

ASB Biodiesel (Hong Kong) Limited

Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate

Monthly EM&A Report

(version 1.0)

March 2010

Certified By



(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

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EXECUTIVE SUMMARY

Introduction

1. This is the 10th monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate". This report documents the findings of EM&A Works conducted in March 2010.
2. The major site activities undertaken in the reporting month included:
 - Earthwork and foundation works for the Tank Farm Zone 2

Environmental Monitoring and Audit Works

3. Environmental monitoring and audit works for the Project were performed regularly as stipulated in the EM&A Manual and the results were checked and reviewed. The implementation of the environmental mitigation measures and environmental complaint handling procedures were also checked.

Environmental Licenses and Permits

4. Licenses/Permits granted to the Project include the Environmental Permit (EP) for the Project, An Environmental Permit No. EP-319/2009 and EP-319/2009/A was issued on 11 March 2009 and 7 April 2009 respectively. The contractor has applied for the Registration of Chemical Waste Producer (WPN-5113-839-C1186-15), Construction Noise Permit (GW-RE0561-09) and Wastewater Discharge License (WT00004508-2009).

Key Information in the Reporting Month

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

Table I 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	1	Monthly EM&A Report for February 2010	Submitted to EPD on 9 March 2010 (EP condition 4.2)	Verified by IEC	---
Notifications of any summons & prosecutions	0	---	N/A	N/A	---

Future Key Issues

6. Major site activities for the coming month will include:
 - Earthwork and Foundation works for the Tank Farm Zone 2;
 - Steel equipment installation; and
 - Steel structure erection.

7. The future environmental concerns are air quality, waste management and surface runoff from construction works.

1 INTRODUCTION

Background

- 1.1 Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate is a Designated Project (hereafter referred to as “the Project”) under the Environmental Impact Assessment Ordinance (Cap. 449). A study of environmental impact assessment (EIA) was undertaken to consider the key issues of air quality, noise, water quality, ecological and identify possible mitigation measures associated with the works. An EIA Report was approved by the Environmental Protection Department (EPD) on 26 February 2009.
- 1.2 The project is to construct and operate a 100,000 tonnes per annum biodiesel plant at Tseung Kwan O Industrial Estate. The plant will use a multi-feedstock which consists of waste cooking oil (WCO), oil and grease recovered from grease trap waste (GTW), Palm Fatty Acid Distillate (PFAD) and animal fats. The proposed biodiesel plant not only offers a convenient recycling outlet for GTW and WCO but also converts the oil and grease recovered from these wastes into useful products. The Project also offers a cleaner alternative to diesel fuel to the Hong Kong market. The main processes include the followings:-
- Construction of feedstock reception and storage facilities, and offices;
 - Construction of a grease trap waste pre-treatment facility (with a designated treatment capacity of about 200,000 tonnes per annum);
 - Construction of a wastewater treatment plant (with a designed treatment capacity of about 170,000 m³ per annum);
 - Installation of biodiesel production and glycerine purification system;
 - Construction of product storage and ancillary facilities;
 - Pretreatment of grease trap waste;
 - Treatment of wastewater generated from feedstock pre-treatment and glycerine dewatering process, and filtrates from dewatering process of sludge treatment;
 - Transesterification of feedstock with alcohol-catalyst; and
 - Purification of biodiesel.
- 1.3 The general layout of the Project is shown in **Figure 1.1**.
- 1.4 Layout plan of tank farm **2A, 2B to 2E** is revised and a report is made by Environmental Resources Management (ERM) regarding such change. The report concluded that no deviation is found from the approved EIA report.
- 1.5 An Environmental Permit (EP) No. EP-319/2009 and EP-319/2009/A was issued on 11 March 2009 and 7 April 2009 respectively for Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate to ASB Biodiesel (Hong Kong) Limited as the Permit Holder.
- 1.6 Cinotech Consultants Limited was commissioned by ASB Biodiesel (Hong Kong) Limited to undertake the Environmental Monitoring and Audit (EM&A) works for the Project. China Harbour Engineering Company Limited is the Managing Contractor of

the Project. This is the 10th Monthly EM&A report summarizing the EM&A works for the Project in March 2010.

Project Organizations

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

- Project Proponent – ASB Biodiesel (Hong Kong) Limited
- Contractor – China Harbour Engineering Company Limited (CHEC)
- Environmental Team (ET) – Cinotech Consultants Limited
- Independent Environmental Checker (IEC) – Mannings (Asia) Consultants Ltd.

1.8 The responsibilities of respective parties are detailed in Section 1.10 of the Final EM&A Manual of the Project.

1.9 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.
ASB	Permit Holder	Mr. Eddie Chung	Project Manager	9189 8118	37411661
Cinotech	Environmental Team	Dr. HF Chan	ET Leader	2151 2088	3107 1388
		Ms. Ivy Tam	Project Coordinator	2151 2090	
		Mr. Gary Lau	Audit Team Leader	2151 2098	
Mannings	Independent Environmental Checker	Mr. Mark Cheung	Independent Environmental Checker	3168 2028	3168 2022
		Mr. Gavin Kwok	Assistant to Independent Environmental Checker	3168 2028	
CHEC	Contractor	Mr. Stephen Tse	Project Manager	8106 1848	2623 9226
		Mr. Fred Ho	Environmental Officer	9279 6226	

Construction Programme

1.10 The site activities undertaken in the reporting month was:

- Earthwork and foundation works for the Tank Farm at zone 2.

Summary of EM&A Requirements

1.11 The EM&A requirements are described in the following sections, including:

- Environmental mitigation measures, as recommended in the project EIA study final report; and
- Environmental requirements in contract documents.

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

2 ENVIRONMENTAL AUDIT

Site Audits

- 2.1 Site audit was carried out by ET on monthly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix A**.
- 2.2 Site audit was conducted on 24th March 2010 by ET in the reporting month. No non-compliance was observed during the site audits.

Status of Environmental Licensing and Permitting

- 2.3 All permits/licenses obtained for the Project are summarized in **Table 2.1**.

Status of Waste Management

- 2.4 7 x 1000 m³ of Construction and Demolition (C&D) Waste and no Chemical Waste are generated in the reporting month. The quantities of waste generated in this reporting month are summarized in **Appendix C**.

Implementation Status of Environmental Mitigation Measures

- 2.5 According to the EIA Study Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the EMIS is provided in **Appendix B**.

Table 2.1 Summary of Environmental Licensing and Permit Status

Permit / License No.	Valid Period		Details	Status
	From	To		
Environmental Permit (EP)				
EP-319/2009/A	07/04/2009	N/A	Construction and operation of (i) a biochemical plant with a storage capacity of more than 500 tonnes and in which substances are processed and produced; (ii) a storage, transfer and trans-shipment of oil facility with a storage capacity of not less than 1,000 tonnes; and (iii) a dangerous goods godown with a storage capacity exceeding 500 tonnes	Valid
Registration of Chemical Waste Producer				
WPN-5113-839-C1186-15	12/06/2009	-	Spent Lubrication oil.	Valid
Construction Noise Permit (CNP)				
GW-RE0561-09	10/12/2009	26/05/2010	Use of Powered Mechanical Equipment during 0000-2400 hours on general holidays (including Sundays), 0000-0700 hours on any day not being a general holiday.	Valid
Wastewater Discharge License				
WT00004508-2009	07/09/2009	-	-	Valid

- 2.6 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in Table 2.2.

Table 2.2 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Air Quality	24-03-10	<u>Reminder</u> Provide dust suppression on access road more frequently.	Rectification photo was received from The Contractor on 31/03/2010.

Summary of Complaint and Prosecution

- 2.7 No environmental related complaint, prosecution or notification of summons was received in the reporting month.
- 2.8 There was no environmental complaint, prosecution or notification of summons received since the Project commencement. The Complaint Log is attached in **Appendix D**.

3 FUTURE KEY ISSUES

Key Issues for the Coming Month

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

- Noise from operation of the equipment and machinery on-site;
- Effluent discharge generated from surface runoff;
- Dust generated from excavation works and stockpile of dusty materials;
- Maintenance of de-silting facilities and drainage system, such as U-channels;
- Storage of chemicals/fuel and chemical waste/waste oil on site;
- Accumulation of stagnant water in the site areas; and
- Accumulation of C&D waste and general waste on site.

Construction Program for the Next Month

3.2 A tentative construction programme is provided in **Appendix E**. The major construction activities in the coming month will include:

- Earthwork and Foundation works for the Tank Farm Zone 2;
- Steel equipment installation; and
- Steel structure erection.

4 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 4.1 Environmental audit works were conducted in the reporting month. Site inspections were conducted on a monthly basis. The results of were reviewed and checked.
- 4.2 There was no environmental complaint, prosecution or notification of summons received.

Recommendations

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

Water Impact

- To identify any wastewater discharges from site.
- To ensure properly maintenance for de-silting facilities.
- To clear the silt and sediment in the sedimentation tanks.
- To review the capacity of de-silting facilities for discharge.
- To divert all the water generated from construction site to de-silting facilities with enough handling capacity before discharge.
- To avoid accumulation of stagnant and ponding water on site.

Dust Impact

- To remove fugitive dusty material on the haul road periodically.
- Excavated dusty materials or stockpile of dusty materials should be covered by impervious sheeting, or sprayed with water so as to maintain entire surface wet.

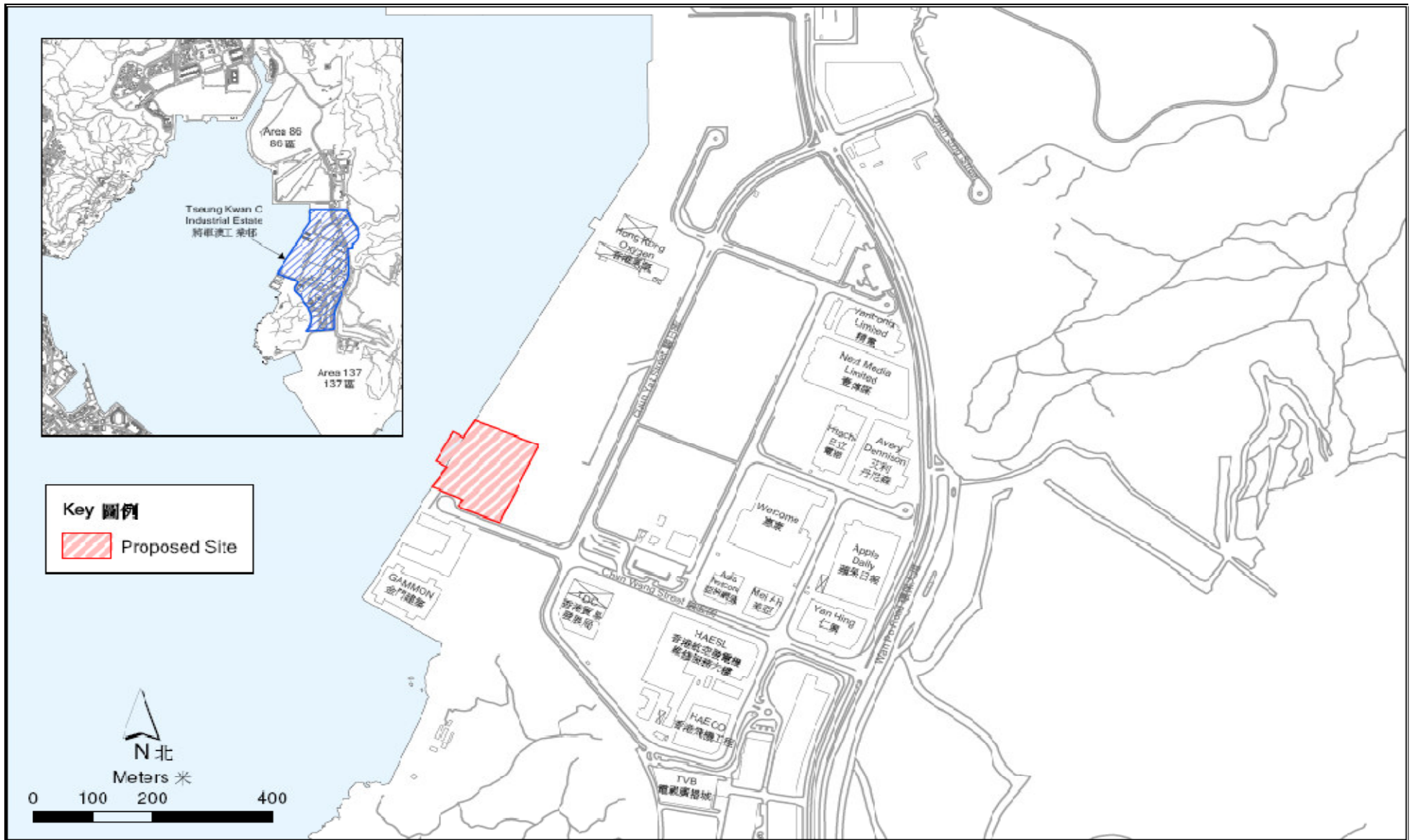
Noise Impact


- To space out noisy equipment and position as far away as possible from sensitive receivers.
- To inspect the noise sources inside the site.

Waste / Chemical Management

- To provide proper rubbish bins / skips for waste collection.
- To provide proper storage area for oil container on site.
- To avoid and 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 equipment.

FIGURES



Key 圖例
 Proposed Site

Title	Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate		Scale	N.T.S	Project No.	MA9021	CINOTECH
	Site Layout Plan		Date	Jun-09	Figure	1.1	

**APPENDIX A
SITE AUDIT SUMMARY**

Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate

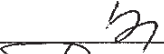

Monthly Site Inspection Record Summary

Inspection Information

Checklist Reference Number	000324
Date	24 March 2010 (Wednesday)
Time	15:00 – 16:00

Ref. No.	Non-Compliance	Related Item No.
-	None	-

Ref. No.	Remarks/Observations	Related Item No.
000324-R01	<p>A. Water Quality</p> <ul style="list-style-type: none"> No environmental deficiency was identified during site inspection. <p>B. Air Quality <u>Reminder</u></p> <ul style="list-style-type: none"> Provide dust suppression on access road more frequently. <p>C. Noise</p> <ul style="list-style-type: none"> No environmental deficiency was identified during site inspection. <p>D. Waste / Chemical Management</p> <ul style="list-style-type: none"> No environmental deficiency was identified during site inspection <p>E. Permit / Licenses</p> <ul style="list-style-type: none"> No environmental deficiency was identified during site inspection. <p>F. Reminders</p> <ul style="list-style-type: none"> No environmental deficiency was identified during site inspection. <p>G. Others</p> <ul style="list-style-type: none"> Follow-up on previous audit section (Ref. No.:000223), all environmental deficiencies were improved/rectified by contractor. 	C3&5

	Name	Signature	Date
Recorded by	Cara Heung		29 March 2010
Checked by	Dr. HF Chan		29 March 2010

**APPENDIX B
UPDATED ENVIRONMENTAL
MITIGATION IMPLEMENTATION
SCHEDULE**

Appendix B - Summary of Environmental Mitigation Implementation Schedule (Construction Phase)

Types of Impacts	Mitigation Measures	Status		
<p>Construction Dust</p>	<ul style="list-style-type: none"> • Dust control measures such as water spraying on roads and dusty areas, covering of lorries by impervious sheets and controlling of the falling height of fill materials will be implemented; • Effective dust screens, sheeting or netting will be provided to enclose the scaffolding from the ground level of the facility during the building construction; • All debris and materials will be covered or stored in a sheltered debris collection area; • Hoarding from ground level will be provided along the entire length of the site boundary except for a site entrance or exit; • Every stockpile of dusty materials will be covered entirely by impermeable sheeting or placed in an area sheltered on the top and the 3 sides; • Regular maintenance and checking of the diesel powered mechanical equipment will be adopted to avoid any black smoke emissions and to minimize gaseous emissions. • Monthly site audits will be conducted to ensure the implementation of suitable dust control measures and good site practices. 	<p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>		
		<p>Construction Noise</p>	<ul style="list-style-type: none"> • Only well-maintained plant will be operated on-site and plant will be serviced regularly during the construction program; • Silencers or mufflers on construction equipment will be utilized and will be properly maintained during the construction program; • Mobile plant, if any, will be sited as far from NSRs as possible; • Machines and plant (such as trucks) that may be in intermittent use will be shut down between work periods or will be throttled down to a minimum; • Plant known to emit noise strongly in one direction will, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and • Material stockpiles and other structures will be effectively utilised, wherever practicable, in screening noise from onsite construction activities. 	<p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

Types of Impacts	Mitigation Measures	Status
Water Quality	<p><u>Piling Activities</u></p> <ul style="list-style-type: none"> Silt curtain will be installed around the marine piling area to contain any suspended mud and sediments generated during the piling works. Silt removal facilities such as silt traps or sedimentation facilities will be provided to remove silt particles from groundwater (if pumping is required) to meet the requirements of the TM standard under the WPCO. The design of silt removal facilities will be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures will be inspected monthly and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. 	N/A
	<p><u>Construction Site Run-off and Drainage</u></p> <ul style="list-style-type: none"> Silt removal facilities such as silt traps or sedimentation facilities will be provided to remove silt particles from runoff to meet the requirements of the TM standard under the WPCO. The design of silt removal facilities will be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures will be inspected monthly and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. Careful programming of the works to minimise surface excavations for the construction works during the wet season. If excavation of soil cannot be avoided during the wet season, exposed slope surfaces will be covered by a tarpaulin or other means. Other measures that need to be implemented before, during, and after rainstorms are summarised in ProPECC PN 1/94. Exposed soil surfaces will be protected by paving or fill material as soon as possible to reduce the potential of soil erosion. Open stockpiles of construction materials or construction wastes on-site of more than 50m³ will be covered with tarpaulin or similar fabric during rainstorms. These materials will not be placed near the seawall area. 	^ ^ ^ ^
	<p><u>General Construction Activities</u></p> <ul style="list-style-type: none"> Debris and refuse generated on-site will be collected, handled and disposed of properly to avoid entering the nearby water sensitive receivers (WSRs). Stockpiles of cement and other construction materials will be kept covered when not being used. Oils and fuels will only be used and stored in designated areas which have pollution prevention facilities. All fuel tanks and storage areas will 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. The bund will be drained of rainwater after a rain event. 	^ ^

Types of Impacts	Mitigation Measures	Status
	<p data-bbox="369 277 846 305"><u>Sewage generated from On-site Workforce</u></p> <ul data-bbox="415 342 1856 469" style="list-style-type: none"> <li data-bbox="415 342 1856 402">• Temporary sanitary facilities, such as portable chemical toilets, will be provided on-site. A specialised contractor will be responsible for regular collection and appropriate disposal of the sewage and maintenance of these facilities. <li data-bbox="415 407 1856 469">• Monthly site inspections will be carried out during construction to ensure that the mitigation measures listed above are properly implemented. The site audit frequency will be increased to weekly intervals during the piling works. 	<p data-bbox="1913 342 1969 370">N/A</p> <p data-bbox="1913 407 1948 435">^</p>
<p data-bbox="201 521 296 548">Ecology</p>	<ul data-bbox="415 505 1856 597" style="list-style-type: none"> <li data-bbox="415 505 1856 597">• Mitigation measures for minimising water quality impacts are presented in detail above. These measures will be properly implemented and good construction practices will be adopted to minimise potential adverse impacts to marine ecological resources. 	<p data-bbox="1913 521 1948 548">^</p>

Remarks: ^ Compliance of mitigation measure; X Non-compliance of mitigation measure;
 N/A Not Applicable at this stage; • Non-compliance but rectified by the contractor;
 * Recommendation was made during site audit but improved/rectified by the contractor;
 # Non-compliance but rectified/improved by the contractor and awaiting IEC's further comment.

**APPENDIX C
WASTE GENERATION IN THE
REPORTING MONTH**

**APPENDIX D
COMPLAINT LOG**

APPENDIX D – COMPLAINT LOG**Reporting Month:** March 2010

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
N/A	N/A	N/A	N/A	N/A	N/A

Remarks: No environmental complaint was received in the reporting month.

APPENDIX E
CONSTRUCTION PROGRAMME



**Proposed Bio-Diesel Plant at T.K.O.T. Lot No. 39 S.Q. ss.1, ss.2 and Ext. thereto Chun Wang Street, TKO Ind. Estate, Kln
3 Month Rolling Programme (Feb 2101 - Apr 2010)**

ID	Section	Task Name	Duration	Start	Finish	September												January	
						W32	W43	W54	W65	W76	W87	W98	W109	W120	W131	W142	W153		
1		1 1A - Administration Building	316 days	19 Nov '09	30 Sep '10														
2	1.1	Substructure Construction Works	51 days	19 Nov '09	8 Jan '10														
3	1.2	Superstructure Design and BD Approval and Consent	90 days	5 Jan '10	4 Apr '10														
4	1.3	Superstructure Construction Works	46 days	5 Apr '10	20 May '10														
5	1.4	Building Service Installation Works	85 days	21 May '10	13 Aug '10														
6	1.5	Transform Room Works	85 days	21 May '10	13 Aug '10														
7	1.6	Finishing Works	60 days	15 Jul '10	12 Sep '10														
8	1.7	Lift Procurement	150 days	20 Feb '10	19 Jul '10														
9	1.8	Lift Installation Works	30 days	20 Jul '10	18 Aug '10														
10	1.9	Lift Testing	43 days	19 Aug '10	30 Sep '10														
11	1.10	Building Service Testing	43 days	14 Aug '10	25 Sep '10														
12	1.11	Fire Service Testing	43 days	14 Aug '10	25 Sep '10														
13																			
14		2 1B - Process Building	374 days	5 Nov '09	13 Nov '10														
15	2.1	Substructure Construction works (Include Ground Slab)	72 days	5 Nov '09	15 Jan '10														
16	2.2	Superstructure Design and BD Approval and Consent (2nd Subm	90 days	4 Jan '10	3 Apr '10														
17	2.3	Superstructure Construction Works	90 days	4 Apr '10	2 Jul '10														
18	2.4	BDI Process Equipment Installation Works	63 days	18 Apr '10	19 Jun '10														
19	2.5	BDI Piping, Electrical, Insulation & Instrumentation Works	175 days	23 May '10	13 Nov '10														
20	2.6	Building Service Installation Works	90 days	3 Jul '10	30 Sep '10														
21	2.7	Cladding Works	55 days	3 Jul '10	26 Aug '10														
22	2.8	Finishing Works	60 days	1 Sep '10	30 Oct '10														
23	2.9	Building Service Testing	43 days	1 Oct '10	12 Nov '10														
24	2.10	Fire Service Testing	43 days	1 Oct '10	12 Nov '10														
25																			
26		3 1B - Fat Preparation Building	294 days	2 Dec '09	21 Sep '10														
27	3.1	Substructure Construction Works	23 days	1 Jan '10	23 Jan '10														
28	3.2	Superstructure Design and BD Approval and Consent	90 days	2 Dec '09	1 Mar '10														
29	3.3	RC Superstructure Construction Works	45 days	2 Mar '10	15 Apr '10														
30	3.4	Fat Preparation Steel Works	30 days	16 Apr '10	15 May '10														
31	3.5	BDI Fat Prep. Equipment Installation Works	28 days	16 May '10	12 Jun '10														
32	3.6	BDI Fat Prep. Piping, Electrical, Insulation & Instrumentation Wor	56 days	13 Jun '10	7 Aug '10														
33	3.7	Building Service Installation Works	60 days	16 May '10	14 Jul '10														
34	3.8	Finishing Works	60 days	9 Jul '10	6 Sep '10														

Project: TKO39-MP-R01-02 3M Feb - Date: 2 Mar '10	Critical		Split		Milestone		External Tasks	
	Critical Split		Task Progress		Summary Progress		External Milestone	
	Critical Progress		Baseline Split		Summary		Deadline	
	Task		Baseline Milestone		Project Summary			



Proposed Bio-Diesel Plant at T.K.O.T. Lot No. 39 S.Q. ss.1, ss.2 and Ext. thereto Chun Wang Street, TKO Ind. Estate, Kln
3 Month Rolling Programme (Feb 2101 - Apr 2010)

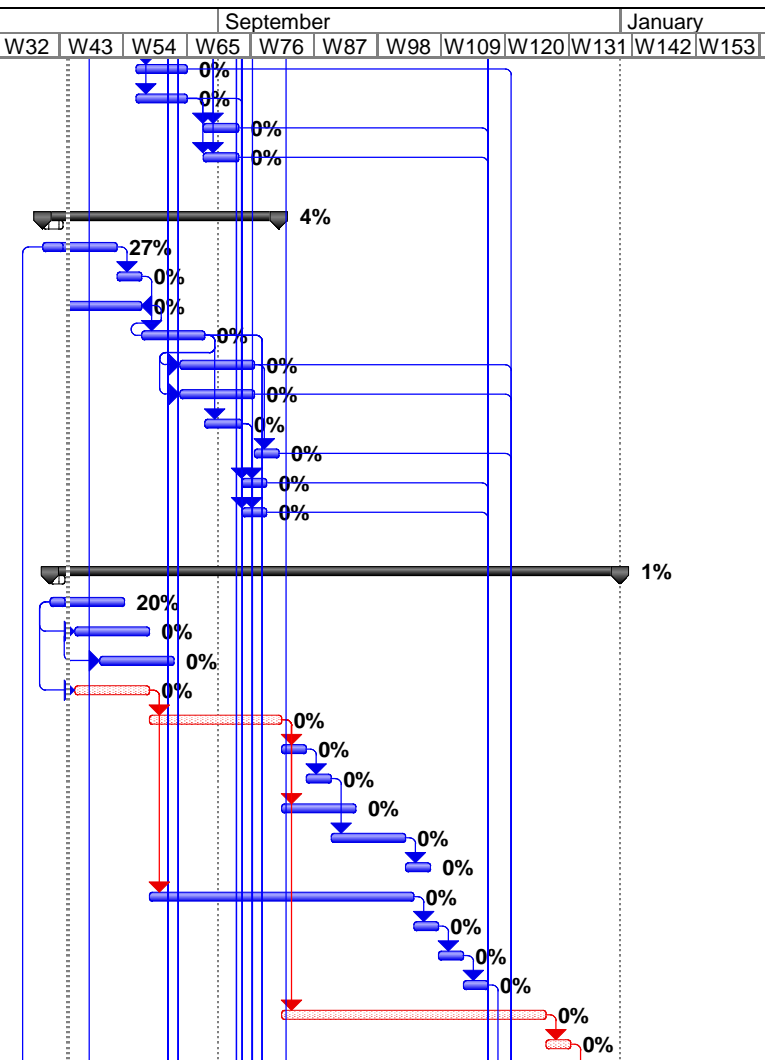
ID	Section	Task Name	Duration	Start	Finish	September												January						
						W32	W43	W54	W65	W76	W87	W98	W109	W120	W131	W142	W153							
35	3.9	Building Service Testing	39 days	14 Aug '10	21 Sep '10																			
36	3.10	Fire Service Testing	39 days	14 Aug '10	21 Sep '10																			
37																								
38	4 1B - Boiler Room		316 days	2 Dec '09	13 Oct '10																			
39	4.1	Substructure Construction Works	23 days	1 Jan '10	23 Jan '10																			
40	4.2	Superstructure Design and BD Approval and Consent	90 days	2 Dec '09	1 Mar '10																			
41	4.3	RC Superstructure Construction Works	45 days	2 Mar '10	15 Apr '10																			
42	4.4	Boiler Room Steel Works	63 days	4 Jun '10	5 Aug '10																			
43	4.5	BDI Boiler Room & Utility Equipment Installation Works	63 days	21 May '10	22 Jul '10																			
44	4.6	BDI Boiler Room Piping, Electrical, Insulation & Instrumentation \	56 days	9 Jul '10	2 Sep '10																			
45	4.7	Chimney Works	30 days	4 Aug '10	2 Sep '10																			
46	4.8	Building Service Installation Works	60 days	7 Jul '10	4 Sep '10																			
47	4.9	Finishing Works	60 days	6 Aug '10	4 Oct '10																			
48	4.10	Building Service Testing	39 days	5 Sep '10	13 Oct '10																			
49	4.11	Fire Service Testing	39 days	5 Sep '10	13 Oct '10																			
50																								
51	5 2A - Tank Farm		332 days	2 Dec '09	29 Oct '10																			
52	5.1	2nd Plate Load Test & BD consent	45 days	11 Jan '10	24 Feb '10																			
53	5.2	Foundation Construction	75 days	25 Feb '10	10 May '10																			
54	5.3	Bunwall Construction	60 days	11 Apr '10	9 Jun '10																			
55	5.4	Tank Design and BD Approval and Consent	90 days	2 Dec '09	1 Mar '10																			
56	5.5	Tank Erection Works	90 days	11 Apr '10	9 Jul '10																			
57	5.6	BDI Process Equipment Installation Works	60 days	11 Apr '10	9 Jun '10																			
58	5.7	BDI Process Piping and Instrumentation Works	60 days	31 Aug '10	29 Oct '10																			
59	5.8	Building Service Installation Works	60 days	10 Jul '10	7 Sep '10																			
60	5.9	Building Service Testing	41 days	8 Sep '10	18 Oct '10																			
61	5.10	Fire Service Testing	41 days	8 Sep '10	18 Oct '10																			
62																								
63	6 2B-E Tank Farm		298 days	2 Dec '09	25 Sep '10																			
64	6.1	Foundation Construction	75 days	14 Jan '10	29 Mar '10																			
65	6.2	Bunwall Construction	60 days	28 Feb '10	28 Apr '10																			
66	6.3	Tank Design and BD Approval and Consent	90 days	2 Dec '09	1 Mar '10																			
67	6.4	Tank Erection Works	56 days	30 Mar '10	24 May '10																			
68	6.5	BDI Process Equipment Installation Works	56 days	30 Mar '10	24 May '10																			

Project: TKO39-MP-R01-02 3M Feb - Date: 2 Mar '10	Critical		Split		Milestone		External Tasks	
	Critical Split		Task Progress		Summary Progress		External Milestone	
	Critical Progress		Baseline Split		Summary		Deadline	
	Task		Baseline Milestone		Project Summary			



**Proposed Bio-Diesel Plant at T.K.O.T. Lot No. 39 S.Q. ss.1, ss.2 and Ext. thereto Chun Wang Street, TKO Ind. Estate, Kln
3 Month Rolling Programme (Feb 2101 - Apr 2010)**

ID	Section	Task Name	Duration	Start	Finish	September										January				
						W32	W43	W54	W65	W76	W87	W98	W109	W120	W131	W142	W153			
69	6.6	BDI Process Piping and Instrumentation Works	62 days	25 May '10	25 Jul '10															
70	6.7	Building Service Installation Works	62 days	25 May '10	25 Jul '10															
71	6.8	Building Service Testing	43 days	14 Aug '10	25 Sep '10															
72	6.9	Fire Service Testing	43 days	14 Aug '10	25 Sep '10															
73																				
74	7 3 - Waste Water Treatment Plant		286 days	1 Feb '10	13 Nov '10															
75	7.1	Foundation Design, BD Approval and Consent	90 days	1 Feb '10	1 May '10															
76	7.2	Foundation Construction	30 days	2 May '10	31 May '10															
77	7.3	Superstructure Design and BD Approval and Consent	90 days	3 Mar '10	1 Jun '10															
78	7.4	Superstructure Construction including IC reactor	76 days	1 Jun '10	15 Aug '10															
79	7.5	Treatment Equipment Installation Works	90 days	17 Jul '10	14 Oct '10															
80	7.6	Process Equipment Installation Works.	90 days	17 Jul '10	14 Oct '10															
81	7.7	Building Service Installation Works	45 days	16 Aug '10	29 Sep '10															
82	7.8	Treatment Installation Testing	30 days	15 Oct '10	13 Nov '10															
83	7.9	Building Service Testing	30 days	30 Sep '10	29 Oct '10															
84	7.10	Fire Service Testing	30 days	30 Sep '10	29 Oct '10															
85																				
86	8 4A - Jetty		690 days	10 Feb '10	31 Dec '11															
87	8.1	Piling Design, BD Approval and Consent	90 days	10 Feb '10	10 May '10															
88	8.2	Pile Cap Design, BD Approval and Consent	90 days	12 Mar '10	9 Jun '10															
89	8.3	Superstructure, BD Approval and Consent	90 days	11 Apr '10	9 Jul '10															
90	8.4	SI and Founding Level determination	90 days	12 Mar '10	9 Jun '10															
91	8.5	Piling For FS Pump House (assumed 8 nos.)	160 days	10 Jun '10	16 Nov '10															
92	8.6	FS Pump House Pile Cap Construction	30 days	17 Nov '10	16 Dec '10															
93	8.7	FS Pump House Superstructure Works	30 days	17 Dec '10	15 Jan '11															
94	8.8	FS Pipe Bridge Works	90 days	17 Nov '10	14 Feb '11															
95	8.9	FS Pump House piping, E&M installation works	90 days	16 Jan '11	15 Apr '11															
96	8.10	FS Pump House Testing	30 days	16 Apr '11	15 May '11															
97	8.11	Stage 1 Piling For Jetty (assumed 16 nos.)	320 days	10 Jun '10	25 Apr '11															
98	8.12	Stage 1 Jetty Pile Cap Construction	30 days	26 Apr '11	25 May '11															
99	8.13	Stage 1 Jetty Superstructure Construction	30 days	26 May '11	24 Jun '11															
100	8.14	Stage 1 Jetty Furniture, Lighting & Building Service Works	30 days	25 Jun '11	24 Jul '11															
101	8.15	Stage 2 Piling For Jetty (assumed 16 Nos)	320 days	17 Nov '10	2 Oct '11															
102	8.16	Stage 2 Jetty Pile Cap Construction	30 days	3 Oct '11	1 Nov '11															



Project: TKO39-MP-R01-02 3M Feb - Date: 2 Mar '10	Critical		Split		Milestone		External Tasks	
	Critical Split		Task Progress		Summary Progress		External Milestone	
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	Task		Baseline Milestone		Project Summary			



Proposed Bio-Diesel Plant at T.K.O.T. Lot No. 39 S.Q. ss.1, ss.2 and Ext. thereto Chun Wang Street, TKO Ind. Estate, Kln
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ID	Section	Task Name	Duration	Start	Finish	September												January	
						W32	W43	W54	W65	W76	W87	W98	W109	W120	W131	W142	W153		
136	12.2	WSD XP Application	180 days	11 Dec '09	8 Jun '10														
137	12.3	WSD pipe laying works	60 days	9 Jun '10	7 Aug '10														
138	12.4	WSD inspection and installation of watermeter (WVO46)	30 days	1 Oct '10	30 Oct '10														
139																			
140		13 FS & OP Inspection	56 days	25 Jul '11	18 Sep '11														
141	13.1	FS Inspection	28 days	25 Jul '11	21 Aug '11														
142	13.2	OP Inspection	28 days	22 Aug '11	18 Sep '11														

Project: TKO39-MP-R01-02 3M Feb - Date: 2 Mar '10	Critical		Split		Milestone		External Tasks	
	Critical Split		Task Progress		Summary Progress		External Milestone	
	Critical Progress		Baseline Split		Summary		Deadline	
	Task		Baseline Milestone		Project Summary			