KER1a | Site Boundary at Cheung Yip Street |

2.3 Results and Observations

2.3.1 Total 3 no. of Action Level exceedances were recorded in the reporting period. Exceedances were recorded for 24-hr TSP Action Levels at KTD1a and KTD2a on 1 March 2016 and at KTD2a on 30 March 2016. No Limit Level exceedance for 24-hr TSP and no Action and Limit Level exceedance for construction noise were recorded.

2.3.2 On 1 March 2016, at KTD1a, non-project related construction activities were observed next to the monitoring location, also traffic was observed along Shing Fung Road. Thus, it is considered that this exceedance is not project related. No exceedance is recorded in the following monitoring conducted on 7 March 2016.

2.3.3 On 1 March 2016, at KTD2a, non-project related traffic was observed along Kwun Tong Bypass, and dust generation was also observed from non-project related construction activities. Within the Project site, loading and unloading of C&D wastes in Portion E and vehicular movement in Portion B were observed. Mitigation measures, including watering and cover of stockpiles of dusty materials were implemented and thus the project impact on the exceedance is not considered significant. Thus the exceedance is considered not related to project. No exceedance is recorded in the following monitoring conducted on 7 March 2016.

MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

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- 2.3.4 On 30 March 2016, exceedance was found at KTD2a but not at KTD1a and KER1a, however significant increase of 24-hr TSP results were observed when comparing with the data collected on 24 March 2016 at KTD1a and KER1a. According to the Contractor and ER, similar construction activities were undertaken on 24 and 30 March 2016. KER1a is located far away (approx. 500m) from the major construction works conducted during monitoring, and thus considered less affected by the construction works. The significant increase at KER1a from 24 to 30 March 2016 indicated the change of ambient air condition may contribute to the high level of monitoring results. Though ambient air condition and weather condition may contribute to the exceedance and Contractor had provided some photos records showing mitigation measures on dust suppression control, including watering the haul road and covering the open stockpiles, however according to the observation in the site inspections on 31 March 2016 and 7 April 2016, watering and washing can be enhanced at the haul road and vehicles to further suppress fugitive dust. Therefore, the result was considered to be combined effect of poor ambient air conditions and the works of this project and other construction sites nearby. Under the scope of impact monitoring, it is still defined as project related. Contractor was reminded to strictly follow all the EP conditions and provide sufficient mitigation measures as recommended in approved EIA Reports.
- 2.3.5 No Action / Limit Level exceedance was recorded for construction noise in the reporting period.
- 2.3.6 No complaint of air quality was received. Therefore, no impact 1-hour TSP monitoring was conducted in the reporting period.
- 2.3.7 No raining and wind with speed over 5 m/s was observed during noise monitoring according to the onsite observation..
- 2.3.8 During the reporting period, major dust sources including loading and unloading of C&D wastes, vehicles movement were observed in the site. Major noise sources including noise emission from plant & PME and some other construction activities, travel of vehicles, loading and unloading of C&D waste were observed in the site. Non-project related construction activities at the nearby construction site and road traffic along Shing Cheong Road, Cheung Yip Street and the Kwun Tong By-pass were observed. The above factors may affect the monitoring results.
- 2.3.9 Graphical presentation of the monitoring data in the reporting period is presented in **Appendix D**.
- 2.4 Comparison of Monitoring Results with EIA Predictions**
- 2.4.1 The monitoring data was compared with the EIA predictions as summarized in **Table 2.4** and **Table 2.5**.

Table 2.4 Comparison of 24-hr TSP data with EIA predictions

| Monitoring Station | Receiver Reference | Predicted Maximum 24-hour TSP Concentration ($\mu\text{g}/\text{m}^3$) | 24-hour TSP concentration in Reporting Period ($\mu\text{g}/\text{m}^3$) | | | Average 24-hour TSP concentration in Reporting Period ($\mu\text{g}/\text{m}^3$) | | |
|--------------------|--------------------|--|--|------------|----------|--|------------|----------|
| | | | February-March 2016 | April 2016 | May 2016 | February-March 2016 | April 2016 | May 2016 |
| KTD1a | KTD3 | 126 | 44 – 208 | 61 – 105 | 47 – 106 | 110 | 79 | 64 |
| KTD2a | - | - | 51 – 205 | 39 – 138 | 23 – 79 | 119 | 86 | 45 |
| KER1a | KTD6 | 169 | 53 – 150 | 38 – 83 | 47 – 110 | 88 | 62 | 85 |

Note:

For KTD2a, there was no receiver reference in the EIA report, EIAR-174/2013.

Predicted Maximum TSP Concentration extracted from Table 4.14 of EIA Report, EIAR-174/2013.

Table 2.5 Comparison of Noise Monitoring data with EIA predictions

| Monitoring Station | Receiver Reference | Maximum Predicted Mitigated Construction Noise Level dB(A) | Leq(30min) dB(A) in Reporting Period | | |
|--------------------|--------------------|--|--------------------------------------|------------|----------|
| | | | February-March 2016 | April 2016 | May 2016 |
| KTD1a | KTD1 | 74 | 54 - 73 | 66 - 71 | 65 - 71 |
| KTD2a | KTD2 | 75 | 53 - 70 | 56 - 64 | 58 - 63 |
| KER1a | KER1 | 75 | 60 - 74 | 60 - 74 | 68 - 69 |

Note:

Maximum Predicted Mitigated Construction Noise Level extracted from Table 5.13 of EIA Report, EIAR-174/2013.

- 2.4.2 The 24-hour TSP concentration of KER1a was below the Predicted Maximum 24-hr TSP concentration. However for the the 24-hour TSP monitoring results of KTD1a, two monitoring results, on 1 March 2016 and 30 March 2016, exceeded the prediction in the approved Environmental Impact Assessment (EIA) Report and the Action Level exceedance was found on 1 March 2016, but based on the finding from the investigation, the recorded exceedance case was not related to the project.
- 2.4.3 The discrepancy between the 24-hour TSP concentration and EIA Prediction in KTD1a is considered due to dust source from the non-project related construction activities near the monitoring location and the road travel along Shing Fung Road.
- 2.4.4 The impact noise monitoring results in the reporting month were below the Maximum Predicted Mitigated Construction Noise Level in the approved Environmental Impact Assessment (EIA) Report and no Action / Limit Level exceedance was recorded in the reporting period.

2.5 Quarterly Review of Construction Impacts on Air Quality and Noise

- 2.5.1 As no exceedance was found in construction noise monitoring during the reporting period, statistical analysis was performed only on the 24-hour TSP monitoring. The construction impact on air quality was assessed by comparing the quarterly mean values of 24-hour TSP results with the their relative baseline mean values. Monitoring stations with higher quarterly impact data are statistically compared to its baseline levels to assess the constructional impacts. Results are summarized in **Table 2.6**.

Table 2.6 Comparison of Quarterly Mean to Baseline Mean

| Monitoring Station | Average 24hr TSP $\mu\text{g}/\text{m}^3$ | | |
|--------------------|---|------------------------|--|
| | Baseline | March 2016 May 2016 | Quarterly Impact Larger than Baseline |
| KTD1a | 73 | 86 | yes |
| KTD2a | 42 | 85 | yes |
| KER1a | 65 | 79 | yes |

2.5.2 Quarterly means of 24-hour TSP at KTD1a, KTD2a and KER1a are compared to their baseline level respectively. Results show no significant difference between the quarterly means of KTD1a and KER1a with their baseline means respectively ($p \geq 0.05$). The quarterly mean of KTD2a is significantly larger than its baseline mean ($p < 0.05$), but far below than its Action Level ($157 \mu\text{g}/\text{m}^3$), indicate that the quarterly construction impact is not significant. Details of key statistical analysis results are provided in **Appendix H**.

MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,

Profit Industrial Building,

1-15 Kwai Fung Crescent, Kwai Fong,

Hong Kong..

Tel : (852)-24508238

Fax : (852)-24508032

Email : mcl@fugro.com.hk

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3. LANDSCAPE AND VISUAL

3.1 Results and Observations

3.1.1 To monitor and audit the implementation of landscape and visual mitigation measures, 13 weekly Landscape and Visual Site audits were carried out and 7 of them were carried out by a Registered Landscape Architect. The weekly Landscape and Visual Impact reports were counter-signed by IEC as according to the requirement of EM&A Manual (AEIAR-130/2009).

3.1.2 Total 1 no. of non-compliance was recorded in the weekly Landscape and Visual Site audits in the reporting period. Open stockpile was found to not being covered properly during the landscape and visual impact site inspection on 24 March 2016. The case was rectified on 30 March 2016 and during the site inspection on 31 March 2016. Other than this, no non-compliance of the landscape and visual impact was recorded in the reporting period.

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Room 723 & 725, 7/F, Block B,

Profit Industrial Building,

1-15 Kwai Fung Crescent, Kwai Fong,

Hong Kong.

Tel : (852)-24508238

Fax : (852)-24508032

Email : mcl@fugro.com.hk

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4. WASTE MANAGEMENT

4.1 Results and Observations

- 4.1.1 C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.
- 4.1.2 The amount of wastes generated by the site activities in the reporting period is shown in **Appendix E**.
- 4.1.3 The Contractor is advised to properly maintain on site C&D materials and wastes collection, sorting and recording system and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.
- 4.1.4 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

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5. SITE INSPECTION

5.1 Site Inspection

- 5.1.1 Site inspections were carried out weekly to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. A summary of the mitigation measures implementation schedule is provided in **Appendix F**.
- 5.1.2 In the reporting month, 13 site inspections were carried out on. Five of them were the joint inspections with the IEC, ER, the Contractor and the ET.
- 5.1.3 No outstanding issues were reported during the reporting period.
- 5.1.4 All the follow-up actions requested by Contractor's ET and IEC during the site inspections were undertaken as reported by the Contractor and confirmed in the following weekly site inspection conducted during the reporting month.
- 5.1.5 Details of observations recorded during the site inspections are presented in **Table 5.1**.

Table 5.1 Observations and Recommendations of Site Audit

| Parameters | Date | Observations and Recommendations | Follow-up |
|-------------|---------------|---|--|
| Air Quality | 16 March 2016 | Watering shall be provided in haul road area and in the stockpile storage area in portion E. | The item was rectified by the Contractor and inspected on 24 March 2016. |
| | 24 March 2016 | Open stockpile shall be covered properly with impermeable sheeting in Portion B | The item was rectified by the Contractor and inspected on 31 March 2016. |
| | 31 March 2016 | Dusty haul road was observed when vehicle was passing near Portion E. Watering shall be applied to maintain the entire haul road surface wet. | The item was rectified by the Contractor and inspected on 6 April 2016. |
| | 31 March 2016 | The Contractor is reminded that the excavated materials should not be loaded from a level higher than the side in Portion Q and tail boards and should be covered by tarpaulin. | The item was rectified by the Contractor and inspected on 6 April 2016. |
| | 7 April 2016 | Watering spraying frequency shall be increased to keep the entire haul road surface wet in Portion B, E and Portion N. | The item was rectified by the Contractor and inspected on 14 April 2016. |
| Noise | 10 March 2016 | Instead of the impermeable sheeting, acoustic fabric shall be used for the piling system or breaker, etc. in Portion X | The item was rectified by the Contractor and inspected on 16 March 2016. |
| | 14 April 2016 | Appropriate and effective acoustic fabric should be used for the breaker machine in Portion X. | The item was rectified by the Contractor and inspected on 21 April 2016. |
| | 21 April 2016 | Appropriate and effective | The item was rectified by the |

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Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

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| Parameters | Date | Observations and Recommendations | Follow-up |
|---------------|---------------|--|--|
| | | acoustic fabric should be used for the breaker machine in Portion Q. | Contractor and inspected on 28 April 2016. |
| | 5 May 2016 | Noise absorbing material shall be provided to wrap the breaker which operating in Portion N. | The item was rectified by the Contractor and inspected on 12 May 2016. |
| | 18 May 2016 | Noise absorbing material shall be provided to wrap the breaker which operating in Portion C. | The item was rectified by the Contractor and inspected on 26 May 2016. |
| | 26 May 2016 | Noise absorbing material shall be provided to wrap the breaker which operating in Portion Q. | The item was rectified by the Contractor and inspected on 2 June 2016. |
| Water Quality | 10 March 2016 | Construction runoff and overflow to the public access road shall be avoided by using sediment traps or sand bags in Portion B. | The item was rectified by the Contractor and inspected on 16 March 2016. |
| | 10 March 2016 | Silt retention pond, sediment basins, and baffles should be incorporated with temporary ditches or permanent drainage in Portion Q to facilitate runoff discharge and enhance deposition rate. The facilities shall be provided before storm season. | The item was rectified by the Contractor and inspected on 24 March 2016. |
| | 16 March 2016 | Silt retention pond, sediment basins, and baffles should be incorporated with temporary ditches or permanent drainage in Zone 4 to facilitate runoff discharge and enhance deposition rate. The facilities shall be provided before storm season. | The item was rectified by the Contractor and inspected on 24 March 2016. |
| | 16 March 2016 | Stagnant water in the drip tray of the power generator shall be removed in Portion B | The item was rectified by the Contractor and inspected on 24 March 2016. |
| | 24 March 2016 | Stagnant water shall be removed in Portion E and M | The item was rectified by the Contractor and inspected on 31 March 2016. |
| | 7 April 2016 | Stagnant water on the ground and inside the drip tray shall be removed regularly in Portion N. | The items were rectified by the Contractor and inspected on 14 April 2016. |
| | 21 April 2016 | Stagnant water inside the drip tray shall be removed regularly in Portion N. | The items were rectified by the Contractor and inspected on 28 April 2016. |
| | 28 April 2016 | Stagnant water on the ground shall be removed properly and regularly in Portion M. | The items were rectified by the Contractor and inspected on 5 May 2016. |

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Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

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Fax : (852)-24508032
Email : mcl@fugro.com.hk



| Parameters | Date | Observations and Recommendations | Follow-up |
|-------------------------------|---------------|--|--|
| | 5 May 2016 | Stagnant water in the drip tray shall be removed regularly in Portion N. | The items were rectified by the Contractor and inspected on 12 May 2016. |
| Chemical and Waste Management | 3 March 2016 | The used oil/fuel shall be stored properly in Portion F. | The item was rectified by the Contractor and inspected on 10 March 2016. |
| | 31 March 2016 | Oil spillage was observed from the idling machinery at Portion B. | The item was rectified by the Contractor and inspected on 6 April 2016. |
| | 14 April 2016 | General refuse should be stored in enclosed bins or compaction units separate from C&D material. Effective collection and storage methods of site wastes would be required to prevent creating odour nuisance or pest problem. The skip should be covered in Portion Q. | The item was rectified by the Contractor and inspected on 21 April 2016. |
| | 21 April 2016 | C&D wastes stored in the skip should be collected regularly to prevent overload in Portion B. | The item was rectified by the Contractor and inspected on 28 April 2016. |
| | 26 May 2016 | Bags of general refuse were observed without appropriated container in Portion A next to the site office. General refuse should be stored in enclosed bins. Effective collection and storage methods shall be provided to prevent waste materials from being blown around by wind or creating odour nuisance or pest and vermin problem. | The item was rectified by the Contractor and inspected on 2 June 2016. |
| | 26 May 2016 | No sorting of wastes was observed in the recycling bin in Portion A next to the site office. Contractor was reminded to segregate different types of waste in different containers to enhance reuse or recycling of materials and their proper disposal. | The item was rectified by the Contractor and inspected on 2 June 2016. |
| Land Contamination | NA | | |
| Landscape and Visual Impact | 24 March 2016 | Open stockpile was not covered properly in Portion B. | The item was rectified by the Contractor and inspected on 31 March 2016. |
| General Condition | NA | | |

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Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk



6. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

6.1 Environmental Exceedance

6.1.1 Total 3 no. of Action Level exceedances were recorded in the reporting period. Exceedances were recorded for 24-hr TSP Action Levels at KTD1a and KTD2a on 1 March 2016 and at KTD2a on 30 March 2016. No Limit Level exceedance for 24-hr TSP and no Action and Limit Level exceedance for construction noise were recorded in the reporting period. Number of exceedance in the reporting period was summarized in Table 6.1.

Table 6.1 Summary of Exceedance in Reporting Period

| Monitoring Station | | Number of exceedance in the reporting period | | | | | | Total |
|--------------------|----|--|------------|----------|---------------------|------------|----------|-------|
| | | 24hr TSP, $\mu\text{g}/\text{m}^3$ | | | Leq (30min) dB(A) | | | |
| | | February-March 2016 | April 2016 | May 2016 | February-March 2016 | April 2016 | May 2016 | |
| KTD1a | AL | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| | LL | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| KTD2a | AL | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| | LL | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| KER1a | AL | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | LL | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | AL | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| | LL | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

6.2 Complaints, Notification of Summons and Prosecution

6.2.1 No complaint, inspection notice, notification of summons or prosecution was received in this reporting period. Cumulative complaint log, summaries of complaints, notification of summons and successful prosecutions are presented in Table 6.2, 6.3 and 6.4.

Table 6.2 Environmental Complaints Log

| Complaint Log No. | Date of Receipt | Received From and Received By | Nature of Complaint | Date Investigated | Outcome | Date of Reply |
|-------------------|-----------------|-------------------------------|---------------------|-------------------|---------|---------------|
| Nil | - | - | - | - | - | - |

Table 6.3 Cumulative Statistics on Complaints

| Environmental Parameters | Cumulative No. Brought Forward | No. of Complaints This Reporting Period | | | Cumulative Projects Done |
|--------------------------|--------------------------------|---|------------|----------|--------------------------|
| | | February-March 2016 | April 2016 | May 2016 | |
| Air | 0 | 0 | 0 | 0 | 0 |
| Noise | 0 | 0 | 0 | 0 | 0 |
| Water | 0 | 0 | 0 | 0 | 0 |
| Waste | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 |

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Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

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| Environmental Parameters | Cumulative No. Brought Forward | No. of Complaints This Reporting Period | | | Cumulative Project-to-Date |
|--------------------------|--------------------------------|---|------------|----------|----------------------------|
| | | February-March 2016 | April 2016 | May 2016 | |
| Air | 0 | 0 | 0 | 0 | 0 |
| Noise | 0 | 0 | 0 | 0 | 0 |
| Water | 0 | 0 | 0 | 0 | 0 |
| Waste | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 |

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Room 723 & 725, 7/F, Block B,

Profit Industrial Building,

1-15 Kwai Fung Crescent, Kwai Fong,

Hong Kong..

Tel : (852)-24508238

Fax : (852)-24508032

Email : mcl@fugro.com.hk

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7. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

7.1 Implementation Status

- 7.1.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and the EM&A Manuals. The implementation status of the mitigation measures during the reporting period is summarized in **Appendix F**.

8. CONCLUSIONS

- 8.1.1 Total 3 no. of Action Level exceedances were recorded in the reporting period. Exceedances were recorded for 24-hr TSP Action Levels at KTD1a and KTD2a on 1 March 2016 and at KTD2a on 30 March 2016. No Limit Level exceedance for 24-hr TSP and no Action and Limit Level exceedance for construction noise were recorded.
- 8.1.2 No complaint of air quality was received. Therefore, no impact 1-hour TSP monitoring was conducted in the reporting period.
- 8.1.3 Thirteen no. of environmental site inspections were carried out in the reporting period. Recommendations on mitigation measures on air quality, water quality, noise, waste management and landscape and visual impact were given to the Contractor for remediating the deficiencies identified during the site inspections.
- 8.1.4 Thirteen weekly Landscape and Visual Site audits were carried out on in the reporting period and 7 of them were carried out by a Registered Landscape Architect in the reporting period. The weekly Landscape and Visual Impact reports were counter-signed by IEC as according to the requirement of EM&A Manual (AEIAR-130/2009). Total 1 no. of non-compliance was recorded in the weekly Landscape and Visual Site audits in the reporting period.
- 8.1.5 Referring to the Contractor's information, no environmental complaint, notification of summons and successful prosecution was received in the reporting period.

8.2 Comment and Recommendations

- 8.2.1 The recommended environmental mitigation measures, as proposed in the EIA reports and EM&A Manuals shall be effectively implemented to minimize the potential environmental impacts from the Project. The EM&A programme would effectively monitor the environmental impacts generated from the construction activities and ensure the proper implementation of mitigation measures.
- 8.2.2 According to the environmental audit performed in the reporting period, the following recommendations were made:

Air Quality Impact

- Fugitive dust preventive measures shall be implemented.

Construction Noise Impact

- Effective noise mitigation measures shall be implemented to minimize construction noise impact

Water Quality Impact

- Implement effective/preventive measures to prevent accumulation of stagnant water and to avoid site runoff from the site;
- Provide proper drainage system management.

Chemical and Waste Management

- Chemical and Waste Management shall be provided properly.

Landscape and Visual Impact

- Proper covering of the open stockpiles.

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Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
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Permit / Licenses

- No specific observation was identified in the reporting period.

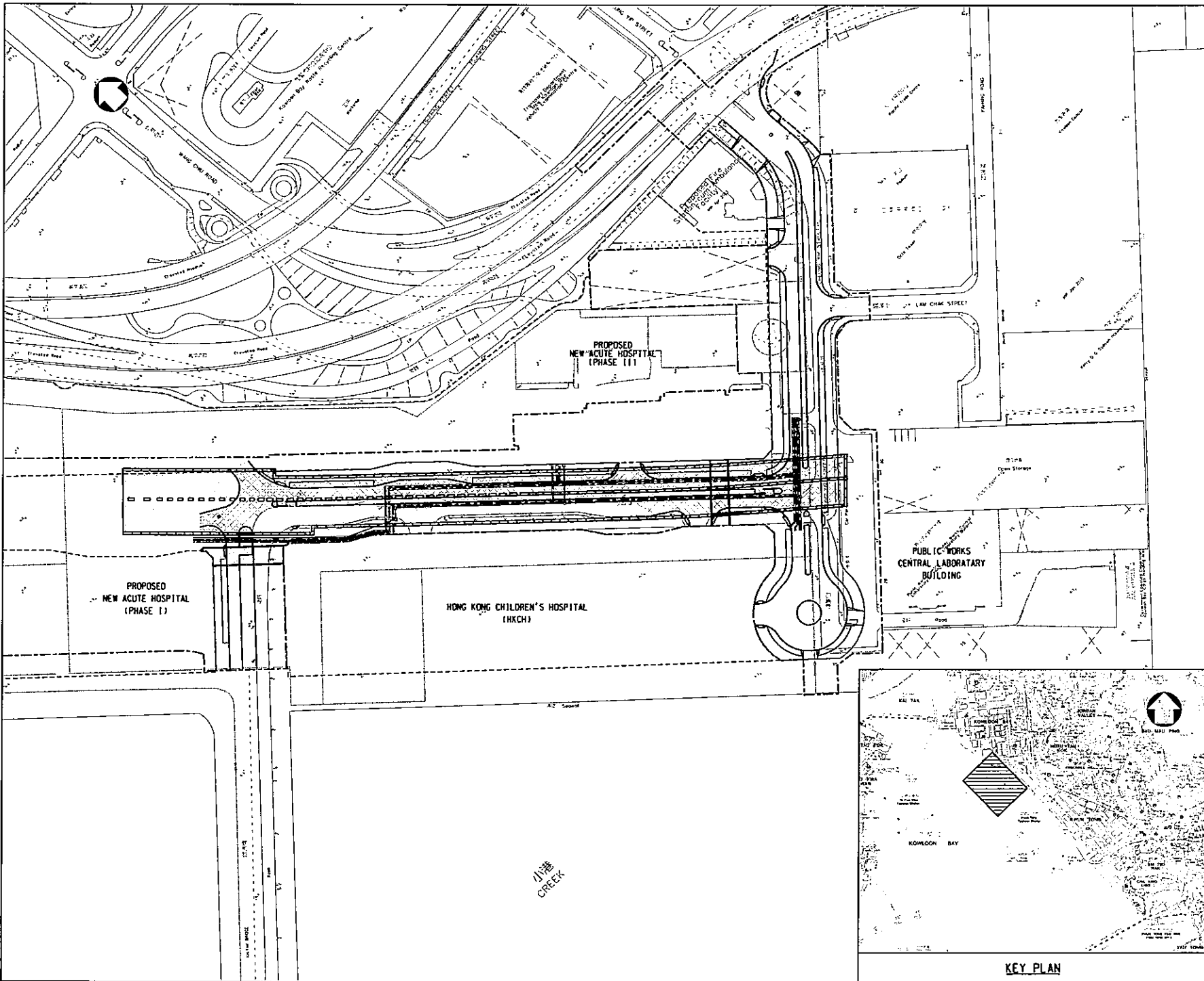
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Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
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Fax : (852)-24508032
Email : mcl@fugro.com.hk

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Figure 1
Project General Layout



- LEGENDS:**
- SITE BOUNDARY
 - - - HOSPITAL SITE BOUNDARY
 - ▭ PROPOSED SUPPORTING UNDERGROUND STRUCTURE
 - ▭ PROPOSED SUBWAYS
 - ▭ PROPOSED ROADWORKS
 - ▭ PROPOSED DISTRICT COOLING SYSTEM
 - ▭ DEMOLITION OF RADAR TOWER

| No. | Date | Drawn | Description | Checked | Approved |
|-----|------|-------|-------------|---------|----------|
| | | | | | |



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Development Department
九廣拓展處
Kowloon Development Office

PROJECT

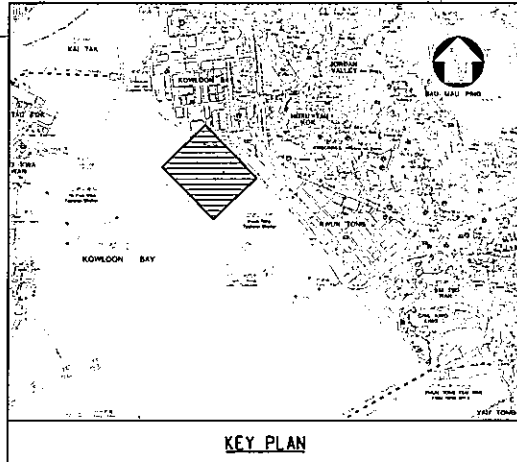
CONTRACT NO. KL/2014/03
KAI TAK DEVELOPMENT - STAGE 3
INFRASTRUCTURE WORKS FOR
DEVELOPMENTS AT THE SOUTHERN PART OF
THE FORMER RUNWAY

TITLE

GENERAL LAYOUT PLAN

| | | | |
|-------------|--------|--------------|---|
| DESIGNED | | ENG. CHECK | |
| DRAWN | | CONSULTATION | |
| ENG. CHECK | | APPROVED | |
| SCALE AT A1 | STATUS | KEY | A |
| 1 : 1000 | | | |

Drawing No. **FIGURE 1.0**
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PLOT DRIVE: K:\384 Trunk Road 12\Code Admin\ALCOLOUR V81.ppt

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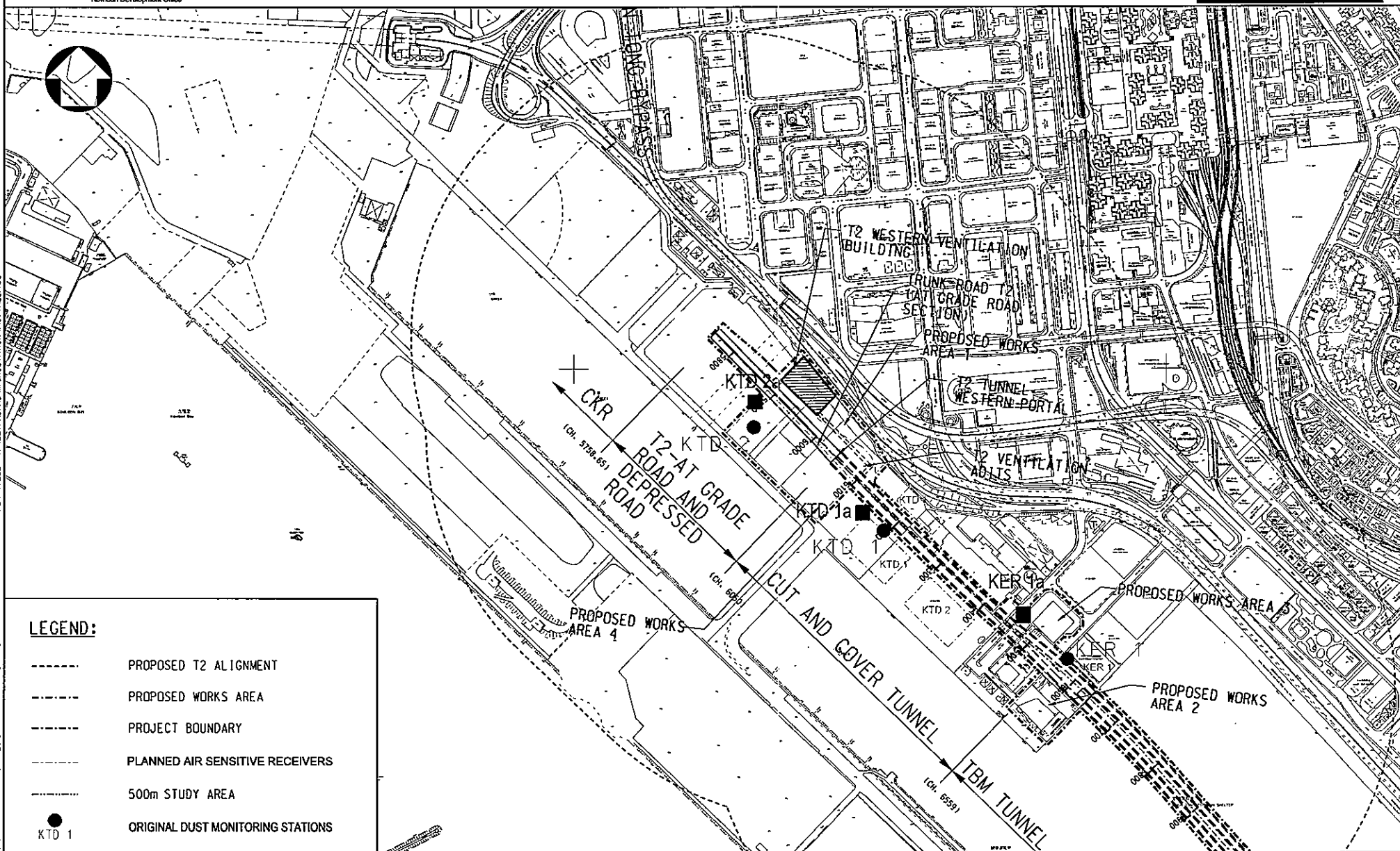
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Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk



Figure 2

Air and Noise Monitoring Locations



LEGEND:

- PROPOSED T2 ALIGNMENT
- PROPOSED WORKS AREA
- PROJECT BOUNDARY
- PLANNED AIR SENSITIVE RECEIVERS
- 500m STUDY AREA
- ORIGINAL DUST MONITORING STATIONS

KTD 1

■ KTD 1a PROPOSED DUST MONITORING STATIONS

Drawing title

IDENTIFIED DUST MONITORING STATIONS AT SOUTH APRON OF FORMER KAI TAK AIRPORT

Original Size

A3

Scale

1 : 6000

Date

30/01/2012

File name

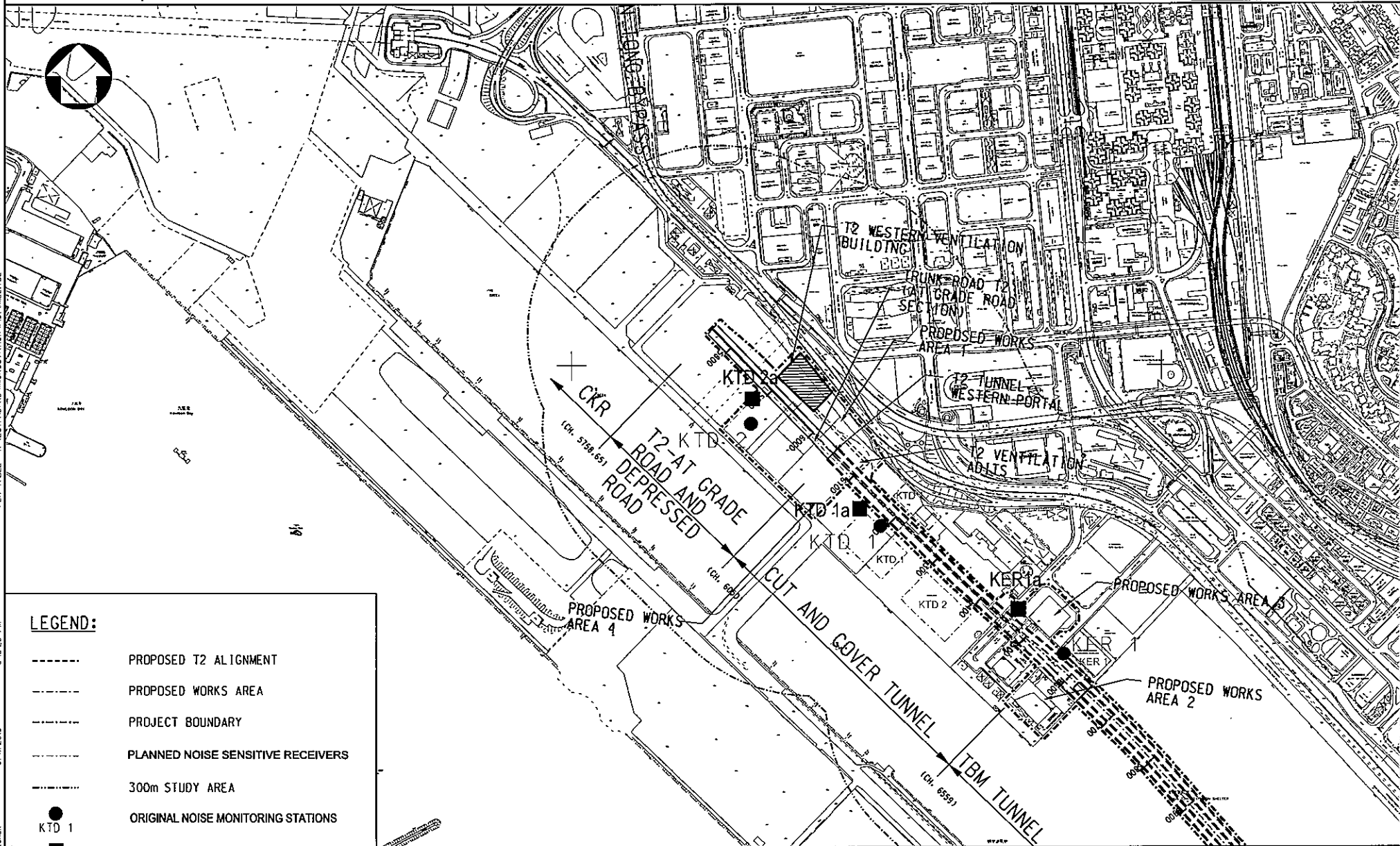
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Drawing No.

FIGURE 2.1a(revised)

Rev.

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 CAD FILE: k:\91164 trunk road t2\report\final\enna report\Figure 2.1a.dgn



LEGEND:

- PROPOSED T2 ALIGNMENT
 - PROPOSED WORKS AREA
 - PROJECT BOUNDARY
 - PLANNED NOISE SENSITIVE RECEIVERS
 - 300m STUDY AREA
 - ORIGINAL NOISE MONITORING STATIONS
 - PROPOSED NOISE MONITORING STATIONS
- KTD 1
KTD 1a

Drawing title

IDENTIFIED NOISE MONITORING STATIONS AT
SOUTH APRON OF FORMER KAI TAK AIRPORT

| | | | | | |
|----------------------|-------------|-----------|-----------------------------------|------|------------|
| Original Size | A3 | Scale | 1 : 6000 | Date | 30/01/2012 |
| © Copyright reserved | | File name | Drawing No. FIGURE 3.1a (revised) | | |
| Rev. | Description | Date | Rev. | | |

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Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong.

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

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Appendix A

Construction Programme

KL/2014/03 Kai Tak Development-Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway

| Activity ID | Activity Name | Original Duration | Start | Finish | Predecessors | Total Float | March 2016 | | | | April 2016 | | | | May 2016 | | | | June 2016 | | | | July 2016 | | | | | | | | | | | |
|---|---|-------------------|-------------|-----------|----------------|-------------|------------|----|----|----|------------|----|----|----|----------|----|----|----|-----------|----|----|----|-----------|----|----|----|----|----|----|----|--|--|--|--|
| | | | | | | | 30 | 06 | 13 | 20 | 27 | 03 | 10 | 17 | 24 | 31 | 07 | 14 | 21 | 28 | 04 | 11 | 18 | 25 | 01 | 08 | 15 | 22 | 29 | 05 | | | | |
| <p>KL/2014/03 Kai Tak Development-Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway</p> <p>Project Key Dates</p> <p>Site Possession Date</p> <p>Portion A</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PK-SPD-100 | Portion A | 0 | 02-May-16* | | K-PK-PCC-100 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Predecessors: Alteration Design Scheme (K-PK-SPD-100)</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-ADS-100 | AIP Submission and approval | 35 | 24-Dec-15 A | 20-Apr-16 | K-PA-ADS-490 | 39 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-ADS-110 | DDA Submission and approval-Tunnel box from CH6+150 to CH6+227 | 35 | 20-Jun-16 | 24-Jul-16 | K-PA-ADS-100 | 115 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-ADS-115 | DDA Submission and approval-SUS D-Wall from CH6+227 to CH6+568 | 35 | 26-Feb-16 A | 25-May-16 | K-PA-ADS-100 | 41 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-ADS-125 | DDA Submission and approval-Socketed H-Pile foundation from CH6+150 to CH6+227 | 35 | 19-Jan-16 A | 22-Apr-16 | K-PA-ADS-100 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-ADS-130 | DDA Submission and approval-Socketed H-Pile foundation from CH6+227 to CH6+568 | 35 | 21-Mar-16 A | 11-May-16 | K-PA-ADS-125 | 90 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Programming / Reporting</p> <p>Works Programme</p> <p>Prepare & submit Works Programme</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-420 | Prepare & submit Works Programme | 60 | 19-Mar-16 A | 16-May-16 | K-PA-GSP-410 | 156 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-480 | ELS design for construction of SUS and ventilation adit from CH6+150 to CH6+227 in Zone 1 | 35 | 07-Jan-16 A | 04-May-16 | K-PA-GSP-465,1 | 196 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-486 | ELS design for construction of subway B (Bay 3&4) | 35 | 22-Jun-16 | 26-Jul-16 | K-PA-GSP-485 | 645 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-487 | Temporary vehicular and pedestrian access for HKCH | 35 | 21-May-16 | 24-Jun-16 | K-PK-SPD-260,1 | 145 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-494 | Temporary work design for demolition of the existing radar tower | 35 | 21-May-16 | 24-Jun-16 | K-PK-PCC-100 | 241 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-835 | Temporary work design for construction of subway structure | 35 | 21-May-16 | 24-Jun-16 | K-PK-PCC-100 | 27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-885 | Pumping Test for SUS Cofferdam in Zone 2 to 4 | 35 | 18-May-16 | 21-Jun-16 | K-PA-GSP-875 | 247 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-714 | Method statement of Excavation and ELS | 60 | 21-May-16 | 19-Jul-16 | K-PK-PCC-100 | 120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-732 | Method statement for Demolition of Radar Tower | 60 | 14-Mar-16 A | 17-Apr-16 | K-PK-SPD-230 | 214 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-666 | Submission and approval utility diversion scheme in Zone 1 | 30 | 12-Jan-16 A | 02-Apr-16 | K-PK-PCC-100 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-667 | Submission and approval utility diversion scheme in Zone 2,3&4 | 45 | 25-Jan-16 A | 22-Apr-16 | K-PA-GSP-665 | 52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-668 | Utility coordination and liaison | 90 | 09-Dec-15 A | 02-May-16 | K-PA-GSP-666,1 | 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-860 | Temporary utility diversion work in Zone 1 | 105 | 03-May-16 | 15-Aug-16 | K-PA-GSP-666 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-865 | Temporary utility diversion work in Zone 2,3&4 | 120 | 01-Jun-16 | 29-Sep-16 | K-PA-GSP-860,1 | 47 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-861 | Laying DN400 MS fresh watermain at Zone 1 | 50 | 01-Jun-16 | 30-Jul-16 | K-PA-GSP-860 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-866 | Laying DN300 D.I fresh watermain at Zone 4 | 90 | 01-Jun-16 | 15-Sep-16 | K-PA-GSP-861 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-867 | Laying DN250 D.I.mt watermain at Zone 4 | 90 | 01-Jun-16 | 15-Sep-16 | K-PA-GSP-861,1 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-868 | Construction of 300 covered rectangular channel (EB) at Zone 3 & 4 | 75 | 01-Jun-16 | 29-Aug-16 | K-PA-GSP-861 | 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-1A-UDN-120 | Diversion of existing 132kv CLP cable at Cheung Yip Street by others | 223 | 13-Nov-15 A | 02-Jul-16 | K-PK-PCC-100 | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-845 | Utility laying for HGC,HKB,N,CT,PCW,NW1,TGT,MP&LPB by others | 155 | 25-May-16 | 27-Oct-16 | K-PA-GSP-667,1 | 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-885 | Submission and approval of TTA schemes-TTA stage 1A for D-wall W/B and End wall | 90 | 22-Feb-16 A | 20-May-16 | K-PA-GSP-880 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-PA-GSP-810 | Submission and approval of TTA schemes-TTA stage 2 for D-wall W/B at Zone 2 | 90 | 20-May-16 | 18-Aug-16 | K-PA-GSP-885,1 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-DR-PRE-140 | Submit temporary works design and method statement for barging point | 35 | 27-Apr-16 | 31-May-16 | K-DR-PRE-135 | 62 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-DR-PRE-145 | Set up temporary barging point | 100 | 08-Jun-16 | 15-Sep-16 | K-PK-SPD-220,1 | 62 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-DR-PRE-170 | Site clearance and erection of boarding & fencing | 70 | 23-Nov-15 A | 10-Apr-16 | K-PK-PCC-100 | 70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Additional Ground Investigation work</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-1A-SV1-087 | Additional Ground Investigation work | 60 | 15-Dec-15 A | 05-Apr-16 | K-PA-GSP-665 | 55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K-1A-SV1-088 | Fabrication and delivery of ELS strutting | 110 | 21-May-16 | 29-Sep-16 | K-PA-ADS-100 | 32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Remaining Level of Effort
 Remaining Work
 Actual Work
 Critical Remaining Work

3 MRP (April to June)

| Date | Revision | Checked | Approved |
|-----------|----------|---------|----------|
| 31-Mar-16 | 2 | | |

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Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

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Fax : (852)-24508032
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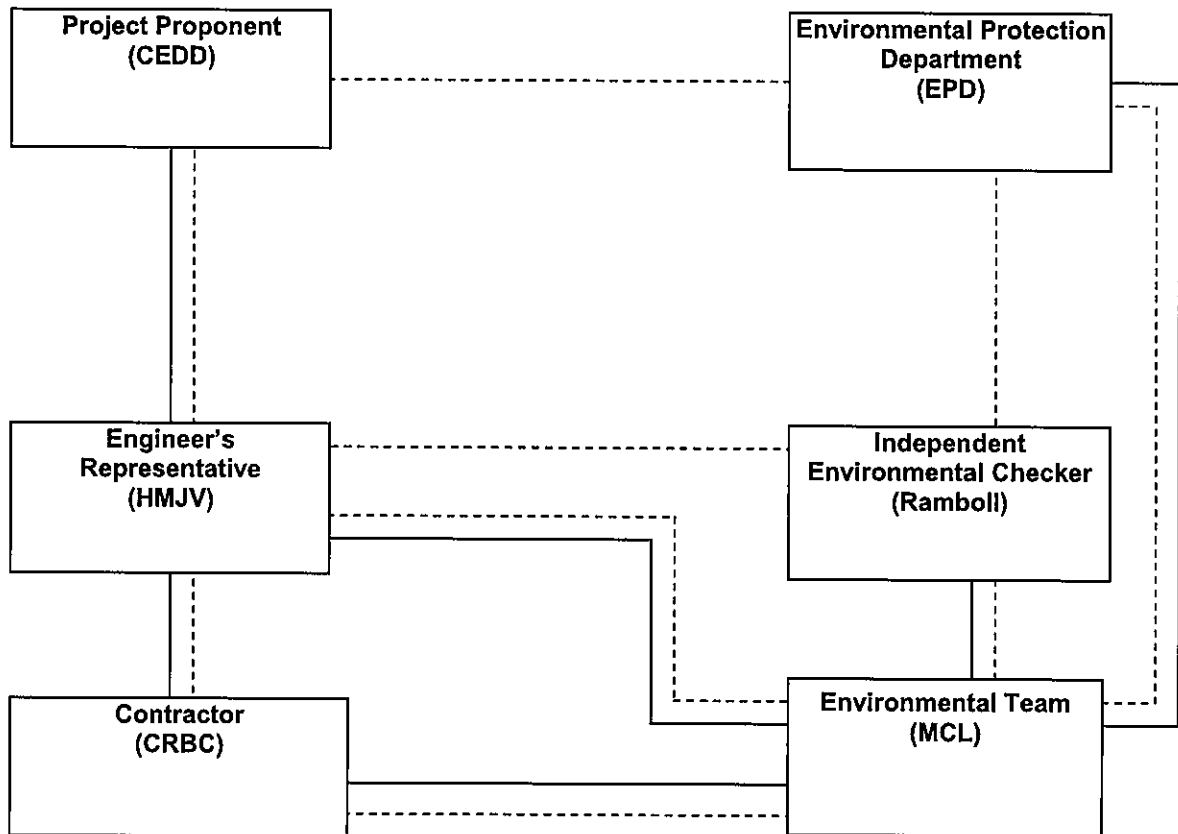
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Project Organization Chart

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Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

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Fax : (852)-24508032
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Legend:
— Line of Reporting
- - - Line of Communication

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Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

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Appendix C

Action and Limit Levels for Air Quality and Noise

MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,
 Profit Industrial Building,
 1-15 Kwai Fung Crescent, Kwai Fong,
 Hong Kong..

Tel : (852)-24508238
 Fax : (852)-24508032
 Email : mcl@fugro.com.hk

**Action and Limit Levels for 24-hr TSP and 1-hr TSP**

| Parameter | Monitoring Station | Action Level ($\mu\text{g}/\text{m}^3$) | Limit Level ($\mu\text{g}/\text{m}^3$) |
|---|--------------------|--|---|
| 24-hr TSP ($\mu\text{g}/\text{m}^3$) | KTD1a | 177 | 260 |
| | KTD2a | 157 | |
| | KER1a | 172 | |
| *1-hr TSP ($\mu\text{g}/\text{m}^3$) | KTD1a | 285 | 500 |
| | KTD2a | 279 | |
| | KER1a | 295 | |

Note:

1-hr TSP monitoring should be required in case of complaints.

Action and Limit Levels for Construction Noise, Leq (30min), dB(A)

| Time Period | Location | Action | Limit |
|----------------------------------|-------------------------|---|----------|
| 0700-1900 hrs on normal weekdays | KTD1a KTD2a KER1a | When one documented complaint is received | 75 dB(A) |

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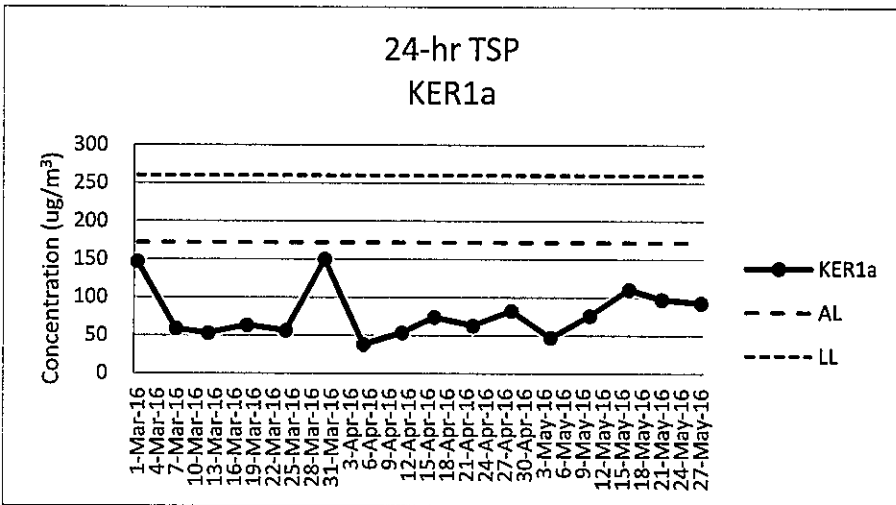
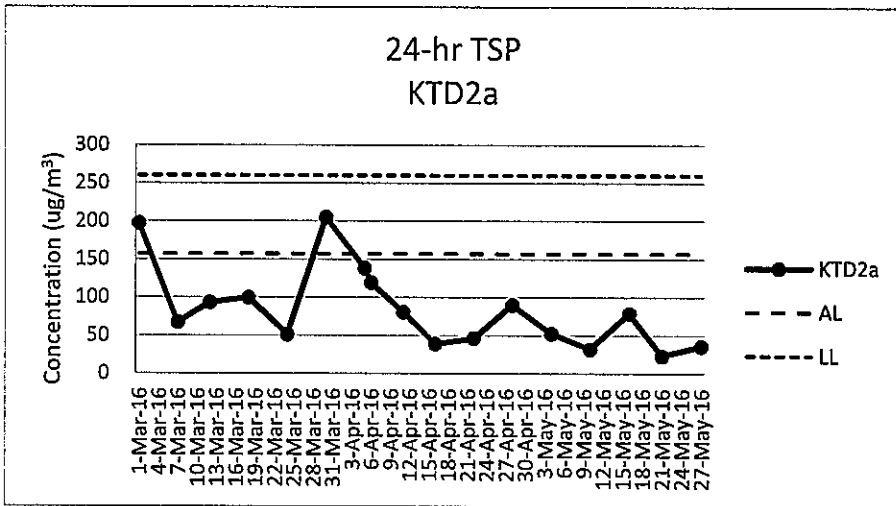
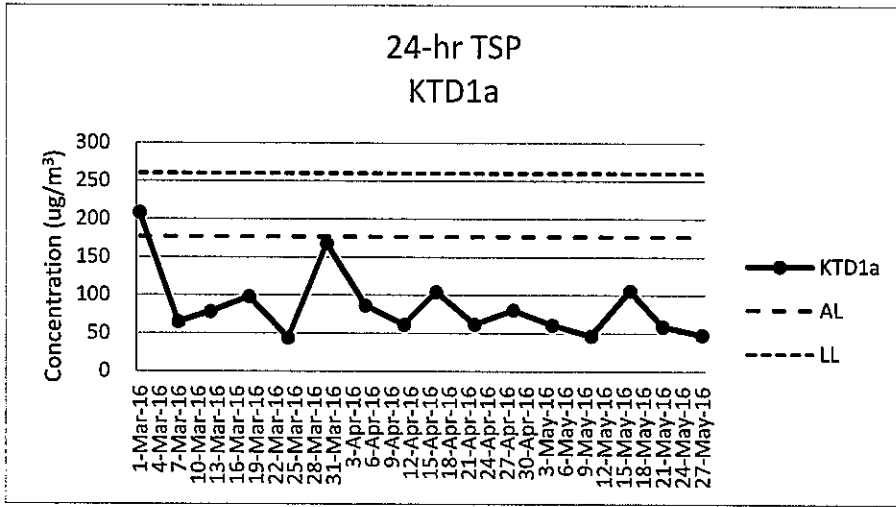
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Fax : (852)-24508032
Email : mcl@fugro.com.hk



Appendix D

Graphical Presentation of Monitoring Data

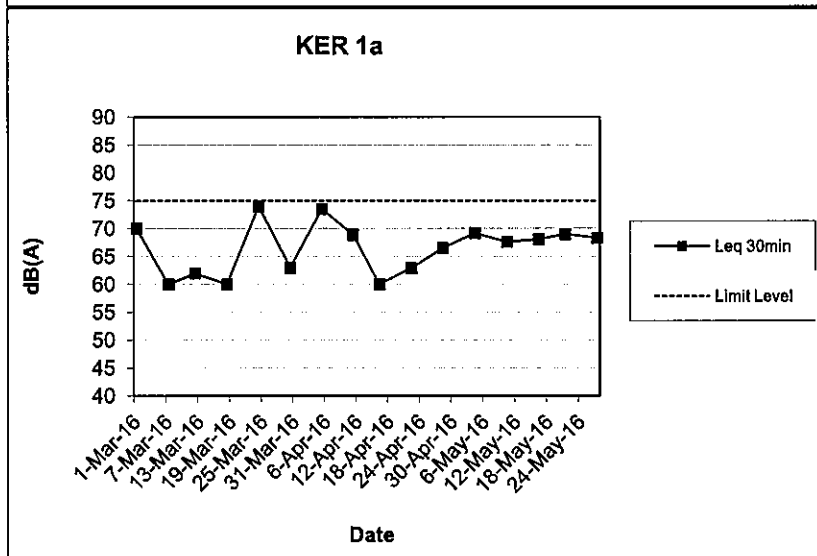
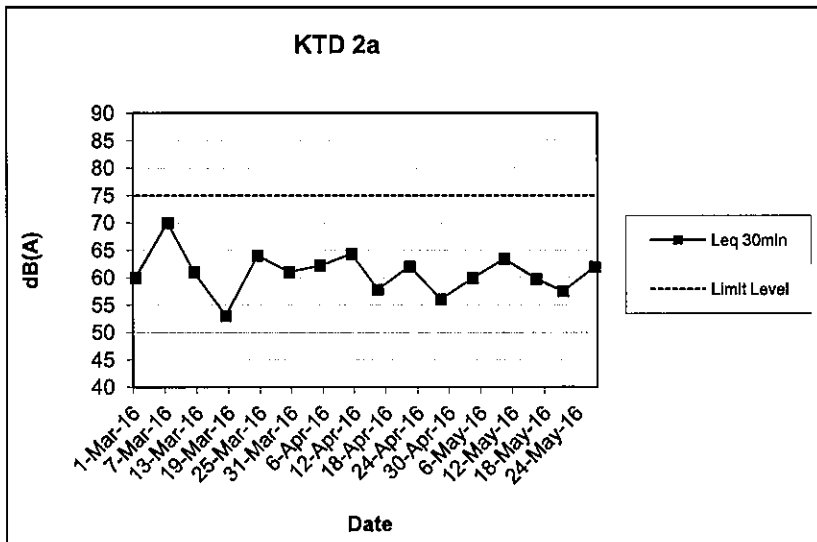
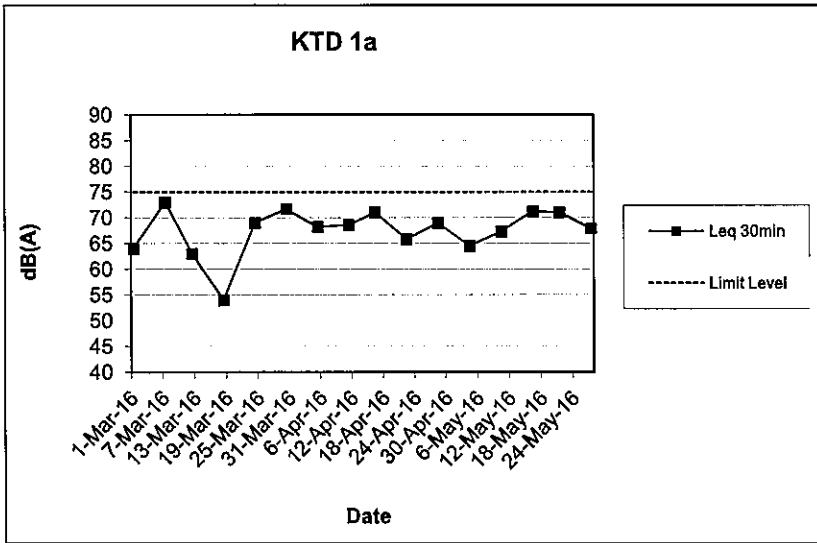
Graphical Presentation on 24-hr TSP Monitoring Results



Note:

- 1) The major activities being carried out on site during the reporting period can be referred to Section 1.3.2.
- 2) The weather conditions during monitoring in the reporting period was range from cloudy, fine and sunny.
- 3) Any other factors which might affect the monitoing results can be referred to Section 2.3.8.

Graphical Presentation on Noise Monitoring Results



Note:

- 1) The major activities being carried out on site during the reporting period can be referred to Section 1.3.2.
- 2) The weather conditions during monitoring in the reporting period was range from cloudy, fine and sunny. No raining or wind with speed over 5 m/s was observed during monitoring in the reporting period.
- 3) Any other factors which might affect the monitoring results can be referred to Section 2.3.8.

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Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

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Appendix E
Waste Flow Table

MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

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| Monthly Ending | Actual Quantities of Inert C&D Materials Generated Monthly | | | | | | Actual Quantities of Non-inert C&D Wastes Generated Monthly | | | | |
|----------------|--|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|----------------------------|-----------------------|----------------|-----------------------------|
| | Total Quantity Generated (Inert C&D) | Hard Rock and Large Broken Concrete | Reused in the Contract | Reused in other Projects | Disposed as Public Fill | Imported Fill | Metals | Paper/ cardboard packaging | Plastics (see Note 2) | Chemical Waste | Others, e.g. general refuse |
| | (in '000m ³) | (in '000m ³) | (in '000m ³) | (in '000m ³) | (in '000m ³) | (in '000m ³) | (in '000 kg) | (in '000kg) | (in '000kg) | (in '000kg) | (in '000m ³) |
| 2016 Jan | 0.159 | 0.101 | 0.058 | Nil | Nil | Nil | Nil | 0.023 | 0.00002 | 0.0158 | 0.0335 |
| 2016 Feb | 0.291 | 0.050 | 0.241 | Nil | Nil | Nil | 1.34 | 0.023 | 0.00002 | 0.0158 | 0.0335 |
| 2016 Mar | 2.7389 | 0.0407 | 0.0662 | Nil | 2.632 | Nil | 5.92 | 0.023 | 0.00002 | 0.0158 | 0.0571 |
| 2016 Apr | 4.1718 | 0.0578 | 0.462 | Nil | 3.652 | Nil | 12.5 | 0.023 | 0.00002 | 0.0158 | 0.0426 |
| 2016 May | 3.592 | Nil | 0.299 | Nil | 3.293 | Nil | 5.23 | 0.023 | 0.00002 | 0.0158 | 0.0621 |
| 2016 June | | | | | | | | | | | |
| 2016 July | | | | | | | | | | | |
| 2016 Aug | | | | | | | | | | | |
| 2016 Sept | | | | | | | | | | | |
| 2016 Oct | | | | | | | | | | | |
| 2016 Nov | | | | | | | | | | | |
| 2016 Dec | | | | | | | | | | | |
| Total | 10.9527 | 0.2493 | 1.1262 | Nil | 9.577 | Nil | 24.99 | 0.115 | 0.0001 | 0.079 | 0.2238 |

Note:

- 1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- 2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.

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Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

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Fax : (852)-24508032
Email : mcl@fugro.com.hk

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Appendix F

Environmental Mitigation Implementation Schedule (EMIS)

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Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

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Fax : (852)-24508032
Email : mcl@fugro.com.hk

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| EIA Ref | EM&A Ref | Environmental Protection Measures / Mitigation Measures | Who to Implement the measure | Location/ Timing | Construction Phase Implementation Status |
|---|--|---|------------------------------|------------------------|--|
| Air Quality Measures | | | | | |
| New Distributor Roads Serving the Planned KTD | | | | | |
| AEIAR-130/2009 S3.2 | AEIAR 130/2009 EM&A Manual S2.2 | 8 times daily watering of the work site with active dust emitting activities. | Contractor | All relevant worksites | Implemented |
| Decommissioning of the Radar Station of the former Kai Tak Airport | | | | | |
| AEIAR-130/2009 S5.2.19 | AEIAR 130/2009 EM&A Manual S4.2.4 | The excavation area should be limited to as small in size as possible and backfilled with clean and/or treated soil shortly after excavation work. The exposed excavated area should be covered by the tarpaulin during night time. The top layer soils should be sprayed with fine misting of water immediately before the excavation. | Contractor | All relevant worksites | Not Applicable |
| Trunk Road T2 | | | | | |
| AEIAR-174/2013 S4.9.2.1 | AEIAR-174/2013 EM&A Manual S2.3.1.1 | Watering of the construction areas 12 times per day to reduce dust emissions by 91.7%, with reference to the "Control of Open Fugitive Dust Sources" (USEPA AP-42). The amount of water to be applied would be 0.91L/m ² for the respective watering frequency. | Contractor | All relevant worksites | Implemented |
| | | Dust enclosures with watering would be provided along the loading ramps and conveyor belts for unloading the C&D materials to the barge for dust suppression. | Contractor | All relevant worksites | Not Applicable |
| | | 8 km per hour is the recommended limit of the speed for vehicles on unpaved site roads. | Contractor | All relevant worksites | Implemented |
| Good Site Practices | | | | | |
| AEIAR-130/2009 S3.2, S5.2.19, AEIAR-174/2013 S4.9.2.2 | AEIAR 130/2009 EM&A Manual S2.2, S4.2, AEIAR-174/2013 EM&A Manual S2.3.1.2 | Stockpiling site(s) should be lined with impermeable sheeting and banded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission. | Contractor | All relevant worksites | Partially Implemented |
| | | Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. Use of frequent watering for particularly dusty construction areas and areas close to ASRs. | Contractor | All relevant worksites | Partially Implemented |
| | | Misting for the dusty material should be carried out before being loaded into the vehicle. Any vehicle with an open load carrying area should have properly fitted side and tail boards. | Contractor | All relevant worksites | Implemented |
| | | Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin. | Contractor | All relevant worksites | Partially Implemented |
| | | Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; The tarpaulin should be properly secured and should extend at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before | Contractor | All relevant worksites | Partially Implemented |

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Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong.

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

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| EIA Ref | EM&A Ref | Environmental Protection Measures // Mitigation Measures | Who to implement the measure | Location / Timing | Construction Phase Implementation Status |
|-----------------------|----------|--|------------------------------|------------------------|--|
| | | transportation. | | | |
| | | The vehicles should be restricted to maximum speed of 10 km per hour. Confined haulage and delivery vehicle to designated roadways inside the site. Onsite unpaved roads should be compacted and kept free of loose materials. | Contractor | All relevant worksites | Implemented |
| | | Vehicle washing facilities should be provided at every vehicle exit point. Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. | Contractor | All relevant worksites | Implemented |
| | | The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores. | | | |
| | | Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. | Contractor | All relevant worksites | Partially Implemented |
| | | Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. | Contractor | All relevant worksites | Implemented |
| | | Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed. | Contractor | All relevant worksites | Implemented |
| | | Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system. | Contractor | All relevant worksites | Implemented |
| | | Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines. | Contractor | All relevant worksites | Implemented |
| | | Open stockpiles shall be avoided or covered. Prevent placing dusty material storage piles near ASRs. | Contractor | All relevant worksites | Partially Implemented |
| | | Routing of vehicles and position of construction plant should be at the maximum possible distance from ASRs. | Contractor | All relevant worksites | Not Applicable |
| | | Dark smoke | | | |
| | | Dark smoke emission shall be controlled in accordance with the Air Pollution Control (Smoke) Regulation and ETWB TCW 19/2005. | Contractor | All relevant worksites | Implemented |
| | | Plant and equipment should be well maintained to prevent dark smoke emission. | Contractor | All relevant worksites | Implemented |
| Noise Measures | | | | | |
| Trunk Road T2 | | | | | |

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Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

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| EIA Ref | EM&A Ref | Environmental Protection Measures / Mitigation Measures | Who to implement the measure | Location / Timing | Construction Phase Implementation Status |
|--|---|---|------------------------------|------------------------|--|
| AEIAR-174/2013 S5.9.2.1 | AEIAR-174/2013 EM&A Manual S3.4.1.1 | The use of quieter plant, including Quality Powered Mechanical Equipment (QPME) is specified for the list of equipment: <ul style="list-style-type: none"> • Concrete lorry mixer • Dump Truck, 5.5 tonne < gross vehicle weight <= 38 tonne • Generator, Super Silenced, 70 dB(A) at 7m • Poker, vibratory, Hand-held (electric) • Water Pump, Submersible (Electric) • Mobile Crane - KOBELCO CKS900 • Excavator, wheeled/tracked - HYUNDAI R80CR-9 | Contractor | All relevant worksites | Implemented |
| | | Use of temporary or fixed noise barriers with a surface density of at least 10kg/m ² to screen noise from movable and stationary plant. | Contractor | All relevant worksites | Not Applicable |
| | | Use of enclosures with covers at top and three sides and a surface density of at least 10kg/m ² to screen noise from generally static noisy plant such as air compressors. | Contractor | All relevant worksites | Not Applicable |
| | | Use of acoustic fabric for the silent piling system, drill rigs, rock drills etc. | Contractor | All relevant worksites | Partially Implemented |
| | | <u>Good Site Practices</u> | | | |
| AEIAR-130/2009 S3.3, S5.3.10, AEIAR-174/2013 S5.9.2.1 | AEIAR 130/2009 EM&A Manual S2.3, S4.3.2, AEIAR-174/2013 EM&A Manual S3.4.1.1 | Only well-maintained plant should be operated on-site and plant shall be serviced regularly during the construction/ decommissioning program. | Contractor | All relevant worksites | Implemented |
| | | Silencers or mufflers on construction equipment should be utilized and shall be properly maintained during the construction/ decommissioning program. | Contractor | All relevant worksites | Not Applicable |
| | | Mobile plant, if any, should be sited as far away from NSRs as possible. | Contractor | All relevant worksites | Implemented |
| | | Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or should be throttled down to a minimum. | Contractor | All relevant worksites | Implemented |
| | | Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. | Contractor | All relevant worksites | Implemented |
| | | Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction/ decommissioning activities. | Contractor | All relevant worksites | Implemented |
| | | Use of site hoarding as a noise barrier to screen noise at low level NSRs. | Contractor | All relevant worksites | Implemented |
| | | For the use of hand held percussive breakers (with mass of above 10kg) and portable air compressors (supply air at 500 kPa or above), the noise level of such PME shall comply with a stringent noise emission standard and a noise emission label shall be obtained from the DEP before use at any time in construction site. | Contractor | All relevant worksites | Implemented |

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Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

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| EIA Ref | EM&A Ref | Environmental Protection Measures / Mitigation Measures | Who to implement the measure | Location / Timing | Construction Phase Implementation Status |
|-------------------------------|-------------------------------------|--|------------------------------|------------------------|--|
| | | Quiet powered mechanical equipment (PME) shall be used for the construction of the Project. | Contractor | All relevant worksites | Implemented |
| | | Full enclosures shall be used to screen noise from relatively static PMEs (including air compressor, bar bender, concrete pump, generator and water pump) from sensitive receiver(s). | Contractor | All relevant worksites | Not Applicable |
| | | Movable cantilevered noise barriers shall be used to screen noise from mobile PMEs (including asphalt paver, breaker, excavator and hand-held breaker) from sensitive receiver(s). These movable cantilevered noise barriers shall be located close to the mobile PMEs and shall be moved/adjusted iteratively in step with each movement of the corresponding mobile PMEs in order to maximize their noise reduction effects. | Contractor | All relevant worksites | Not Applicable |
| | | Only approved or exempted Non-road Mobile Machineries (NRMMS) including regulated machines and non-road vehicles with proper labels are allowed to be used in specified activities on-site. | Contractor | All relevant worksites | Implemented |
| Water Quality Measures | | | | | |
| Trunk Road T2 | | | | | |
| | | <u>Accidental Spillage</u> | | | |
| AEIAR-174/2013 S6.4.8.5 | AEIAR-174/2013 EM&A Manual S4.2.1.1 | All bentonite slurry should be stored in a container that resistant to corrosion, maintained in good conditions and securely closed; The container should be labelled in English and Chinese and note that the container is for storage of bentonite slurry only. | Contractor | All relevant worksites | Implemented |
| | | The storage container should be placed on an area of impermeable flooring and bunded with capacity to accommodate 110% of the volume of the container size or 20% by volume stored in the area and enclosed with at least 3 sides. | Contractor | All relevant worksites | Implemented |
| | | The storage container should be sufficiently covered to prevent rainfall entering the container or bunded area (water collected within the bund must be tested and disposed of as chemical waste, if necessary). An emergency clean up kit shall be readily available where bentonite fluid will be stored or used. | Contractor | All relevant worksites | Implemented |
| | | The handling and disposal of bentonite slurries should be undertaken in accordance within ProPECC PN 1/94. Surplus bentonite slurries used in construction works shall be reconditioned and reused wherever practicable. Residual bentonite slurry shall be disposed of from the site as soon as possible as stipulated in Clause 8.56 of the General Specification for Civil Engineering Works. The Contractor should explore alternative disposal outlets for the residual bentonite slurry (dewatered bentonite slurry to be disposed to a public filling area and liquid bentonite slurry, if mixed with inert fill material, to be disposed to a public filling area) and disposal at landfill should be the last resort. | Contractor | All relevant worksites | Implemented |
| AEIAR-174/2013 S6.4.8.8 | AEIAR-174/2013 EM&A Manual | In order to protect against impacts to the surrounding marine waters of the KTTs and Victoria Harbour in the event of an accidental spillage of fuel or oil, the Contractor will be required to | Contractor | All relevant worksites | Implemented |

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Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

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| EAIRef | EM&ARef | Environmental Protection Measures // Mitigation Measures | Who to Implement the measure | Location / Timing | Construction Phase Implementation Status |
|---|--|--|------------------------------|------------------------|---|
| | S4.2.1.1 | prepare a spill response plan to the satisfaction of AFCD, EPD, FSD, Police, TD and WSD to define procedures for the control, containment and clean-up of any spillage that could occur on the construction site. | | | |
| | | <u>Dredging, Reclamation and Filling</u> | | | |
| | | No dredging, reclamation or filling in the marine environment shall be carried out. | Contractor | All relevant worksites | Implemented |
| Decommissioning of the Radar Station of the former Kai Tak Airport | | | | | |
| <u>Building Demolition</u> | | | | | |
| AEIAR-130/2009 S5.4 | AEIAR 130/2009 EM&A Manual S4.4 | The site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be followed as far as practicable in order to minimise surface runoff and the chance of erosion. | Contractor | All relevant worksites | Not Applicable |
| | | There is a need to apply to EPD for a discharge licence under the WPCO for discharging effluent from the construction site. The discharge quality is required to meet the requirements specified in the discharge licence. All the runoff, wastewater or extracted groundwater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. It is anticipated that the wastewater generated from the works areas would be of small quantity. Monitoring of the treated effluent quality from the works areas should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD. | Contractor | All relevant worksites | Implemented |
| <u>General Construction Works</u> | | | | | |
| <u>Construction Runoff</u> | | | | | |
| AEIAR-130/2009 S3.4, S5.4/ AEIAR-174/2013 S6.4.8.1 | AEIAR 130/2009 EM&A Manual S2.4, S4.4/ AEIAR-174/2013 EM&A Manual S4.2.1.1 | Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include the use of sediment traps and adequate maintenance of drainage systems to prevent flooding and overflow. | Contractor | All relevant worksites | Partially Implemented |
| | | Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. | Contractor | All relevant worksites | Implemented |
| | | Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the | Contractor | All relevant worksites | Implemented |

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Room 723 & 725, 7/F, Block B,
 Profit Industrial Building,
 1-15 Kwai Fung Crescent, Kwai Fong,
 Hong Kong..

Tel : (852)-24508238
 Fax : (852)-24508032
 Email : mcl@fugro.com.hk



| EIA Ref | EM&A Ref | Environmental Protection Measures / Mitigation Measures | Who to implement the measure | Location / Timing | Construction Phase Implementation Status |
|---------|----------|--|------------------------------|------------------------|---|
| | | cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. | | | |
| | | Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m ³ capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped. | Contractor | All relevant worksites | Implemented |
| | | Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m ³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. | Contractor | All relevant worksites | Partially Implemented |
| | | Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. | Contractor | All relevant worksites | Implemented |
| | | Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events. | Contractor | All relevant worksites | Not Applicable |
| | | Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain. | Contractor | All relevant worksites | Not Applicable |
| | | An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. | Contractor | All relevant worksites | Implemented |
| | | <u>Drainage</u> | | | |
| | | It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea. | Contractor | All relevant worksites | Implemented |
| | | All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient | Contractor | All relevant worksites | Implemented |

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Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

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| EIA Ref | EM&A Ref | Environmental Protection Measures / Mitigation Measures | Who to implement the measure | Location / Timing | Construction Phase Implementation Status |
|----------------------------------|-------------------------------------|---|------------------------------|------------------------|--|
| | | operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required. | | | |
| | | <u>Stormwater Discharges</u> Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes. | Contractor | All relevant worksites | Not Applicable |
| | | <u>Sewage Effluent</u> Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices. | Contractor | All relevant worksites | Implemented |
| | | <u>Debris and Litter</u> In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur. Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering into the adjacent harbour waters. Stockpiles of cement and other construction materials should be kept covered when not being used. | Contractor | All relevant worksites | Implemented |
| | | <u>Accidental Spillage</u> Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to the nearby harbour waters, all fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ. The bund should be drained of rainwater after a rain event. | Contractor | All relevant worksites | Implemented |
| Waste Management Measures | | | | | |
| | | <u>Waste Management Plan</u> Contractor should be requested to submit an outline Waste Management Plan (WMP) prior to the commencement of construction work, in accordance with the ETWB TC(W) No.19/2005 so as to provide an overall framework of waste management and reduction. | Contractor | All relevant worksites | Implemented |
| AEIAR-174/2013 S11.4.8.1 | AEIAR-174/2013 EM&A Manual S9.2.1.2 | | | | |
| | | <u>Good Site Practices</u> Nomination of an approved person, such as a site manager, to be responsible for good site | Contractor | All relevant | Implemented |
| AEIAR-130/2009 | AEIAR 130/2009 | | | | |

MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk



| EIA Ref | EM&A Ref | Environmental Protection Measures // Mitigation Measures | Who to Implement the measure | Location / Timing | Construction Phase Implementation Status |
|--|------------------------|---|------------------------------|------------------------|--|
| S3.5, S5.5 | EM&A Manual S2.5, S4.5 | practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site. | | worksites | |
| | | Training of site personnel in proper waste management and chemical waste handling procedures. | Contractor | All relevant worksites | Partially Implemented |
| | | Provision of sufficient waste disposal points and regular collection for disposal. | Contractor | All relevant worksites | Partially Implemented |
| | | Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers. | Contractor | All relevant worksites | Implemented |
| | | A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites). | Contractor | All relevant worksites | Implemented |
| | | <u>Waste Reduction Measures</u> | | | |
| | | Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals. | Contractor | All relevant worksites | Not Applicable |
| | | Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal. | Contractor | All relevant worksites | Partially Implemented |
| | | Encourage collection of aluminum cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force. | Contractor | All relevant worksites | Implemented |
| | | Any unused chemicals or those with remaining functional capacity should be recycled. | Contractor | All relevant worksites | Implemented |
| | | Proper storage and site practices to minimize the potential for damage or contamination of construction materials. | Contractor | All relevant worksites | Implemented |
| | | <u>Construction and Demolition Materials</u> | | | |
| | | Where it is unavoidable to have transient stockpiles of C&D material within the work site pending collection for disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible. | Contractor | All relevant worksites | Implemented |
| | | Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric. | Contractor | All relevant worksites | Partially Implemented |
| | | Skip hoist for material transport should be totally enclosed by impervious sheeting. | Contractor | All relevant worksites | Implemented |
| Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site. | Contractor | All relevant worksites | Implemented | | |
| The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores. | Contractor | All relevant worksites | Implemented | | |

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Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

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| EA Ref | EM&A Ref | Environmental Protection Measures / Mitigation Measures | Who to Implement the measure | Location / Timing | Construction Phase Implementation Status |
|------------------------------------|---------------------------------|---|------------------------------|------------------------|--|
| | | The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle. | Contractor | All relevant worksites | Partially Implemented |
| | | All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet. | Contractor | All relevant worksites | Partially Implemented |
| | | The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading. | Contractor | All relevant worksites | Implemented |
| | | When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 "Trip Ticket System for Disposal of Construction and Demolition Materials" should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system. | Contractor | All relevant worksites | Implemented |
| | | Chemical Waste After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. | Contractor | All relevant worksites | Partially Implemented |
| | | General Refuse General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem. | Contractor | All relevant worksites | Partially Implemented |
| Land Contamination Measures | | | | | |
| | | For any excavation works conducted at Radar Station | | | |
| AEIAR-130/2009 S3.6.57 | AEIAR 130/2009 EM&A Manual S4.6 | As the risk due to dermal contact with groundwater by site workers is uncertain, it is recommended that personnel protective equipment (PPE) be used by site workers as a mitigation measure. | Contractor | All relevant worksites | Not Applicable |
| Landscape and Visual Impact | | | | | |

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Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

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| EIA Ref | EM&A Ref | Environmental Protection Measures / Mitigation Measures | Who to implement the measure | Location / Timing | Construction Phase Implementation Status |
|--|---|---|------------------------------|------------------------|---|
| New Distributor Roads Serving the Planned KTD | | | | | |
| Construction Phase | | | | | |
| AEIAR-130/2009 S3.8.12 | AEIAR 130/2009 EM&A Manual S2.8 | All existing trees should be carefully protected during construction. | Contractor | All relevant worksites | Not Applicable |
| | | Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work. | Contractor | All relevant worksites | Not Applicable |
| | | Control of night-time lighting. | Contractor | All relevant worksites | Not Applicable |
| | | Erection of decorative screen hoarding. | Contractor | All relevant worksites | Implemented |
| Trunk Road T2 | | | | | |
| Construction Phase | | | | | |
| AEIAR-174/2013 S9.9.1.1 | AEIAR-174/2013 EM&A Manual S7.2.1.2 | All works shall be carefully designed to minimize impacts on existing landscape resources and visually sensitive receivers. Existing trees within works area shall be retained and protected. | Contractor | All relevant worksites | Not Applicable |
| | | Existing trees of good quality and condition that are unavoidably affected by the works should be transplanted. | Contractor | All relevant worksites | Not Applicable |
| | | Large temporary stockpiles of excavated material shall be covered with unobtrusive sheeting to prevent dust and dirt spreading to adjacent landscape areas and vegetation, and to create a neat and tidy visual appearance. | Contractor | All relevant worksites | Partially Implemented |
| | | Construction plant and building material shall be orderly and carefully stored in order to create a neat and tidy visual appearance. | Contractor | All relevant worksites | Implemented |
| | | Erection of decorative screen hoarding should be designed to be compatible with the existing urban context. | Contractor | All relevant worksites | Implemented |
| | | All lighting in construction site shall be carefully controlled to minimize light pollution and night-time glare to nearby residences and GIC user. The contractor shall consider other security measures, which shall minimize the visual impacts. | Contractor | All relevant worksites | Not Applicable |
| General Condition | | | | | |
| | | The Permit Holder shall display conspicuously a copy of this Permit on the Project site(s) at all vehicular site entrances/exits or at a convenient location for public's information at all times. The Permit Holder shall ensure that the most updated information about the Permit, including | Contractor | All relevant worksites | Implemented |

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MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,
 Profit Industrial Building,
 1-15 Kwai Fung Crescent, Kwai Fong,
 Hong Kong..

Tel : (852)-24508238
 Fax : (852)-24508032
 Email : mcl@fugro.com.hk



| EIA Ref | EMRA Ref | Environmental Protection Measures / Mitigation Measures | Who to implement the measure | Location / Timing | Construction Phase Implementation Status |
|---------|----------|--|------------------------------|-------------------|---|
| | | any amended Permit, is displayed at such locations. If the Permit Holder surrenders a part or the whole of the Permit, the notice he sends to the Director shall also be displayed at the same locations as the original Permit. The suspended, varied or cancelled Permit shall be removed from display at the Project site(s). | | | |

Implementation status: Implemented / Partially Implemented / Not Implemented / Not Applicable

MATERIALAB CONSULTANTS LIMITED

Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..

Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

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Appendix G

Quarterly Assessment on Construction Impacts

Baseline 24hr TSP vs Impact 24hr TSP at KTD1a

| Date | Baseline 24 hr TSP (ug/m3) |
|-----------|----------------------------|
| 20-Jan-16 | 42 |
| 22-Jan-16 | 25 |
| 23-Jan-16 | 95 |
| 24-Jan-16 | 19 |
| 25-Jan-16 | 144 |
| 26-Jan-16 | 184 |
| 27-Jan-16 | 68 |
| 28-Jan-16 | 12 |
| 29-Jan-16 | 61 |
| 30-Jan-16 | 53 |
| 31-Jan-16 | 35 |
| 1-Feb-16 | 60 |
| 2-Feb-16 | 103 |
| 3-Feb-16 | 124 |

| Date | Impact 24 hr TSP (ug/m3) |
|-----------|--------------------------|
| 1-Mar-16 | 208 |
| 7-Mar-16 | 65 |
| 12-Mar-16 | 79 |
| 18-Mar-16 | 98 |
| 24-Mar-16 | 44 |
| 30-Mar-16 | 168 |
| 5-Apr-16 | 87 |
| 11-Apr-16 | 61 |
| 16-Apr-16 | 105 |
| 22-Apr-16 | 62 |
| 28-Apr-16 | 81 |
| 4-May-16 | 61 |
| 10-May-16 | 47 |
| 16-May-16 | 106 |
| 21-May-16 | 59 |
| 27-May-16 | 48 |

Baseline 24hr TSP vs Impact 24hr TSP at KTD1a

| Baseline 24 hour TSP (ug/m3) | | Quarterly 24 hour TSP (ug/m3) | |
|---|-------|--|---------|
| Raw Statistics | | Raw Statistics | |
| Number of Valid Observations | 14 | Number of Valid Observations | 16 |
| Number of Distinct Observations | 14 | Number of Distinct Observations | 16 |
| Minimum | 12 | Minimum | 44.07 |
| Maximum | 184 | Maximum | 208.4 |
| Mean of Raw Data | 73.21 | Mean of Raw Data | 86.14 |
| Standard Deviation of Raw Data | 50.71 | Standard Deviation of Raw Data | 45.01 |
| Kstar | 1.704 | Kstar | 4.217 |
| Mean of Log Transformed Data | 4.038 | Mean of Log Transformed Data | 4.356 |
| Standard Deviation of Log Transformed Data | 0.791 | Standard Deviation of Log Transformed Data | 0.44 |
| Normal Distribution Test Results | | Normal Distribution Test Results | |
| Correlation Coefficient R | 0.966 | Correlation Coefficient R | 0.889 |
| Shapiro Wilk Test Statistic | 0.927 | Shapiro Wilk Test Statistic | 0.798 |
| Shapiro Wilk Critical (0.95) Value | 0.874 | Shapiro Wilk Critical (0.95) Value | 0.887 |
| Approximate Shapiro Wilk P Value | 0.301 | Approximate Shapiro Wilk P Value | 0.00196 |
| Lilliefors Test Statistic | 0.184 | Lilliefors Test Statistic | 0.204 |
| Lilliefors Critical (0.95) Value | 0.237 | Lilliefors Critical (0.95) Value | 0.222 |
| Data appear Normal at (0.05) Significance Level | | Data not Normal at (0.05) Significance Level | |

| Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs | | |
|---|---|------------|
| User Selected Options | | |
| From File | | |
| Full Precision | OFF | |
| Confidence Coefficient | 95% | |
| Substantial Difference | 0 | |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) | |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median | |
| Area of Concern Data: Quarterly 24 hour TSP (ug/m3) | | |
| Background Data: Baseline 24 hour TSP (ug/m3) | | |
| Raw Statistics | | |
| | Site | Background |
| Number of Valid Observations | 16 | 14 |
| Number of Distinct Observations | 16 | 14 |
| Minimum | 44.07 | 12 |
| Maximum | 208.4 | 184 |
| Mean | 86.14 | 73.21 |
| Median | 71.8 | 60.5 |
| SD | 45.01 | 50.71 |
| SE of Mean | 11.25 | 13.55 |
| Wilcoxon-Mann-Whitney (WMW) Test | | |
| H0: Mean/Median of Site or AOC <= Mean/Median of Background | | |
| Site Rank Sum W-Stat | 275 | |
| WMW Test U-Stat | 139 | |
| WMW Critical Value (0.050) | 152 | |
| Approximate P-Value | 1.35E-01 | |
| Conclusion with Alpha = 0.05 | | |
| Do Not Reject H0, Conclude Site <= Background | | |

Baseline 24hr TSP vs Impact 24hr TSP at KTD2a

| Date | Baseline 24 hr TSP (ug/m3) |
|-----------|----------------------------|
| 20-Jan-16 | 39 |
| 22-Jan-16 | 27 |
| 23-Jan-16 | 25 |
| 24-Jan-16 | 75 |
| 25-Jan-16 | 52 |
| 26-Jan-16 | 75 |
| 27-Jan-16 | 62 |
| 28-Jan-16 | 36 |
| 29-Jan-16 | 17 |
| 30-Jan-16 | 24 |
| 31-Jan-16 | 66 |
| 1-Feb-16 | 40 |
| 2-Feb-16 | 17 |
| 3-Feb-16 | 39 |

| Date | Impact 24 hr TSP (ug/m3) |
|-----------|--------------------------|
| 1-Mar-16 | 198 |
| 7-Mar-16 | 67 |
| 12-Mar-16 | 93 |
| 18-Mar-16 | 100 |
| 24-Mar-16 | 51 |
| 30-Mar-16 | 205 |
| 5-Apr-16 | 138 |
| 6-Apr-16 | 119 |
| 11-Apr-16 | 81 |
| 16-Apr-16 | 39 |
| 22-Apr-16 | 47 |
| 28-Apr-16 | 90 |
| 4-May-16 | 53 |
| 10-May-16 | 32 |
| 16-May-16 | 79 |
| 21-May-16 | 23 |
| 27-May-16 | 36 |

Baseline 24hr TSP vs Impact 24hr TSP at KTD2a

| Baseline 24 hour TSP (ug/m3) | | Quarterly 24 hour TSP (ug/m3) | |
|---|-------|--|-------|
| Raw Statistics | | Raw Statistics | |
| Number of Valid Observations | 14 | Number of Valid Observations | 17 |
| Number of Distinct Observations | 11 | Number of Distinct Observations | 17 |
| Minimum | 17 | Minimum | 23.27 |
| Maximum | 75 | Maximum | 205.3 |
| Mean of Raw Data | 42.43 | Mean of Raw Data | 85.42 |
| Standard Deviation of Raw Data | 20.38 | Standard Deviation of Raw Data | 53.96 |
| Kstar | 3.594 | Kstar | 2.456 |
| Mean of Log Transformed Data | 3.633 | Mean of Log Transformed Data | 4.268 |
| Standard Deviation of Log Transformed Data | 0.509 | Standard Deviation of Log Transformed Data | 0.624 |
| Normal Distribution Test Results | | Normal Distribution Test Results | |
| Correlation Coefficient R | 0.965 | Correlation Coefficient R | 0.941 |
| Shapiro Wilk Test Statistic | 0.91 | Shapiro Wilk Test Statistic | 0.879 |
| Shapiro Wilk Critical (0.95) Value | 0.874 | Shapiro Wilk Critical (0.95) Value | 0.892 |
| Approximate Shapiro Wilk P Value | 0.222 | Approximate Shapiro Wilk P Value | 0.033 |
| Lilliefors Test Statistic | 0.19 | Lilliefors Test Statistic | 0.161 |
| Lilliefors Critical (0.95) Value | 0.237 | Lilliefors Critical (0.95) Value | 0.215 |
| Data appear Normal at (0.05) Significance Level | | Data not Normal at (0.05) Significance Level | |

| Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs | | |
|---|---|------------|
| User Selected Options | | |
| From File | | |
| Full Precision | OFF | |
| Confidence Coefficient | 95% | |
| Substantial Difference | 0 | |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) | |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median | |
| Area of Concern Data: Quarterly 24 hour TSP (ug/m3) | | |
| Background Data: Baseline 24 hour TSP (ug/m3) | | |
| Raw Statistics | | |
| | Site | Background |
| Number of Valid Observations | 17 | 14 |
| Number of Distinct Observations | 17 | 11 |
| Minimum | 23.27 | 17 |
| Maximum | 205.3 | 75 |
| Mean | 85.42 | 42.43 |
| Median | 79.02 | 39 |
| SD | 53.96 | 20.38 |
| SE of Mean | 13.09 | 5.446 |
| Wilcoxon-Mann-Whitney (WMW) Test | | |
| H0: Mean/Median of Site or AOC <= Mean/Median of Background | | |
| Site Rank Sum W-Stat | 340 | |
| WMW Test U-Stat | 187 | |
| WMW Critical Value (0.050) | 160 | |
| Approximate P-Value | 3.69E-03 | |
| Conclusion with Alpha = 0.05 | | |
| Reject H0, Conclude Site > Background | | |

Baseline 24hr TSP vs Impact 24hr TSP at KER1a

| Date | Baseline 24 hr TSP (ug/m3) |
|-----------|----------------------------|
| 20-Jan-16 | 71 |
| 22-Jan-16 | 49 |
| 23-Jan-16 | 34 |
| 24-Jan-16 | 94 |
| 25-Jan-16 | 17 |
| 26-Jan-16 | 129 |
| 27-Jan-16 | 113 |
| 28-Jan-16 | 64 |
| 29-Jan-16 | 27 |
| 30-Jan-16 | 59 |
| 31-Jan-16 | 99 |
| 1-Feb-16 | 38 |
| 2-Feb-16 | 40 |
| 3-Feb-16 | 80 |

| Date | Impact 24 hr TSP (ug/m3) |
|-----------|--------------------------|
| 1-Mar-16 | 147 |
| 7-Mar-16 | 59 |
| 12-Mar-16 | 53 |
| 18-Mar-16 | 64 |
| 24-Mar-16 | 56 |
| 30-Mar-16 | 150 |
| 5-Apr-16 | 38 |
| 11-Apr-16 | 54 |
| 16-Apr-16 | 74 |
| 22-Apr-16 | 63 |
| 28-Apr-16 | 83 |
| 4-May-16 | 47 |
| 10-May-16 | 76 |
| 16-May-16 | 110 |
| 21-May-16 | 97 |
| 27-May-16 | 93 |

Baseline 24hr TSP vs Impact 24hr TSP at KER1a

| Baseline 24 hour TSP (ug/m3) | | Quarterly 24 hour TSP (ug/m3) | |
|---|-------|--|--------|
| Raw Statistics | | Raw Statistics | |
| Number of Valid Observations | 14 | Number of Valid Observations | 16 |
| Number of Distinct Observations | 14 | Number of Distinct Observations | 16 |
| Minimum | 17 | Minimum | 38.37 |
| Maximum | 129 | Maximum | 149.8 |
| Mean of Raw Data | 65.29 | Mean of Raw Data | 79.01 |
| Standard Deviation of Raw Data | 33.98 | Standard Deviation of Raw Data | 33.23 |
| Kstar | 2.891 | Kstar | 5.63 |
| Mean of Log Transformed Data | 4.034 | Mean of Log Transformed Data | 4.295 |
| Standard Deviation of Log Transformed Data | 0.586 | Standard Deviation of Log Transformed Data | 0.391 |
| Normal Distribution Test Results | | Normal Distribution Test Results | |
| Correlation Coefficient R | 0.986 | Correlation Coefficient R | 0.941 |
| Shapiro Wilk Test Statistic | 0.961 | Shapiro Wilk Test Statistic | 0.88 |
| Shapiro Wilk Critical (0.95) Value | 0.874 | Shapiro Wilk Critical (0.95) Value | 0.887 |
| Approximate Shapiro Wilk P Value | 0.786 | Approximate Shapiro Wilk P Value | 0.0418 |
| Lilliefors Test Statistic | 0.129 | Lilliefors Test Statistic | 0.179 |
| Lilliefors Critical (0.95) Value | 0.237 | Lilliefors Critical (0.95) Value | 0.222 |
| Data appear Normal at (0.05) Significance Level | | Data not Normal at (0.05) Significance Level | |

| Wilcoxon-Mann-Whitney Site vs Background Comparison Test for Full Data Sets without NDs | | |
|---|---|------------|
| User Selected Options | | |
| From File | | |
| Full Precision | OFF | |
| Confidence Coefficient | 95% | |
| Substantial Difference | 0 | |
| Selected Null Hypothesis | Site or AOC Mean/Median Less Than or Equal to Background Mean/Median (Form 1) | |
| Alternative Hypothesis | Site or AOC Mean/Median Greater Than Background Mean/Median | |
| Area of Concern Data: Quarterly 24 hour TSP (ug/m3) | | |
| Background Data: Baseline 24 hour TSP (ug/m3) | | |
| Raw Statistics | | |
| | Site | Background |
| Number of Valid Observations | 16 | 14 |
| Number of Distinct Observations | 16 | 14 |
| Minimum | 38.37 | 17 |
| Maximum | 149.8 | 129 |
| Mean | 79.01 | 65.29 |
| Median | 68.89 | 61.5 |
| SD | 33.23 | 33.98 |
| SE of Mean | 8.308 | 9.082 |
| Wilcoxon-Mann-Whitney (WMW) Test | | |
| H0: Mean/Median of Site or AOC <= Mean/Median of Background | | |
| Site Rank Sum W-Stat | 272 | |
| WMW Test U-Stat | 136 | |
| WMW Critical Value (0.050) | 152 | |
| Approximate P-Value | 1.64E-01 | |
| Conclusion with Alpha = 0.05 | | |
| Do Not Reject H0, Conclude Site <= Background | | |