EXECUTIVE SUMMARY

Introduction

This is the fifteenth monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the "Low Level Radioactive Waste Storage Facility at Siu A Chau" (the Project). This report documents the findings of Environmental Monitoring and Audit (EM&A) Works conducted in between 1st and 30th November 2004 inclusively.

The major site activities undertaken in the reporting month were:

- Construction of permanent site formation;
- Boulder stabilization works;
- Construction of permanent jetty;
- Construction of permanent causeway and yard area;
- Construction of microwave antenna station;
- Finishing works and
- E&M works.

Environmental Monitoring and Audit Works

Environmental monitoring for the Project was performed regularly as stipulated in the EM&A Manual and the results were checked and reviewed. A monthly site audit for this reporting month was conducted on 29th November 2004. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.

Summary of the non-compliance of the reporting month is tabulated in Table I.

Water Quality Monitoring

Water quality monitoring was conducted as scheduled in the reporting month.

Routine Water Quality Monitoring

A total of forty-one events showing exceedances of Limit Levels for suspended solids (SS) were recorded at the monitoring stations W1, W2 and W3 on 1st, 2nd, 4th, 8th, 10th, 12th, 15th, 16th, 19th, 22nd, 23rd, 25th, 29th and 30th in the reporting month.

A total of two events showing exceedances of Action/Limit Level for turbidity. One exceedance for Action Level recorded at W1 and one exceedance for Limit Level recorded at W2 on 30th in the reporting month.

A total of fourteenth events showing exceedances of Action/Limit Levels for dissolved oxygen (DO) at the monitoring stations W1, W2 and W3 were recorded on 10th and 15th in the reporting month.

12-hr Continuous Water Quality Monitoring

For the continuous water quality monitoring at station WS, events showing exceedances of Action/Limit levels for turbidity levels at station WS were recorded on 19th, 25th, 29th and 30th in the reporting month.

No Action/ Limit Level exceedance for DO was recorded in the reporting month.

Comment from ET

For Routine Water Quality Monitoring

According to the ET's investigation, no direct evidence demonstrating that the exceedances of Action/Limit levels for SS on 8th, 12th, 16th, 29th and 30th and for turbidity on 30th were identified. The cause of SS exceedances might be due to the high natural background outside Sum Wan, as the SS levels of station W1 (the closest monitoring station to the Project area) were lower than those of stations W2 (Control Station during the mid-ebb tide) and W3 (Control Station during the mid-flood tide). Similarly, the cause of turbidity exceedances might be also due to the high natural background outside Sum Wan, as the turbidity level of W1 (the closest monitoring station to the Project area) was lower than the stations W2 (Control Station during the mid-ebb tide) on such exceedance day.

However, several abnormal and occasional incidents of muddy effluent discharging from jetty construction works were identified by the full time on site Residential Site Staff. Thus, such exceedances of Action/Limit levels for SS on 15th, 19th and 25th were likely due to the Project. The Contractor was recommended to review the existing construction activities and the effectiveness of present mitigation measures. Additional and sufficient mitigation measures should be implemented such as diverting all construction water to de-silting facilities before discharge, storing the stockpiling on jetty properly to prevent the splashing over and leakage of such materials etc.

The exceedances of Action/Limit levels for DO were unlikely due to the Project owing to the relative high water temperature on such exceedance day in this reporting month. It is understood that the concentration of DO decreases with the increasing water temperature.

For 12-hr Continuous Water Quality Monitoring

According to the ET's investigation, the exceedances of Action/ Limit level for turbidity on 29th and 30th were caused by the background condition outside Sum Wan. As such, no direct evidence demonstrating such exceedances were caused by the Project was identified.

However, it was believed that the exceedances of Action/ Limit Level for turbidity on 19th and 25th were caused by the Project since exceedance cases for SS were also recorded on these two days.

Table I summarizes the number of exceedances recorded in the reporting month.

Table I Summary Table for Non-compliance Recorded in the Reporting Month

Parameter	No. of Events Exceeding		No. of Exceedances due to the Project	Action Taken
	Action Level	Limit Level		
Station W1-W3				
DO (mg/L)	4	10	0	N/A
Turbidity (NTU)	1	1	0	N/A
SS (mg/L)	0	41	12 (15th, 19th and 25th of the reporting month)	ET Leader informed all relevant parties and identified the cause of exceedances. The Contractor was urged to avoid the direct discharge of effluent into the sea during Construction works. The Contractor was recommended to review the existing construction activities and the effectiveness of present mitigation measures. Additional and sufficient mitigation measures should be implemented such as diverting all construction water to de-silting facilities before discharge, storing the stockpiling on jetty properly to prevent the splashing over and leakage of such materials etc.
Station WS				
DO (mg/L)	0 (0 days)	0 (0 days)	0	ET Leader informed all relevant parties and identified the cause of exceedances. The Contractor was urged to avoid the direct discharge of effluent into the sea during Construction works. The Contractor was recommended to review the existing construction activities and the effectiveness of present mitigation measures. Additional and sufficient mitigation measures should be implemented such as diverting all construction water to de-silting facilities before discharge, storing the stockpiling on jetty properly to prevent the splashing over and leakage of such materials etc.
Turbidity (NTU)	53 (2 days)	49 (2 days)	54 (19th and 25th of the reporting month)	

Environmental Licensing and Permitting

License/Permits granted to the Project include the Environmental Permit (EP), the Further Environmental Permit (FEP), the Water Discharge License (WDL) and Construction Noise Permit (CNP) for the Project.

Complaints and Prosecutions

No environmental complaint or prosecution was received in this reporting month.

Status of Waste Management

The Waste Management Plan (WMP) was accepted with conditions by EPD on 30th September 2003 and the Contractor resubmitted WMP (Rev. B) on 9th October 2003.

No C&D materials generated was disposed to public fill in the reporting month. The waste management should follow the procedures in the approved WMP.

The major wastes generated by the activities of the project were general refuses and no generation of such waste in this reporting month.

Key Information in the Reporting Month

Summary of key information in this reporting month is tabulated in Table II.

Table II Summary Table for Key Information in the Reporting Month

Event	Event Details		Action Taken	Status	Remark
	Number	Nature			
Complaint received	0	---	N/A	N/A	---
Changes to the assumptions and key construction / operation activities recorded	0	---	N/A	N/A	---
Status of submissions under EP	0	---	N/A	N/A	---
Notifications of any summons & prosecutions received	0	---	N/A	N/A	---

Future Key Issues:

Major site activities for the coming month include:

- Construction of permanent site formation;
- Boulder stabilization works;
- Construction of permanent jetty;
- Construction of permanent causeway and yard area;
- Construction of microwave antenna station;
- Finishing works; and
- E&M works.

The anticipated environmental impacts will be mainly on dust and noise due to earthworks, and surface runoff during rainy days and the water quality associated with the marine construction activities.

1. INTRODUCTION

Background

1.1 Various industrial, educational and medical facilities in Hong Kong have, for a number of years, used radioactive materials and generated radioactive waste. Most of the existing waste arisings are stored in disused air raid tunnels close to Queen's Road East in Wan Chai. Other arisings are stored temporarily (although in some cases for several years) at the point of use in educational institutions or hospitals.

1.2 The condition of the Queen's Road East tunnels has been found to be unsatisfactory and various parts of the tunnel system suffer from leakage and ingress of water. The condition of some of the waste packages has subsequently deteriorated and they are generally unsatisfactory for the safe long-term containment and storage of radioactive materials.

1.3 The existing facilities are unsatisfactory and in addition are located closed to a high density of population, which make access to, and management of, the waste more problematic. As well as existing waste, there is also a continuing need to use radioactive materials in Hong Kong and a continuing predictable amount of future waste arisings. Therefore, the Government has decided that storage of low-level radioactive waste in Hong Kong requires a dedicated, purpose-designed facility. After a thorough consultancy study in the "Environmental Impact and Safety Assessment Report, June 1995 (Stage 1 EISA)" and evaluation, the preferred site located on the island of Siu A Chau in the Soko Islands, adjacent to the small bay of Sum Wan on the eastern side of the island was selected.

1.4 Environmental Protection Department (EPD) commissioned the construction and operation of the Low-Level Radioactive Waste Storage Facility (LRWF) at Siu A Chau (hereinafter referred as the "Project") under Contract No. EP/SP/40/02 to ATAL-Belgoprocess Joint Venture Limited (hereinafter called "the Contractor") in July 2003. The Project site layout is shown in Figure 1.1 and the location of the environmental sensitive receiver is depicted in Figure 1.2.

1.5 An Environmental Permit (EP) (No. EP-131/2002) for the Project was issued on 11 April 2002 to the Special Waste Facilities Group, Environmental Protection Department as Permit Holder. Under the Tender Specification Clause 1.6.3.1, the Contractor is required to obtain a Further Environmental Permit (FEP) before he assumes the responsibility for relevant construction and operation. The FEP (No. FEP-01/131/2003) was successfully obtained from EPD on 30th July 2003 by the Contractor.

1.6 Cinotech Consultants Limited (hereinafter called the "ET") was commissioned by the contractor to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. Mr. Jesse Yuen of Cinotech Consultants Limited was appointed as the ET Leader under Condition 2.1 of the FEP. Mr. Sam Tsoi of Ove Arup & Partners Hong Kong Limited was appointed as the IEC under Condition 2.2 of the EP and the FEP.

1.7 This is the fifteenth monthly EM&A report summarizing the EM&A works for the Project in November 2004.

Project Organizations

1.8 Different parties with different levels of involvement in the project organization include:

- Employer's Representative (ER) – Environmental Protection Department
- Contractor – ATAL-Belgoprocess Joint Venture Limited
- Environmental Team (ET) – Cinotech Consultants Limited
- Independent Environmental Checker (IEC) – Ove Arup & Partners Hong Kong Limited

1.9 The responsibilities of respective parties are detailed in Sections 1.16 to 1.19 of the EM&A Manual of the Project.

1.10 The key contacts of the Project are shown in Table 1-1.

Table 1-1 Key Project Contacts

Party	Role	Name	Position	Phone No.	Fax No.
EPD	Employer's Representative	Mr. Lui Ping Hon	PEPO	2872 1680	2591 0636
		Mr. Davie Kan	SEPO	2872 1682	2591 0636
		Mr. Richard Fok	EPO	2872 1686	2591 0636
ATAL-Belgoprocess Joint Venture	Contractor	Mr. Barry Lee	Project Manager	2565 3150	2811 3321
		Mr. Christopher Lee	Construction Manager	2565 3477	2811 3321
Cinotech	Environmental Team	Mr. Jesse Yuen	ET Leader	2151 2083	3107 1388
		Mr. Henry Leung	Audit Team Leader	2151 2083	3107 1388
Ove Arup	Independent Environmental Checker	Mr. Sam Tsoi	IEC	2268 3211	2268 3950

Construction Programme

1.11 The site activities undertaken in the reporting period were:

- Construction of permanent site formation;
- Boulder stabilization works;
- Construction of permanent jetty;
- Construction of permanent causeway and yard area;
- Construction of microwave antenna station;
- Finishing works; and
- E&M works.

1.12 The updated master work programme for civil works is attached in Appendix A.

Summary of EM&A Requirements

1.13 The EM&A programme requires baseline monitoring for water quality and ecology; and construction phase monitoring for water quality and environmental site audit. The EM&A requirements for each parameter are described in following sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event Action Plans;
- Environmental mitigation measures, as recommended in the Stage 1 EISA Report for the Project;
- Environmental requirements in contract documents.

1.14 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 3 of this report.

1.15 This report present the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures for the required monitoring parameters [namely dissolved oxygen (DO), turbidity, temperature and suspended solids (SS)] and site audit works for the Project in this reporting month.

2. WATER QUALITY

Monitoring Requirements

2.1 Water quality monitoring was conducted in accordance with the EM&A Manual. Appendix B shows the established Action and Limit Levels for the environmental monitoring parameters.

Monitoring Locations

2.2 In accordance with the EM&A Manual, four water quality monitoring locations (Stations W1 to W3 and WS) were specified for baseline water quality monitoring. The water quality monitoring locations are shown in Figure 2.1 and their coordinates are provided in Table 2-1.

Table 2-1 Locations of Water Quality Monitoring Stations

Station	Co-ordinates	
	Northing	Easting
W1	804471.4	809611.2
W2	804330.9	809558.6
W3	804393.9	809725.0
WS	804555.2	809535.9

Monitoring Parameters, Frequency and Duration

2.3 Table 2-2 summarizes the monitoring parameters, monitoring period and frequencies of impact water quality monitoring. The water quality monitoring schedule is shown in Appendix C.

Table 2-2 Frequency and Parameter of Water Quality Monitoring

Monitoring Stations	Parameters, unit	Depth	Frequency[1]
W1, W2, W3	• DO Saturation, % • DO, mg/L • Temperature, °C • Turbidity, NTU • SS, mg/L	Three depths (1m below surface, mid-depth and 1m above seabed) at mid-flood and mid-ebb tides	3 times per week during construction of unloading facility
12-Hour Monitoring Station: WS	• Conductivity • Water depth, m • DO Saturation, % • DO, mg/L • Temperature, ºC • Turbidity, NTU	Mid-depth, with data logging at every 5 minutes for 12 hours between 0700 and 1900	

Note: [1] 2 consecutive readings of in-situ parameters will be taken in order to agree accuracy within 25%

Monitoring Equipment

2.4 Table 2-3 summarizes the details of the monitoring equipment to be deployed, the model number, manufacturer and the calibration date.

2.5 All the monitoring equipment complied with the specifications stipulated in the EM&A Manual. Copies of the calibration certificates are attached in Appendix D.

Table 2-3 Water Quality Monitoring Equipment

Parameters/ Functions	The Equipment to be Deployed	Model and Make	Calibration Date
Positioning	Digital Global Positioning System (GPS)	"Standard Horizon" Handheld GPS Magnum NAV-40	N/A
Water Depth	Echo Sounder	"Humminbird" In-Dash Digital Depthsounder HDR 600	N/A
Water Sampling	Kahlsico Water Sampler	135 WB150	N/A
Routine Water Quality Monitoring			
Dissolved Oxygen, pH and Temperature	YSI Model 6820 CE-C-M-Y	YSI 6820	23 Sep 04 18 Nov 04
Turbidity	YSI Model 6820 CE-C-M-Y	YSI 6820	23 Sep 04 18 Nov 04
12-hour Continuous Water Quality Monitoring			
Dissolved Oxygen and Temperature	YSI Model 6920 M	YSI 6920	23 Sep 04 18 Nov 04
Turbidity	YSI Model 6920 M	YSI 6920	23 Sep 04 18 Nov 04

Monitoring Methodology and QA/QC Procedures

Routine Water Quality Monitoring

Instrumentation

2.6 A multi-parameter meter (Model YSI 6820 CE-C-M-Y) was used to measure dissolved oxygen (DO), DO saturation, temperature and turbidity.

Operating/Analytical Procedures

2.7 All in-situ measurements were taken at 3 water depths, namely 1m below water surface, mid-depth, and 1m from seabed, except where the water depth was less than 6m, the mid-depth measurement was omitted. If the water depth was less than 3m, only the mid-depth position was monitored.

2.8 At each measurement, two consecutive measurements of DO, DO saturation, turbidity and temperature were taken. The probes were retrieved out of the water after the first measurement and then re-deployed for the second measurement. Where the difference in the value between the first and second readings of each set was more

than 25% of the value of the first reading, the reading was discarded and further readings were taken.

Laboratory Analytical Methods

2.9 For SS measurement, grab samples of mid-depth water were collected. Water samples of about 500 ml were collected and stored in polyethylene bottles. The sample bottles were packed into an ice-box and delivered to a HOKLAS Laboratory, WELLAB Ltd., for the analysis of suspended solids contents within 24 hours.

2.10 The following table shows the standard test methods of the proposed determinants for laboratory analysis.

Table 2-4 Methods for Laboratory Analysis for Water Samples

Parameters (Unit)	Analytical Method
SS (mg/L)	APHA 2540 D

Notes: APHA = American Public Health Association: Standard Methods for the Examination of Water and Wastewater Ed. 19.

Maintenance and Calibration

2.11 Before each round of monitoring, a zero check in distilled water was performed with the turbidity probe of YSI 6820. The probe was then calibrated with a solution of known NTU.

2.12 Quality Control Reports for SS analysis by the HOKLAS Accredited Laboratory, WELLAB Limited, are attached in Appendix E.

12-Hour Continuous Water Quality Monitoring

2.13 The continuous water quality monitoring station was installed at Station WS. Water quality parameters of DO, DO saturation, turbidity and temperature were measured at intervals of 5 minutes for 12 hours (0700 to 1900).

Results and Observations

2.14 Water quality monitoring was conducted on 1st, 2nd, 4th, 8th, 10th, 12th, 15th, 16th, 19th, 22nd, 23rd, 25th, 29th and 30th in this reporting month. The weather conditions during the monitoring sessions were sunny, fine and cloudy.

Routine Water Quality Monitoring

2.15 A total of forty-one events showing exceedances of Limit Levels for suspended solids (SS) were recorded at the monitoring stations W1, W2 and W3 on 8th, 10th, 12th, 15th, 16th, 19th, 25th, 29th and 30th in the reporting month.

2.16 A total of two events showing exceedances of Action/Limit Level for turbidity. One exceedance for Action Level recorded at W1 and one exceedance for Limit Level recorded at W2 on 30th in the reporting month.

2.17 A total of fourteenth events showing exceedances of Action/Limit Levels for dissolved oxygen (DO) at the monitoring stations W1, W2 and W3 were recorded on 10th and 15th in the reporting month.

12-hr Continuous Water Quality Monitoring

2.18 For the continuous water quality monitoring at station WS, events showing exceedances of Action/Limit levels for turbidity levels at station WS were recorded on 15th and 19th in the reporting month.

2.19 Events showing exceedances of Action/Limit levels for DO levels at station WS were recorded on 4th, 5th, 7th, 11th, 15th, 18th, 19th, 21st, 25th, 27th and 29th in the reporting month.

Comment from ET

For Routine Water Quality Monitoring

2.20 According to the ET's investigation, no direct evidence demonstrating that the exceedances of Action/Limit levels for SS on 4th, 5th, 7th, 11th, 15th, 18th, 19th, 21st, 25th, 27th and 29th and for turbidity on 15th, 18th, 19th, 25th, 27th and 29th were caused by the Project was identified. The cause of exceedances might be due to the high natural background outside Sum Wan, as the SS levels of station W1 (the closest monitoring station to the Project area) were lower than those of stations W2 (Control Station during the mid-ebb tide) and W3 (Control Station during the mid-flood tide).

2.21 The exceedances of Action/Limit levels for DO were unlikely due to the Project owing to the high water temperature during the reporting month. It is understood that the concentration of DO decreases with the increasing water temperature.

For 12-hr Continuous Water Quality Monitoring

2.22 For the continuous water quality monitoring at station WS, events showing exceedances of Action/Limit levels for turbidity levels at station WS were recorded on 19th, 25th, 29th and 30th in the reporting month.

2.23 No Action/ Limit Level exceedance for DO was recorded in the reporting month.

2.24 The monitoring data and graphical presentations of the monitoring results are shown in Appendix F, whereas the summary of exceedances is attached in Appendix G.

3. ENVIRONMENTAL AUDIT

Site Audits

3.1 Site audits were carried out on a monthly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site.

3.2 A monthly site audit for this reporting month was conducted on 29th November 2004. The summary of site audit is attached in Appendix H.

Status of Environmental Licensing and Permitting

3.3 All permits/licenses obtained are summarized in Table 3-1.

Table 3-1 Summary of Environmental Licensing and Permit Status

Permit No.	Valid Period		Section	Status
	From	To		
Environmental Permit				
EP-131/2002	11/04/02	N/A	Design, construct and operate a waste disposal facility for industrial or special waste. The site is of 0.6 ha constructed with a single storey building of approximately 44m x 24 m in size. Scope of the construction includes: (i) civil engineering works, (ii) building works including building services, and (iii) operation of the facility	The EP has not been surrendered.
FEP-01/131/2003 (a copy was attached in the first monthly report)	30/07/03	N/A		Valid
Construction Noise Permit				
GW-UW0313-04 (a copy is attached in the monthly of July 2004)	15/07/04	31/12/04	The use of powered mechanical equipment for carrying out construction work at Sum Wan, Siu A Chau on general holiday (including Sunday) between 0700 and 0700 hours on next day and on any day not being a general holiday between 1900 and 0700 hours on next day.	Valid
Water Discharge License				
EP760/934/008541I (a copy was attached in the monthly of December 2003)	22/12/03	31/12/08	Discharge of Industrial Trade Effluent arising from the construction activities (settlement facility) at the construction site for Low-Level Radioactive Waste Storage Facility at Sun Wan, Siu A Chau, Hong Kong.	Valid

Review of Environmental Monitoring Procedures

3.4 The water quality monitoring works conducted by the monitoring team were inspected regularly. The following observations have been recorded for the water quality monitoring works:

- The monitoring team recorded all observations around the monitoring stations, which might affect the monitoring result.
- The monitoring team recorded the weather and sea conditions on the monitoring day.

Status of Waste Management

3.5 The Waste Management Plan (WMP) was accepted with conditions by EPD on 30th September 2003 and the Contractor resubmitted WMP (Rev. B) on 9th October 2003.

3.6 No C&D materials were disposed to public fill in the reporting month. The waste management should follow the procedures in the approved WMP.

3.7 The major wastes generated by the activities of the project were general refuses and no such waste was generated in this reporting month.

3.8 The monthly C&D Report in the reporting month is shown in Appendix I.

Implementation Status of Environmental Mitigation Measures

3.9 During site inspection in the reporting period, no non-conformance was identified. The observations and recommendations are summarized in Table 3-2.

Table 3-2 Observations and Recommendations of Site Audit

Date	Parameters	Observations	Remedial Actions
29 November	***Water Quality***	• Drainage system was blocked by construction materials and waste • Silt water pond was found on Temporary Jetty.	• The Contractor was reminded to maintain a good working condition of on site drainage system. • The Contractor was reminded to remove muddy water on site and avoid such muddy water discharge from site area.
	Air Quality	• Fugitive dust was generated from haul road • Open stockpile was found on site. • Top and three sides enclosure was not provided during the operation of concrete mixing machine.	• The Contractor was reminded to provide sufficient dust control measures on site such as increase the water spraying frequency. • The Contractor was reminded to cover all open stockpile properly • The Contractor was reminded to provide a top and three sides enclosure for such dusty operation work.
	Noise	No environmental deficiencies were identified during the environmental site inspection.	N/A
	Waste/ Chemical Management	Large amount of construction waste was accumulated on site.	The Contractor was reminded to dispose the waste more frequently.
	Permit/ Licenses	No environmental deficiencies were identified during the environmental site inspection	N/A
	Others	The environmental deficiencies items identified in the previous site audit were rectified by the Contractor.	N/A

Implementation Status of Event Action Plan

3.10 The Event Action Plan for water quality is presented in Appendix J.

Routine Water Quality Monitoring

3.11 A total of forty-one events showing exceedances of Limit Levels for suspended solids (SS) were recorded at the monitoring stations W1, W2 and W3 on 1st, 2nd, 4th, 8th, 10th, 12th, 15th, 16th, 19th, 22nd, 23rd, 25th, 29th and 30th in the reporting month.

3.12 A total of two events showing exceedances of Action/Limit Level for turbidity. One exceedance for Action Level recorded at W1 and one exceedance for Limit Level recorded at W2 on 30th in the reporting month.

3.13 A total of fourteenth events showing exceedances of Action/Limit Levels for dissolved oxygen (DO) at the monitoring stations W1, W2 and W3 were recorded on

10th and 15th in the reporting month.

12-hr Continuous Water Quality Monitoring

3.14 For the continuous water quality monitoring at station WS, events showing exceedances of Action/Limit levels for turbidity levels at station WS were recorded on 19th, 25th, 29th and 30th in the reporting month.

3.15 No Action/ Limit Level exceedance for DO was recorded in the reporting month.

Comment from ET

For Routine Water Quality Monitoring

3.16 According to the ET's investigation, no direct evidence demonstrating that the exceedances of Action/Limit levels for SS on 1st, 2nd, 4th, 8th, 12th, 16th, 22nd, 23rd, 29th and 30th and for turbidity on 30th were identified. The cause of SS exceedances might be due to the high natural background outside Sum Wan, as the SS levels of station W1 (the closest monitoring station to the Project area) were lower than those of stations W2 (Control Station during the mid-ebb tide) and W3 (Control Station during the mid-flood tide). Similarly, the cause of turbidity exceedances might be also due to the high natural background outside Sum Wan, as the turbidity level of W1 (the closest monitoring station to the Project area) was lower than the stations W2 (Control Station during the mid-ebb tide) on such exceedance day.

3.17 However, according to the ET's field observations on monitoring day, such exceedances of Action/Limit levels for SS on 15th, 19th and 25th were likely due to the Project. The Contractor was recommended to review the existing construction activities and the effectiveness of present mitigation measures. Additional and sufficient mitigation measures should be implemented such as diverting all construction water to de-silting facilities before discharge, storing the stockpiling on jetty properly to prevent the splashing over and leakage of such materials etc.

3.18 The exceedances of Action/Limit levels for DO were unlikely due to the Project owing to the relative high water temperature on such exceedance day in this reporting month. It is understood that the concentration of DO decreases with the increasing water temperature.

For 12-hr Continuous Water Quality Monitoring

3.19 According to the ET's investigation, the exceedances of Action/ Limit level for turbidity on 29th and 30th were caused by the background condition outside Sum Wan. As such, no direct evidence demonstrating such exceedances were caused by the Project was identified.

3.20 However, it was believed that the exceedances of Action/ Limit Level for turbidity on 19th and 25th were caused by the Project since exceedance cases for SS were also recorded on these two days.

Summary of Complaints and Prosecutions

3.21 No environmental complaint or prosecution was received in the reported month.

3.22 There was no complaint or prosecution received since the commencement of the Project. The template of the Complaint Log is shown in Appendix K.

4. FUTURE KEY ISSUES

Key Issues for the Coming Month

4.1 Key issues to be considered in the coming month include:

- Generation of dust from exposed open stockpiles;
- Waste and chemical management during footing and structure construction;
- Noise from operation equipment and machinery on-site; and
- Surface runoff generated in rainy days

Monitoring Schedule for the Next Month

4.2 Major site activities for the coming month include:

- Construction of permanent site formation;
- Boulder stabilization works;
- Construction of permanent jetty;
- Construction of permanent causeway and yard area;
- Construction of microwave antenna station;
- Finishing works; and
- E&M works.

5. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

5.1 Environmental monitoring works were performed in this reporting month and all monitoring results were checked and reviewed.

5.2 For routine water quality monitoring, a total of forty-one events showing exceedances of Limit Levels for suspended solids (SS) were recorded at the monitoring stations W1, W2 and W3 on 1st, 2nd, 4th, 8th, 10th, 12th, 15th, 16th, 19th, 22nd, 23rd, 25th, 29th and 30th in the reporting month. Furthermore, a total of two events showing exceedances of Action/Limit Level for turbidity. One exceedance for Action Level recorded at W1 and one exceedance for Limit Level recorded at W2 on 30th in the reporting month. In addition, a total of fourteenth events showing exceedances of Action/Limit Levels for dissolved oxygen (DO) at the monitoring stations W1, W2 and W3 were recorded on 10th and 15th in the reporting month.

5.3 According to the ET's investigation, no direct evidence demonstrating that the exceedances of Action/Limit levels for SS on 1st, 2nd, 4th, 8th, 12th, 16th, 22nd, 23rd, 29th and 30th and for turbidity on 30th were identified. The cause of SS exceedances might be due to the high natural background outside Sum Wan, as the SS levels of station W1 (the closest monitoring station to the Project area) were lower than those of stations W2 (Control Station during the mid-ebb tide) and W3 (Control Station during the mid-flood tide). Similarly, the cause of turbidity exceedances might be also due to the high natural background outside Sum Wan, as the turbidity level of W1 (the closest monitoring station to the Project area) was lower than the stations W2 (Control Station during the mid-ebb tide) on such exceedance day.

5.4 However, according to the information provided by both EPD and Resident Site Staff, such exceedances of Action/Limit levels for SS on 15th, 19th and 25th were likely due to the Project. The Contractor was recommended to review the existing construction activities and the effectiveness of present mitigation measures. Additional and sufficient mitigation measures should be implemented such as diverting all construction water to de-silting facilities before discharge, storing the stockpiling on jetty properly to prevent the splashing over and leakage of such materials etc.

5.5 The exceedances of Action/Limit levels for DO were unlikely due to the Project owing to the relative high water temperature on such exceedance day in this reporting month. It is understood that the concentration of DO decreases with the increasing water temperature.

5.6 For the 12-hr continuous water quality monitoring at station WS, events showing exceedances of Action/Limit levels for turbidity levels at station WS were recorded on 19th, 25th, 29th and 30th in the reporting month. However, no Action/ Limit Level exceedance for DO was recorded in the reporting month.

5.7 According to the ET's investigation, the exceedances of Action/ Limit level for turbidity on 29th and 30th were caused by the background condition outside Sum Wan. As such, no direct evidence demonstrating such exceedances were caused by the

Project was identified. However, it was believed that the exceedances of Action/ Limit Level for turbidity on 19th and 25th were caused by the Project since exceedance cases for SS were also recorded on these two days.

5.8 Monthly site audit was performed in the reporting month on 29th November 2004. No non-conformance was identified during the site audit.

5.9 No environmental complaint or prosecution was received during the reporting month.

5.10 According to the environmental audit performed in the reporting month, the following recommendations were made:

Dust Impact

- To prohibit open burning on site.
- To regularly maintain the machinery and vehicles on site
- To implement dust suppression measures on dust-generating activities (e.g. site clearance)

Water Impact

- To identify any wastewater discharge from site.
- To regularly maintain the sediment control measures.
- To implement proper mitigation measures to avoid surface runoff into the sea.

Waste/Chemical Management

- To check for any accumulation of waste materials or rubbish on site.
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the site.
- To avoid improper handling or storage of oil drum on site.

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