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**TEST REPORT**

**NGO KEE CONSTRUCTION CO., LTD.**

**DRAINAGE IMPROVEMENT WORKS  
AT MO FAN HEUNG STREAM AND  
WING NING WAI  
(DSD CONTRACT NO.: DC/2002/16)**


**FINAL MONITORING REPORT**

**(04 JULY TO 12 AUGUST 2005)**

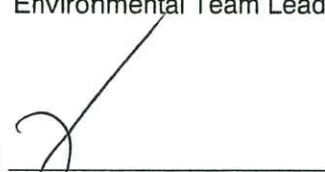
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Operations Manager

Report No.: ENA50455



# Stanger Asia

## INDEPENDENT ENVIROMENTAL CHECKER CHECK CERTIFICATE

**Contract No. DC/2002/16**  
**Drainage Improvement Works at Mo Fan Heung and Wing Ning Wai**

**Final Monitoring Report (04 July TO 12 August 2005)**

We certify that reasonable skill and care have been used in the checking of this report and the report has been verified by the IEC.

Signed:   
Independent Environmental Checker

Name: Wilson Fok  
Contract Manager  
Stanger Asia Limited

Date: 25 August 2005

Registered in Hong Kong No. 146287  
A Carillion company

Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory activities as listed in the HOKLAS Directory of Accredited

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## **EXECUTIVE SUMMARY**

The Final Monitoring Report has been prepared to document the final monitoring works conducted for the Contract No. DC/2002/16 Drainage Improvement Works at Mo Fan Heung Stream and Wing Ning Wai (The Project) during the reporting period from 04 July to 12 August 2005 under the Environmental Permit No. EP-031/1999 (the EP) and the EM&A Manual (Register No.: EIA-093/BC) – Rural Drainage Rehabilitation Scheme Environmental Impact Assessment Final Assessment Report Environmental Monitoring & Audit Manual (the EM&A Manual).

In accordance with the Section 1.108(3) of Particular Specification, final monitoring of water quality for six weeks after the completion of works in Portion A was required for the Project.

### **Environmental Monitoring Progress**

The summary of the monitoring activities in this monitoring is listed below:

- *Water Monitoring: 18 Occasions at 3 designated locations.*

### **Water Quality Monitoring**

No exceedances of Action and Limit Levels were recorded for water quality monitoring parameters in this reporting month.

According to the water quality results of the final monitoring, the ambient conditions have been restored since there was no significant difference between the baseline data and final monitoring data. Besides, the final monitoring data indicated that no unacceptable environmental impacts arising from the Project had been caused to the surrounding sensitive receivers. The environmental measures had been effective in controlling potential impacts to within acceptable sensitive receivers.



## 1.0 INTRODUCTION

"Ngo Kee Construction Co., Ltd." (NK) has been awarded the DSD Contract No.: DC/2002/16, "Drainage Improvement Works at Mo Fan Heung Stream and Wing Ning Wai" (the Project) by the DSD. "ETS-Testconsult Limited" (ETL) has been commissioned as Environmental Team (ET) to carry out air quality, noise and water quality monitoring for the Project according to the requirements and specifications of "the Environmental Permit (No. EP-031/1999)" (the EP) and "the EM&A Manual (Register No.: EIA-093/BC) – Rural Drainage Rehabilitation Scheme Environmental Impact Assessment Final Assessment Report Environmental Monitoring & Audit Manual" (the EM&A Manual).

Under the requirements of Section 4 of the EP, EM&A programme as set out in the EM&A Manual is required to be implemented. In accordance with the Section 5.1.3 of the EM&A manual and Section 1.108(3) of the Particular Specification (the PS), a final monitoring of water quality is required for the Project.

The baseline monitoring report of this Project has been prepared and submitted to EPD under the requirements of EP.

This final monitoring report summarizes the monitoring results of the EM&A program during the reporting period from 04 July to 12 August 2005.

## 2.0 PROJECT INFORMATION

### 2.1 Background

Under the Project, the major construction works are as below:

- *Rectangular drainage channels with maintenance access roads and embankments at Mo Fan Heung Stream and drainage connection at Castle Peak Road.*
- *Rectangular drainage channels at Wing Ning Wai in Fanling and drainage connection to Wing Ning Wai Phase 1 works (constructed under another contract).*
- *Modification works to the existing outfall to Ma Wat River at Wing Ning Wai.*
- *Drainage works associated with the two channels.*
- *Landscaping works.*
- *Other ancillary works associated.*

The Project was planned and designed by the Drainage Services Department. As the main Contractor of the captioned project contracted by, NK will follow the environmental monitoring recommendation stated in the EM&A Manual.

### 2.2 Site Description

The construction site is located at Mo Fan Heung. The general layout plan of the project is shown in Drawing No. DDN/131CD/2047.

Surrounding the construction site, there are air and noise sensitive receivers: Mo Fan Tsuen, Wing Kei Tsuen and village houses near the Castle Peak Road and Mo Fan Heung Stream.

The air quality, noise and water quality monitoring locations of this project are shown in Drawing No. DDN/131CD/2047.

### 2.3 Project Organization

The organization chart with respect to the on-site environmental management and monitoring program are shown in Appendix B.



## 2.4 Contact Details of Key Personnel

The key personnel contact names and telephone numbers, and construction programme are shown in table 2.1.

Table 2.1 Contact Details of Key Personnel

Organization	Project Role	Name of Key Staff	Tel. No.	Fax No.
DSD	Employer/Client	Mr. W. L. Tsui	9181 1511	2828 8700
Ngo Kee	Contractor	Mr. John Leung	9212 3953	2944 1347
Stanger Asia	Independent Environmental Checker	Mr. Wilson Fok	2682 1203	2682 0046
ETL	Contractor's Environmental Team (ET)	Mr. C L Lau (ET Leader)	2946 7791	2695 3944

## 3.0 FINAL WATER QUALITY MONITORING

### 3.1 Monitoring Requirement

As the requirement in the EM&A manual and the PS, a final monitoring was carried out at three designated monitoring locations, W1, W2 and W3, for six weeks.

### 3.2 Monitoring Parameters

Monitoring parameters listed in Table 3.1 were measured out by the ET. Table 3.2 shows the other relevant water quality data recorded during the final monitoring.

Table 3.1 Monitoring Parameters for Water Quality Monitoring

In-situ measurement	Laboratory analysis
Dissolved Oxygen (mg/L)	Suspended solids (mg/L)

Table 3.2 Other relevant water quality parameters

Water Quality Parameters	
Tidal stages	Ambient Temperature (°C)
Water depth (m)	Weather Condition
Monitoring time (hr:mm)	Salinity (ppt)

### 3.3 Monitoring Frequency

According to the Section 1.108(3) of the PS, final monitoring was carried out on 2 tides per day and 3 days a week.

The monitoring frequency of marine water quality is summarized in Table 3.3.

Table 3.3 Monitoring frequency of Water Quality Monitoring

Frequency	Monitoring Depth
3 days/week, 2 tides/day	Surface and Bottom (Only Middle Level required if water depth <1.5m)

### 3.4 Monitoring Methodology and Equipment Used

#### Water Depth measurement

A portable, battery-operated echo sounder was used for the determination of water depth at each designated monitoring station.



### **In-situ Water Quality Monitoring Equipment**

All in-situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals or sometimes longer throughout all stages of the water quality monitoring.

### **Dissolved Oxygen (DO) and temperature measuring equipment**

Portable, weatherproof DO-measuring meter with built-in salinity compensation (YSI model 95) was used in the monitoring. It can be capable for measuring:

- a dissolved oxygen level in the range of 0-20 mg/L and 0-200 % saturation; and
- a temperature of 0-45 degree Celsius

This type of DO-measuring meter has a membrane electrode with automatic temperature compensation complete with a 50-foot cable. Wet bulb calibration for a DO meter was carried out before measurement at each monitoring location

### **Salinity**

A portable salinity meter capable of measuring salinity in the range 0-40 ppt (YSI Model 30M) was provided for measuring salinity of the water at each monitoring location. It was checked with standard 30 ppt Salinity solutions before the start of measurement.

### **Water Sampling and Sample Analysis**

In-situ monitoring was carried out at two depths: 0.5 meter below water surface and 0.5 meter above the river bed. If the water depth is less than 1.5m, only one sample shall be taken from the middle of the water column.

The sample container, made by high-density polythene, was rinsed with a portion of the water sample. The water sample was then transferred to the container, labelled with a unique sample ID and sealed with a screw cap. The water samples were stored in a cool box maintained at 4°C. The water samples were then delivered to a local HOKLAS-accredited laboratory (Environmental Laboratory, ETS-Testconsult Ltd, HOKLAS Registration No. 022) on the same day for analysis.

## **3.5 Details of site Equipment used for In-situ measurement**

Table 3.4 shows the equipment used for in-situ monitoring of water quality. The calibration certificates are attached in Appendix C1.

Table 3.4 Details of Monitoring Equipment (In-situ measurement)

Parameter	Model	Date of Calibration / Performance Check	Due Date	Equipment No.
Dissolved Oxygen (Saturation), Temperature	YSI Dissolved Oxygen Meter, YSI 95	01/06/2005	31/08/2005	EW/003/001 *
Salinity	YSI Model 30M	27-04-2005 27-07-2005	26-07-2005 26-10-2005	ET/0527/001#
Water Depth	EAGLE Strata 128 Sonar	-----	-----	EW/002/02

Remark: (\*) indicates the instrument should be calibrated on use.  
(#) indicates the instrument should be checked with standard solution before use.

## **3.6 Monitoring Duration and Period**

Final monitoring was carried out at both mid-flood and mid-ebb at each location on a sampling day. Table 3.5 shows the schedule for final water quality monitoring at Mo Fan Heung Stream during this reporting month.



Table 3.5 Schedule for Final Monitoring at Mo Fan Heung Stream

Sun	Mon	Tue	Wed	Thu	Fri	Sat
3/7	4 WQM Mid-ebb (12:15) Mid-flood (18:30)	5	6 WQM Mid-ebb (13:45) Mid-flood (18:30)	7	8 WQM Mid-flood (08:45) Mid-ebb (15:00)	9
10	11 WQM Mid-flood (09:30) Mid-ebb (16:00)	12	13 WQM Mid-flood (10:00) Mid-ebb (16:45)	14	15 WQM Mid-ebb (08:45) Mid-flood (14:00)	16
17	18 WQM Mid-ebb (11:00) Mid-flood (17:30)	19	20 WQM Mid-ebb (12:00) Mid-flood (18:00)	21	22 WQM Mid-flood (08:00) Mid-ebb (14:30)	23
24	25 WQM Mid-flood (10:00) Mid-ebb (16:45)	26	27 WQM Mid-flood (11:30) Mid-ebb (17:45)	28	29 WQM Mid-ebb (08:00) Mid-flood (14:00)	30
31	1/8 WQM Mid-ebb (11:00) Mid-flood (17:45)	2	3 WQM Mid-ebb (12:45) Mid-flood (18:30)	4	5 WQM Mid-flood (08:15) Mid-ebb (14:00)	6
7	8 WQM Mid-flood (09:00) Mid-ebb (15:45)	9	10 WQM Mid-flood (10:15) Mid-ebb (16:30)	11	12 WQM Mid-flood (11:45) Mid-ebb (17:30)	13

### 3.7 Action and Limit Level

Action/Limit (A/L) Levels for Steam Water Monitoring Parameters at Mo Fan Heung are determined according to the following Table 3.6.

Table 3.6 Action and Limit Levels for Water Quality at Mo Fan Heung

Parameter	Action Level	Limit Level
DO (mg/L)	<u>Surface &amp; Middle</u> 2.15 mg/L  <u>Bottom</u> 1.66 mg/L	<u>Surface &amp; Middle</u> 1.68 mg/L  <u>Bottom</u> 1.60 mg/L
SS (mg/L) (Depth-averaged)	103 mg/L and 120% of the upstream control station's SS at the same tide on the same day	130% of the upstream control station's SS at the same tide on the same day

- Notes:
- "depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
  - For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
  - For turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
  - All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.

### 3.8 Event-Action Plans

Please refer to the Appendix G for details.





### **3.9 Results**

No exceedances of Action and Limit Level of water quality monitoring parameters were recorded in this final monitoring. All monitoring results are provided in Appendix D2. Graphical presentation of the monitoring results for the reporting month are shown in Appendix D3.

### **4.0 CONCLUSION**

Since there was no exceedance of Action and Limit Level of water quality monitoring parameters recorded during the final monitoring, this indicated that no unacceptable environmental impacts arising from the Project had been caused to the surrounding sensitive receivers. The environmental measures had been effective in controlling potential impacts to within acceptable sensitive receivers.

Comparing the water quality results of the baseline monitoring and final monitoring, there was no significant difference between the baseline data and final monitoring data and hence the ambient conditions around the construction site have been restored.



**Appendix A1**  
**Calibration Certificates for**  
**Water Quality Monitoring Equipments**



## Performance Check of Salinity Meter

Equipment Ref. No. : ET/0527/001      Manufacturer : YSZ  
Model No. : Model 30      Serial No. : 9987 1183  
Date of Calibration : 27 July 2005      Due Date : 26 Oct. 2005

Ref. No. of Salinity Standard used (30ppt)

J196A

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	29.6	1.3

Acceptance Criteria

Difference : <10 %

The salinity meter complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / ~~unacceptable~~ \* for use. Measurements are traceable to national standards.

Checked by : RL

Approved by : Wanda Law



## Performance Check of Salinity Meter

Equipment Ref. No. : ET/0507/001      Manufacturer : YSI  
Model No. : Model 30      Serial No. : 9967 1183  
Date of Calibration : 27 Apr 2005      Due Date : 26 July 2005

Ref. No. of Salinity Standard used (30ppt)

J196A

Salinity Standard (ppt)	Measured Salinity (ppt)	Difference %
30	29.8	0.7 <del>10</del> %

Acceptance Criteria

Difference : <10 %

The salinity meter complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / ~~unacceptable~~ \* for use. Measurements are traceable to national standards.

Checked by : *PK*

Approved by : *Linda*



### Internal Calibration Report of Dissolved Oxygen Meter

Equipment Ref. No. : <u>ET/EW/003/001</u>	Manufacturer : <u>YSI</u>
Model No. : <u>95</u>	Serial No. : <u>97H 04071AD</u>
Date of Calibration : <u>01/06/05</u>	Calibration Due Date : <u>31/08/05</u>

Ref. No. of Reference Thermometer : ET/2403/01

Ref. No. of Potassium Dichromate : ET/0520/003/02

#### Temperature Verification

	Temperature (°C)
Thermometer reading	20.0
Meter reading	20.0

#### Linearity Checking

Purging time, min	DO meter reading, mg/L			Winkler Titration result, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
2	7.10	7.08	7.09	7.00	6.98	6.99	1.42
5	5.10	5.08	5.09	5.11	5.09	5.10	0.20
10	3.33	3.31	3.32	3.21	3.19	3.20	3.68
Linear regression coefficient				0.9987			

#### Zero Point Checking

DO meter reading, mg/L	0.00
------------------------	------

#### Salinity Checking

Salinity (ppt)	DO meter reading, mg/L			Winkler Titration result, mg/L			Difference (%) of DO Content
	1	2	Average	1	2	Average	
10	6.84	6.86	6.85	6.82	6.84	6.83	0.29
30	6.19	6.17	6.18	6.11	6.09	6.10	1.30

#### Acceptance Criteria

- (1) Difference between temperature readings from temperature sensor of DO probe and reference thermometer : < 0.5 °C
- (2) Linear regression coefficient : > 0.99
- (3) Zero checking: 0.0mg/L
- (4) Difference (%) of DO content from the meter reading and by winkler titration : within ± 5%

The equipment complies \* / ~~does not comply~~ \* with the specified requirements and is deemed acceptable \* / ~~unacceptable~~ \* for use.

\* Delete as appropriate

Calibrated by : Trinda Law

Approved by :



**Appendix A2**  
**Final Water Quality Monitoring Results**





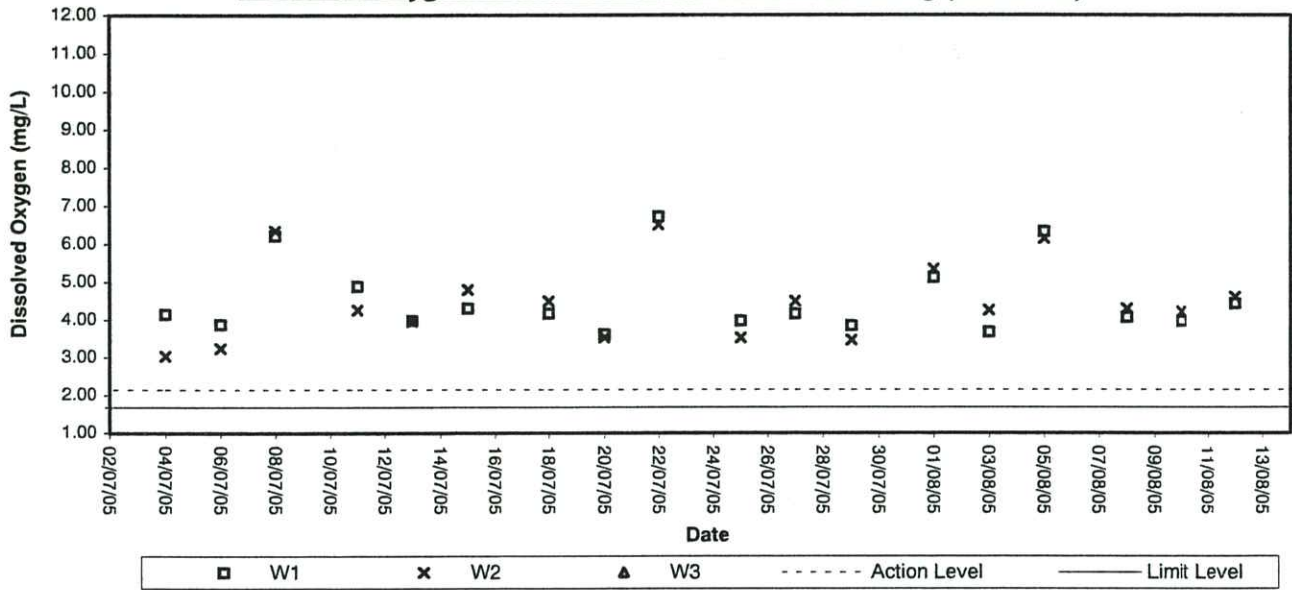
## **Appendix A3**

### **Graphical Plots of final Water Quality Monitoring Data**

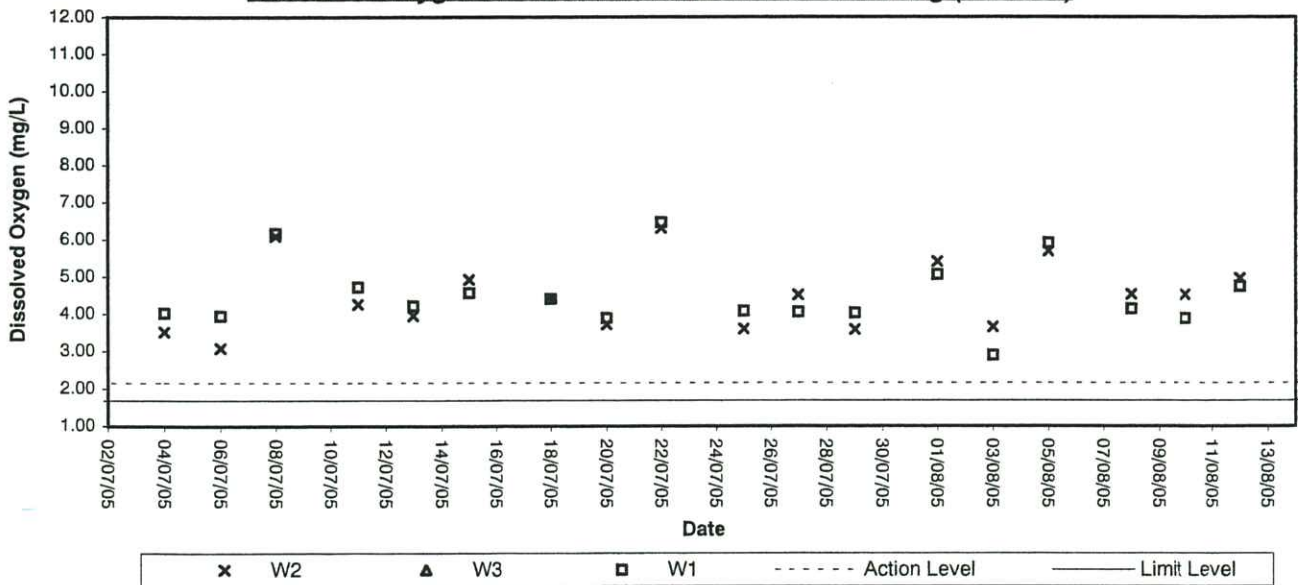




### Dissolved Oxygen of Stream Water from Mo Fan Heung (mid-flood)

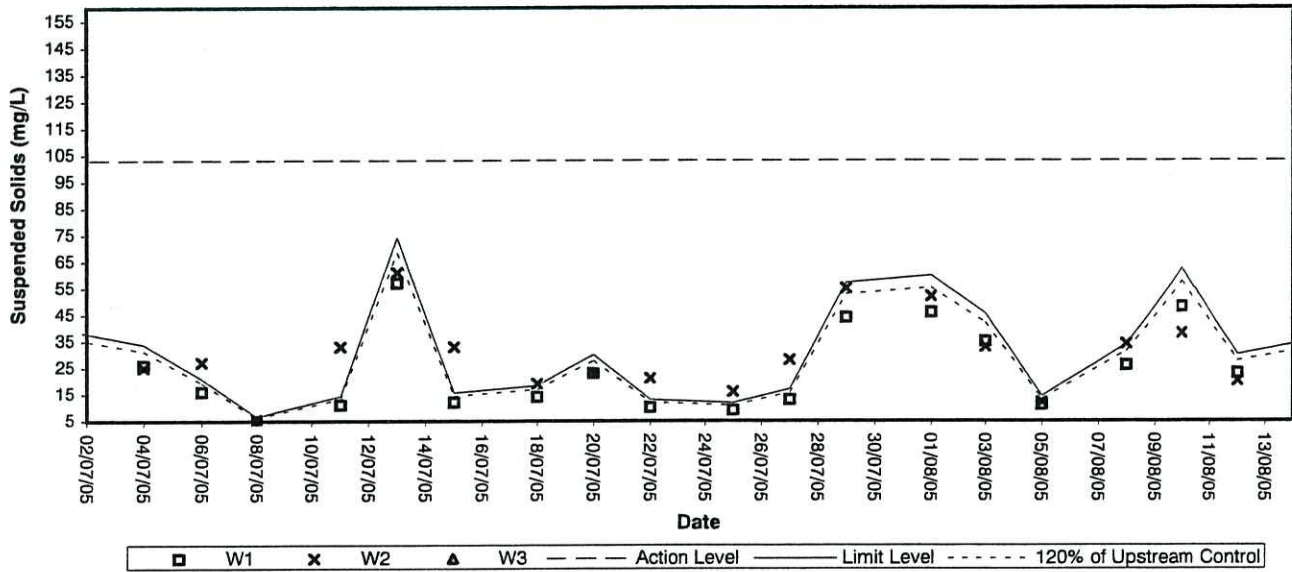


### Dissolved Oxygen of Stream Water from Mo Fan Heung (mid-ebb)

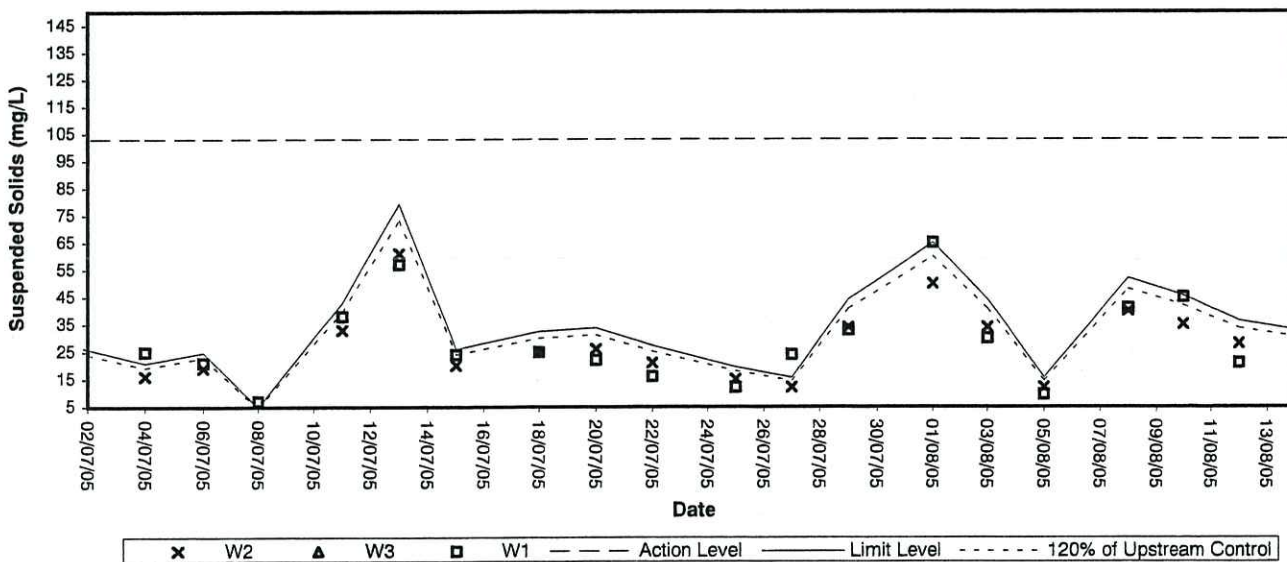




### Suspended Solids content of Stream Water from Mo Fan Heung (mid-flood)



### Suspended Solids content of Stream Water from Mo Fan Heung (mid-ebb)



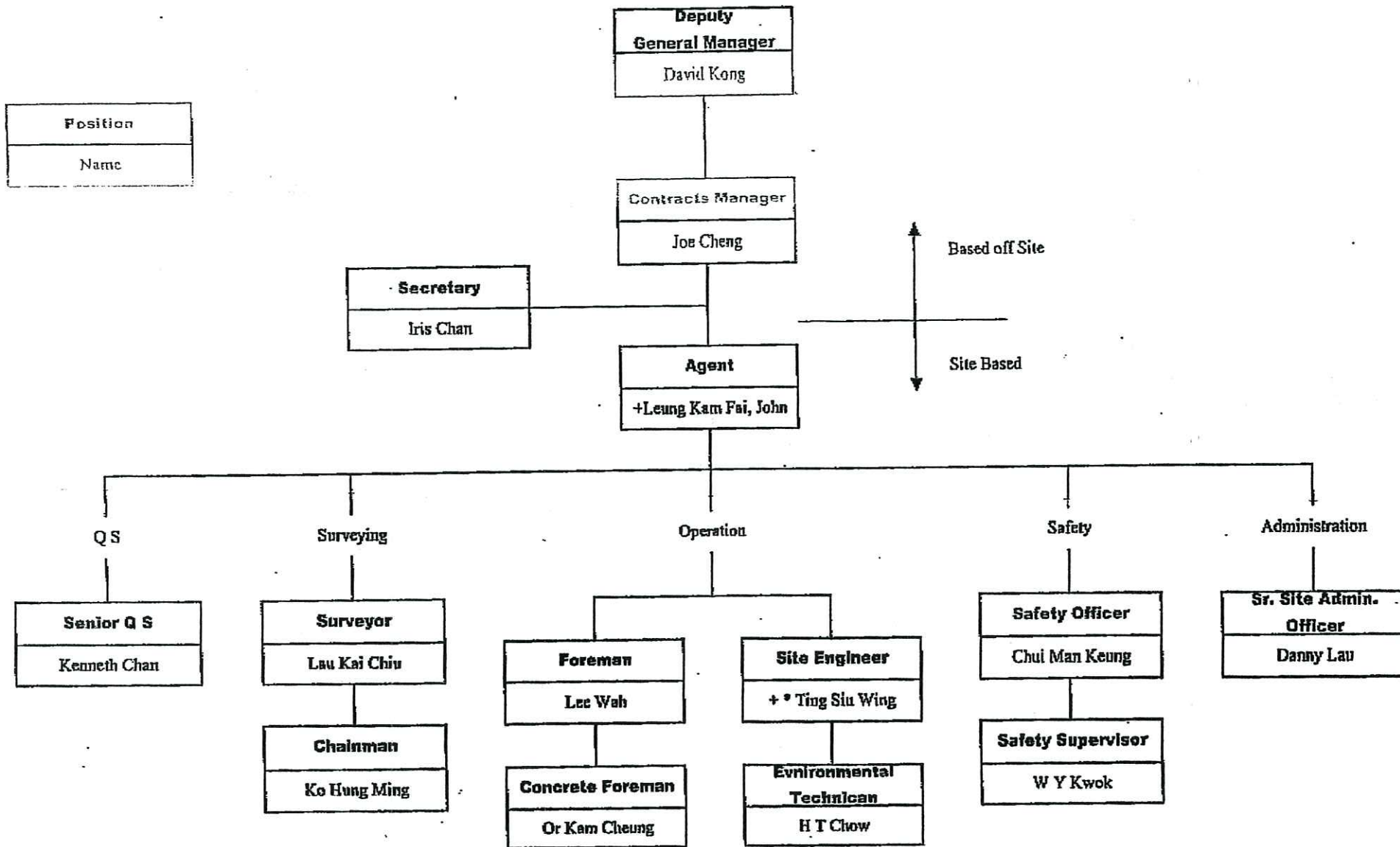


**Appendix B**  
**Project Organization**

**Contract No. : DC/2002/16**  
**Drainage Improvement Works**  
**at Mo Fan Heung Stream and Wing Ning Wai**  
**Organization Chart**

Date : 26-Feb-05  
 Rev : 6

Position
Name



**Remark :**

\* The persons who assigned to inspect the Daily Cleaning & Weekly Tidying

+ The persons who assigned to respond to the telephone hotline



**Appendix C**  
**Event-Action Plans**



## Event / Action Plan for Air Quality

EVENT	ET	ACTION		
		IEC	ER	CONTRACTOR
<b>Action Level</b>				
1. Exceedance of one sample	<ol style="list-style-type: none"> <li>1. Identify source</li> <li>2. Inform IEC and ER</li> <li>3. Repeat measurement to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET</li> <li>2. Check Contractor's working method.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice</li> <li>2. Amend working methods if possible</li> </ol>
2. Exceedance for two more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source</li> <li>2. Inform IEC and ER</li> <li>3. Repeat measurement to confirm findings</li> <li>4. Increase monitoring frequency to daily</li> <li>5. Discuss with IEC and Contractor on remedial actions required</li> <li>6. If exceedance continuous, arrange meeting with IEC and ER</li> <li>7. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Checking monitoring data submitted by ET</li> <li>2. Check Contractor's working method</li> <li>3. Discuss with ET and Contractor on possible remedial measures</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures</li> <li>5. Supervisor implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify Contractor</li> <li>3. Ensure remedial measures properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial action to IEC within 3 working days of notification</li> <li>2. Implement the agreed proposals</li> <li>3. Amend proposal if possible</li> </ol>
<b>Limit Level</b>				
1. Exceedance of one sample	<ol style="list-style-type: none"> <li>1. Identify source</li> <li>2. Inform ER and EPD</li> <li>3. Repeat measurement to confirm finding</li> <li>4. Increase monitoring frequency to daily</li> <li>5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET</li> <li>2. Check Contractor's working method.</li> <li>3. Discuss with ET and Contractor on possible remedial measures</li> <li>4. Advise the ER on the effectiveness of the proposal remedial measures</li> <li>5. Supervisor implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify Contractor</li> <li>3. Ensure remedial measures properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance</li> <li>2. Submit proposal for remedial actions to IEC within 3 working days of notification</li> <li>3. Implement the agreed proposals</li> <li>4. Amend proposal if appropriate</li> </ol>
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, Contractor and EPD</li> <li>2. Identify source</li> <li>3. Repeat measurement to confirm findings</li> <li>4. Increase monitoring frequency to daily</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented</li> <li>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER to discuss the remedial action to taken</li> <li>8. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on potential remedial actions</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly</li> <li>3. Supervise the implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify Contractor</li> <li>3. In consultation with the IEC, agreed with the Contractor on the remedial measures to be implemented</li> <li>4. Ensure remedial measures properly implemented</li> <li>5. If exceedance continues, consider what portion of this work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification</li> <li>3. Implement the agreed proposals</li> <li>4. Resubmit proposals if possible still not under control</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>



## Event / Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level	<ol style="list-style-type: none"><li>1. Notify IEC and Contractor</li><li>2. Carry out investigation</li><li>3. Report the results of investigation to the IEC and Contractor</li><li>4. Discuss with the Contractor and formulate remedial measures</li><li>5. Increase monitoring frequency to check mitigation effectiveness</li></ol>	<ol style="list-style-type: none"><li>1. Review the analyzed results submitted by the ET</li><li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly</li><li>3. Supervise the implementation of remedial measures</li></ol>	<ol style="list-style-type: none"><li>1. Confirm receipt of notification of failure in writing</li><li>2. Notify Contractor</li><li>3. Require Contractor to propose remedial measures for the analyzed noise problem</li><li>4. Ensure remedial measures are properly implemented</li></ol>	<ol style="list-style-type: none"><li>1. Submit noise mitigation proposal to IEC</li><li>2. Implement noise mitigation proposals</li></ol>
Limit Level	<ol style="list-style-type: none"><li>1. Notify IEC, ER, and Contractor</li><li>2. Identify source</li><li>3. Repeat measurement to confirm findings</li><li>4. Increase monitoring frequency</li><li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented</li><li>6. Inform IEC, ER and EPD the causes &amp; action taken for the exceedances</li><li>7. Assess effectiveness of Contractor's remedial action and keep IEC, EPD and ER informed to the results</li><li>8. If exceedance stops, cease additional monitoring</li></ol>	<ol style="list-style-type: none"><li>1. Discuss amongst ER, ET and Contractor on the potential remedial actions</li><li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly</li><li>3. Supervise the implementation of remedial measures</li></ol>	<ol style="list-style-type: none"><li>1. Confirm receipt of notification of failure in writing</li><li>2. Notify Contractor</li><li>3. Require Contractor to propose remedial measures for the analysed noise problem</li><li>4. Ensure remedial measures are properly implemented</li><li>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated</li></ol>	<ol style="list-style-type: none"><li>1. Take immediate action to avoid further exceedance</li><li>2. Submit proposals for remedial actions to IEC within 3 working days of notification</li><li>3. Implement the agreed proposals</li><li>4. Resubmit proposals if problem still not under control</li><li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated</li></ol>



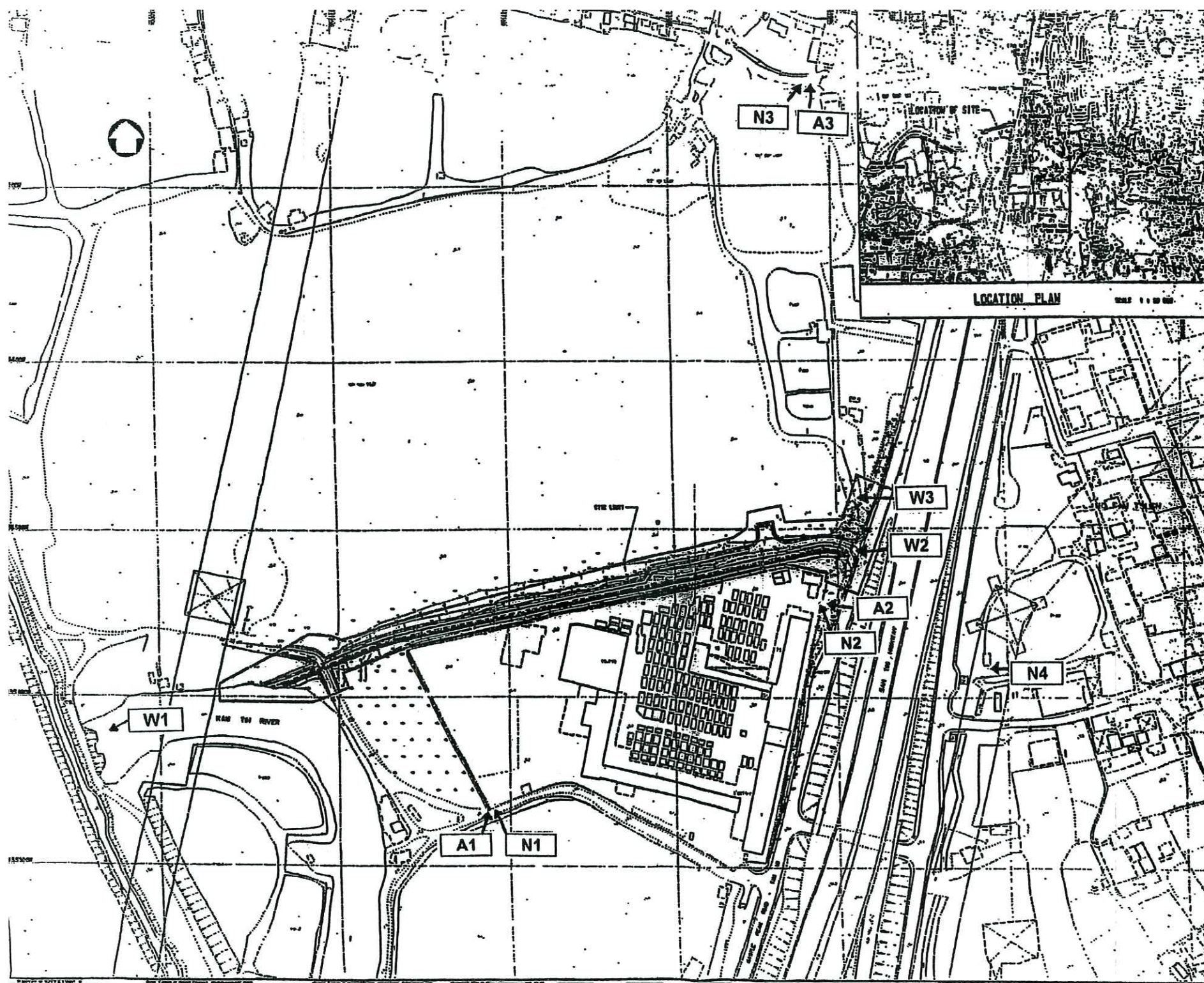
### Event Action Plan for Water Quality

Exceedance	Environmental Team (Environmental Consultant & Laboratory/Environ- mental Contractor)	Contractor	Engineer's Representative (ER)
Action level exceeded by one sampling day	Repeat <i>in-situ</i> measurement to confirm findings. Identify source(s) of impact. Inform contractor and EPD. Check monitoring data, all plant, equipment and Contractors working methods. Discuss mitigation measures with ER and Contractor. Repeat measurements on next day of exceedance	Inform the Engineer and confirm notification of the non-compliance in writing. Rectify unacceptable practice. Check all plant and equipment. consider changes of working methods. Propose mitigation measures to ER and discuss with ET and ER. Implement the agreed mitigation measures	Discuss with ET and Contractor the proposed mitigation- measures. Make agreement on the mitigation measures to be implemented. Assess the effectiveness of the implemented mitigation measures.
Action level exceeded by more than two consecutive sampling days	as above, and: Ensure mitigation measures are implemented. Prepare to increase the monitoring frequency to daily.	as above, and: Propose mitigation measures to ER within 3 working days and discuss with ET and ER.	as above
Limit level exceeded by one sampling day	as for "Action level exceeded by one sampling day" and: Ensure mitigation measures are implemented. Increase the monitoring frequency to daily until no exceedance of Limit level.	as above	Discuss with ET and Contractor on the proposed mitigation measures. Request Contractor to critically review the working methods. Make agreement on the mitigation measures to be implemented. Assess the effectiveness of the implemented mitigation measures.
Limit level exceeded by more than two consecutive sampling days	as above, except: Increase the monitoring frequency to daily until no exceedance of limit level for two consecutive days.	as above, and: As directed by the Engineer, to slow down or stop all or part of the marine work or construction activities	as above, and: Consider and instruct, if necessary, the Contractor to slow down or stop all or part of the marine work until no exceedance of Limit level.





## Figures




- NOTES :**
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
  2. ALL LEVELS REFER TO P.M.S.L. UNLESS OTHERWISE SPECIFIED.
  3. ALL WEIRS REFER TO HIGH WATERS FROM 1981.
  4. EXACT LOCATIONS TO BE DETERMINED ON SITE.

**LEGEND :**

<b>A</b>	AIR MONITORING STATION
<b>N</b>	NOISE MONITORING STATION
<b>W</b>	WATER MONITORING STATION

**FOR TENDER PURPOSES ONLY**

REVISED	DATE	BY	DATE
DESIGNED	15.1.2002	T. P. LO	15.1.2002
DRAWN	17.1.2002	T. P. LO	17.1.2002
CHECKED	17.1.2002	T. P. LO	17.1.2002
APPROVED	17.1.2002	T. P. LO	17.1.2002
 T. P. LO Chief Engineer			
drawing no. DC/2002/10			
file no. DP/04131CD			
project no. 4131CD			
contract			

**DRAINAGE IMPROVEMENT WORKS AT MO FAN HEUNG STREAM AND WING NING WAI**

Drawing title  
DRAINAGE IMPROVEMENT WORKS AT MO FAN HEUNG STREAM

**LOCATIONS OF AIR, NOISE AND WATER MONITORING STATIONS**

Drawing no.	Scale
DDN/131CD/2047	1 : 1000 OR AS SHOWN

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OFFICE  
**DRAINAGE PROJECTS DIVISION**

