# ASB Biodiesel (Hong Kong) Limited

# Development of a Biodiesel Plant at Tseung Kwan O Industrial Estate

Monthly EM&A Report

(version 1.0)

December 2009

Certified By	Men	
	(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 7<sup>th</sup> 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 December 2009.
- 2. The major site activities undertaken in the reporting month included:
  - Pile cap construction;
  - Tank Farm 2A construction; and
  - Drainage construction.

#### **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 (PP-RE0037-09) 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
IUNICI	Summary fusic for ney mormation in the reporting month

Event	Event Details		Action Taken	Status	Remark	
Event	Number	Nature	ACTION LAKEN	Status	Kemark	
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 November 2009	Submitted to EPD on 11 December 2009 (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:
  - Pile cap construction;
  - Tank Farm 2A construction;
  - Drainage construction; and
  - Process Building steel superstructure 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 7<sup>th</sup> Monthly EM&A report summarizing the EM&A works for the Project in December 2009.

# **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.

Party	Role	Name	Position	Phone No.	Fax No.	
ASB Permit Holder		Mr. Eddie Chung	Project Manager	9189 8118	37411661	
		Dr. HF Chan	ET Leader	2151 2088		
Cinotech	Environmental	Ms. Ivy Tam	Project Coordinator	2151 2090	3107 1388	
	Team	Ms. Cara Heung	Audit Team Leader	2151 2078		
Manuinas	Independent Environmental Checker	Mr. Mark Cheung	Independent Environmental Checker	3168 2028	2168 2022	
Mannings		Mr. Gavin Kwok	Assistant to Independent Environmental Checker	3168 2028	3168 2022	
CHEC	Contractor	Mr. Stephen Tse	Project Manager	8106 1848	2623 9226	
CHEC	Contractor	Mr. Fred Ho	Environmental Officer	9279 6226		

#### **Construction Programme**

- 1.10 The site activities undertaken in the reporting month were:
  - Pile cap construction;;
  - Tank Farm 2A construction; and
  - Drainage construction.

#### **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 22<sup>nd</sup> December 2009 by ET in the reporting month. No non-compliance was observed during the site audits.
- 2.3 The installation of wetsep was observed completed and under operation at the time of site audit on  $22^{nd}$  December 2009.

### **Status of Environmental Licensing and Permitting**

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

#### **Status of Waste Management**

2.5 2.2 x 1000 m<sup>3</sup> 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**

2.6 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**.

D	Valid Period		D-4-11-	Status		
Permit / License No.	From To		Details			
Environmental Permit (EP)						
EP-319/2009/A	07/04/2009	N/A	Construction and operation of	Valid		
			(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 tran- 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			
Registration of Chemical Was	te Producer					
WPN-5113-839-C1186-15	12/06/2009	-	Spent Lubrication oil.	Valid		
Construction Noise Permit (C	NP)					
PP-RE0037-09	11/08/2009	28/12/2009	To carry out percussive piling for the construction site during 0700- 1900 hours on all days except general holidays.	Expired		
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 Licens	e					
WT00004508-2009	07/09/2009	-	-	Valid		

# Table 2.1Summary of Environmental Licensing and Permit Status

2.7 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.

Parameters	Date	<b>Observations and Recommendations</b>	Follow-up	
Air Quality	22-12-09	<u>Reminder</u> Provide water spray on the dry unpaved area more frequently.	Rectification photo received from Contractor 05/01/2010.	was The on
Waste/Chemical Management	22-12-09	<u>Reminder</u> Clear the temporary stored C&D waste more frequently	I I I I I I I I I I I I I I I I I I I	was The on

 Table 2.2
 Observations and Recommendations of Site Audit

#### **Summary of Complaint and Prosecution**

- 2.8 No environmental related complaint, prosecution or notification of summons was received in the reporting month.
- 2.9 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:
  - Pile cap construction;
  - Tank Farm 2A construction;
  - Drainage construction; and
  - Process Building steel superstructure 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.

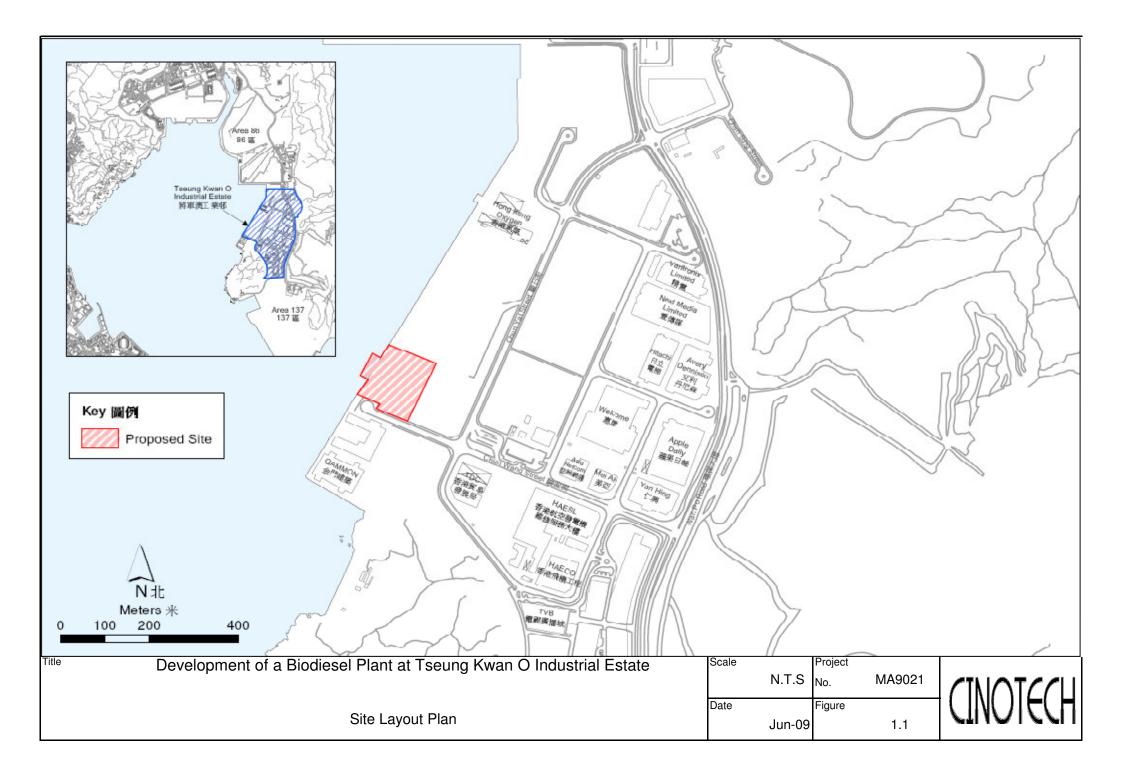
#### Noise Impact

- 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



APPENDIX A SITE AUDIT SUMMARY

### Monthly Site Inspection Record Summary

Inspection	Information
mopeouton	Intor macron

Checklist Reference Number	91222	
Date	22 December 2009 (Tuesday)	
Time	15:00 - 16:00	

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

Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality	
	<ul> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	B. Air Quality	
	Reminder	
91222-R01	• Provide water spray on the dry unpaved area more frequently.	C5
	C. Noise	
	<ul> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	D. Waste / Chemical Management	
	Reminder	
91222-R02	<ul> <li>Clear the temporary stored C&amp;D waste more frequently.</li> </ul>	E4ii.
	E. Permit / Licenses	
	<ul> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	F. Reminders	
	<ul> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	G. Others	
	• Follow-up on previous audit section (Ref. No.:91118), all environmental	
	deficiencies were improved/rectified by contractor.	

	Name	Signature	Date
Recorded by	Cara Heung	B	24 November 2009
Checked by	Dr. HF Chan	(fr)	24 November 2009

APPENDIX B UPDATED ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE

Types of Impacts	Mitigation Measures	Status
	• Dust control measures such as water spaying on roads and dusty areas, covering of lorries by impervious sheets and controlling of the falling height of fill materials will be implemented;	٨
	• Effective dust screens, sheeting or netting will be provided to enclose the scaffolding from the ground level of the facility during the building construction;	N/A
	<ul> <li>All debris and materials will be covered or stored in a sheltered debris collection area;</li> </ul>	^
Construction	• Hoarding from ground level will be provided along the entire length of the site boundary except for a site entrance or exit;	^
Dust	• 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;	
	<ul> <li>Regular maintenance and checking of the diesel powered mechanical equipment will be adopted to avoid any black smoke</li> </ul>	٨
	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.	^
	• Only well-maintained plant will be operated on-site and plant will be serviced regularly during the construction program;	٨
	• Silencers or mufflers on construction equipment will be utilized and will be properly maintained during the construction program;	^
	<ul> <li>Mobile plant, if any, will be sited as far from NSRs as possible;</li> </ul>	^
Construction	<ul> <li>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;</li> </ul>	^
Noise	• 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.	٨

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

Types of Impacts	Mitigation Measures	Status
	<ul> <li><u>Piling Activities</u></li> <li>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.</li> <li><u>Construction Site Run-off and Drainage</u></li> </ul>	N/A
Water Quality	<ul> <li>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.</li> <li>Careful programming of the works to minimise surface excavations for the construction works during the wet season. If</li> </ul>	۸
	<ul> <li>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.</li> <li>Exposed soil surfaces will be protected by paving or fill material as soon as possible to reduce the potential of soil erosion.</li> <li>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.</li> </ul>	^ ^
	<ul> <li><u>General Construction Activities</u></li> <li>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.</li> <li>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.</li> </ul>	^

Types of Impacts	Mitigation Measures	Status
	Sewage generated from On-site Workforce	
	<ul> <li>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> <li>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.</li> </ul>	N/A ^
Ecology	• 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.	^

Remarks: ^ Compliance of mitigation measure;

- X Non-compliance of mitigation measure;
- Non-compliance but rectified by the contractor;
- N/A Not Applicable at this stage;
   Non-compliance but 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

	Actu	ual Quantities of Ine	ert C&D Materia	ils Generated / Imp	orted (in '000	m <sup>3</sup> )	Act	ual Quantities of O	Other C&D Materials /	Wastes Gene	rated
Month	Total Quantities Generated [a+b+c+d]	Broken Concrete (including rock for recycling into aggregates) ( a )	Reused in the Contract ( b )	Reused in Other Projects ( c )	Disposed as Public Fill ( d )	Imported C&D Material	Metal (in '000 kg)	Paper/ cardboard packaging (in '000kg)	Plastics (bottles/containers, plastic sheets/ foams from package material) (in '000kg)	Chemical Waste (in '000kg)	Others (e.g. General Refuse etc.) (in '000m3)
January					 		<u>  </u>				
February											/
March											۳۴
April											۳۴
May											۳۴
June											ľ
Half-year Total											
July	2.9	0	2.9	0	0	0	0	0	0	0.04	0.01
August	0.2	0	0.2	0	0	0.2	0	0.05	0.01	0.02	0.02
September	0	0	0	0	0	0	0	0.05	0.01	0.02	0.02
October	0	0	0	0	0	0	0	0.05	0.01	0.02	0.02
November	6.6	0	3.3	0	3.3	0	0	0.05	0.01	0	0.03
December	2.2	0	0	0	2.2	0	0	0.05	0.01	0	0.02
Yearly Total											

APPENDIX D COMPLAINT LOG

# **APPENDIX D – COMPLAINT LOG**

# **Reporting Month**: December 2009

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

		_			2000							0010			
Activity ID	Activity Description	Start	Finish	OCT	2009 NOV 45 46 47 48 49 50	DEC	JAN	FEB	MAR	APR	M	2010 AY JUN		AUG	SEP O
Contract	ี่ มีสารรถายุแบบท			41 42 43 44	45 <mark>46 47 48 49 50</mark>	<u>51 52 53 1</u>	2 3 4	0 <mark>6 7 8</mark>	<u>9 10 11 12</u>	<u>13 14 15 1</u>	<u>6 17 18 19</u>	20 21 22 23 24	<mark>2526272829</mark>	30 31 32 33 34	<mark>35 36 37 38 39</mark>
GEN02200	Commencement of Superstructure 1B(BP)	27/01/10*					♦								
		27/01/10					<b>↓</b>								
PRO02200	Commencement of Steel structure 1B(BP)	01/02/10													
		01/02/10						•							
Engineering															
	nistration Building														
Foundation															
Piling Z10010900	Piling Amendment (change of loading Schedule)	24/11/09	21/12/09	_											
Superstructure		2 // 1//00	21,12,00				   								
Administration Building	ng Superstructure Plan						i I								
DS1A310100	Submission of Superstructure		07/12/09*												
DS1A310200 DS1A310300	BD Comment & Approval(AB) Consent Application to BD(AB)(BA8)	08/12/09	05/02/10												
Building Service		23/01/10	19/02/10												
DS1A311300	Tender Process	04/09/09A	04/12/09												
DS1A311400	Design Review+Shop Drawings	05/12/09	04/02/10												
Transformer Room															
Transformer Room PO20500400	Transformer Order	17/11/09	15/05/10												
1.11	y Plants (FP+BR)	17/11/05	10/00/10												
Foundation															
Piling								1							
DS1B110320	Piling Design Amend due to BDI Load Changed	09/12/09	05/01/10												
Substructure															
Fat Prepaaration Plan	nt Room														
Pile Cap DS1B210400	PileCap Cons Appli to BD(BA8) with ELS Dsg Submi	25/11/09	22/12/09												
Boiler Room		23/11/03	22/12/03												
Pile Cap								i							
DS1B010420	PileCap Cons Appli to BD(BA8) with ELS Dsg Submi	25/11/09	22/12/09												
Superstructure							1								
Fat Preparation Plant Reinforced Concrete															
DS1B310300	RC Structure Design Comment & Approval Z1B(FP)	23/11/09	21/01/10												
DS1B310400	RC Structure Consent Application Z1B(FP)(BA8)		18/02/10												
Steel Work Plat Form			0.10110												
DS1B320300 DS1B320400	Submit to BD with RC Structure Design by JCL Steel Structure Consent to BD Z1B(FP)(BA8)	23/11/09 22/01/10													
Boiler Room		22/01/10	10/02/10												
Reinforced Concrete	Structure														
DS1B310520	RC Structure Design Approval Z1B(BR)		21/01/10												
DS1B310530	RC Structure Consent Z1B(BR)(BA8)	22/01/10	18/02/10												
Steel Works Plat Forr DS1B320700	Submit to BD with RC Structure by JCL	23/11/09	21/01/10												
DS1B320800	Consent Application to BD (BA8)		18/02/10												
Zone 2A Tank	Farm														
Combined Foundation															
	rm Combined Foundation Design														
DS2A210040 DS2A210050	New Consent Application to BD(BA8) Noticification of Commencement(BA10)	03/01/10													
	Combined Foundation Design	31/01/10	00/02/10												+
DS2A220400	BD Comment and Approval	04/11/09	02/01/10	📫											
DS2A220500	Consent Application and Approval(BA8)	03/01/10	30/01/10												
DS2A220600	Notice of Commencement(BA10)	31/01/10	06/02/10		♥	<b>•</b>	<b>V</b>								
Data Date	03/11/09			AC06					Sheet 1 of 5						
			C05			ASB Biodiese	el			Date		Revision		Checked	Approved
		P	rogress Ba	ar	Ho	ong Kong Biodies	el Plant								
		C	ritical Acti	vity		3mths Rolling	a								
1	I			1			<u>ل</u>			1					

Data Date	03/11/09		AC06 Sheet 1 of 5	í l	
		AC05	ASB Biodiesel	Date	
		Progress Bar	Hong Kong Biodiesel Plant	I	
		Critical Activity	3mths Rolling		
			Shiris Koling		
?Primavera Systems, Inc.					

		_			2000									2010				
Activity ID	Activity Description	Start	Finish	ОСТ	NOV	DEC		JAN		FEB	MAR	APR		MAY	JUN	JUL	AUG	SEP 0
Superstructure	Description			41 42 43 44	<mark> 45  46  47  48  </mark>	<mark>49 50 51 5</mark>	2 <mark>53 1</mark>	<mark>_2_3</mark>	<u>4 5 6</u>		) <sub> </sub> 10  11  12	<mark>.13 .14 .15 .1</mark> 0	5 <mark> 17  18  </mark> 19	20 21 22	23 24 25 2	2 <mark>6  27  28  29  30  </mark>	<mark> 31  32  33  34  </mark> 3 	35  36  37  38  39
Tanks & Access Stair																		
DS2A310400	BD Comment and Approval	23/11/09	21/01/10															
DS2A310500	Consent Application(BA8)		18/02/10															
Pipe Bridge (Tank Far									1	1								
DS2A320200	BD Comment Approval		02/01/10															
DS2A320300	Consent Application (BA8)		30/01/10					1										
DS2A320400	Notice of Commencement(BA10)	31/01/10	06/02/10							1								
Zone 2B to 2E	Iank Farm								1	l l								
Superstructure																		
Tanks & Access Stair DS2B310300	Tanks & Access Stair Approval Z2B-2E	12/11/09	10/01/10															
DS2B310300	Manufactory of Tanks & Access Stair Z2B-2E		11/03/10															
1	Water Treatment Plant	11/01/10	11/00/10						1	1								
Process & General I																		
DS30002000	Approval by EPD	03/11/09	01/01/10						i i									
DS30002100	Submit to BD consent		04/01/10															
DS30002200	BD Consent	04/01/10																
Foundation																		
Footing				_														
DS30110300	Footing Approval Z3	05/11/09	03/01/10									_						
Excavation and Latera		04/40/00	00/40/00	-														
DS30010400	ELS Design Approval Z3	01/12/09	30/12/09															
Superstructure Reinforced Concrete	Charling								1	1								
DS30210300	RC Structure Approval Z3	06/11/09	04/01/10															
Steel Structure			0 1/0 1/10															
DS30310300	Steel Structure Approval Z3	04/11/09	02/01/10						i i									
DS30310400	Steel Structure Manufacture & Delivery	03/01/10	03/03/10															
Zone 4A Jetty																		
Piling																		
Piling									1	1								
DS4A110300	Marine & Land Piling Approval Z4A	03/11/09	01/01/10						 									
Superstructure																		
Reinforced Concrete		0.4/44/00	00/40/00						1									
DS4A210100 DS4A210200	RC Structure Design Z4A RC Structure Submission Z4A		03/12/09 04/12/09						1	1								
DS4A210200	RC Structure Approval Z4A		01/02/10		-													
Seawater Intake Pum									1									
DS4A310100	Seawater Intake Pump Station Design Z4A		02/01/10						1									
DS4A310200	Seawater Intake Pump Station Submission Z4A		04/01/10						1									
DS4A310300	Seawater Intake Pump Station Approval Z4A	04/01/10	04/03/10															
	ing/Unloading Station								1									
Foundation																		
Footing	Easting Approval 74D	40/44/00	11/01/40															
DS4B110300 Excavation and Latera	Footing Approval Z4B	16/11/09	14/01/10						1									
DS4B110040	ELS Design Approval Z4B	01/12/09	30/12/09															
Superstructure		1																
Reinforced Concrete	Structure																	
DS4B210100	RC Structure Design Z4B	03/01/10	14/01/10															
DS4B210200	RC Structure Submission Z4B	15/01/10	15/01/10					' <u>}</u>										
DS4B210300	RC Structure Approval Z4B	15/01/10	15/03/10				┝──┤╢			!								
Pipe Bridge W	Orks																	
Substructure																		
Footing DSPB110200	Footing Submission	03/12/09	03/12/00				L I		, 11									
		03/12/09	03/12/09	I					<u> </u>								ļ	I
Data Date	03/11/09		0.05	AC06						5	Sheet 2 of 5	1					-	_
			C05			ASI	B Biodiese	el			Da	ate		Revis	ion		Checked	Approved
		P	rogress B	ar		Hong Kon	ng Biodiese	el Plant										
		C	ritical Act	ivity		-	-											
						3m	ths Rolling	y										

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Activity	Activity	Start	Finish	ОСТ	2009 NOV	DEC	JAN	FEB MA	AR	2010 APR MAY	JUN	JUL AUG 5 27 28 29 30 31 32 33 34	SEP O
ID Exerting	Description			41 42 4 <u>3</u> 44	45 46 47 48 49 50	51 52 53 1	2 3 4	<mark>5 6 7 8 9 10 1</mark>	1 12 13 14	15 16 17 18 19 20 21	22 23 24 25 20	<u>6 27 28 29 30 31 32 33 34</u>	<mark>35 36 37 38 39</mark>
Footing DSPB110300	Footing Approval	03/12/09	31/01/10										
Excavation and Lateral		00/12/00	01/01/10										
DSPB210100	ELS Design	01/12/09*	21/12/09										
DSPB210200	Submit ELS Design to Jacobs for review	22/12/09	27/12/09										
DSPB210300	ELS Design Submission to BD	28/12/09	28/12/09										
DSPB210400	ELS Design Approval	29/12/09	27/01/10										
Superstructure													
DSPB310100	Steel Structure Design		31/01/10										
DSPB310200	Steel Structure Submission		01/02/10										
DSPB310300	Steel Structure Approval	01/02/10	01/04/10										
Drainage Works	<b>i</b>												
External FoulWater S	ystem												
DSDW120500	Consent Application for ELS Wks&Drainage	(BA8) 19/11/09	16/12/09										
DSDW120550	Completion of Drainage Works Consent		16/12/09		◆								
DSDW120600	Notice of Commencement(BA10)	17/12/09	23/12/09										
DSDW120820	BD Comment and Approval	19/11/09	17/01/10										
DSDW120830	Consent Application for Drainage ELS(Mainl	nole) 18/01/10	14/02/10										
Road Works													
Road Works													
DSRW110200	Roadworks Submission		03/12/09										
DSRW110300	Roadworks Approval		31/01/10										
DSRW120100	Submit to BD for Roadwork Consent BA8		01/02/10										
DSRW120200	Consent of Roadwork by BD BA8	01/02/10	28/02/10										
Miscellaneous V	Norks												
Boundary Wall													
DSMW120200	BA8 Boundary Wall Approval	20/11/09	17/12/09										
Procurement.	Manufacture & Delivery												
Main Process a													
PO10100120	Manufacturing & Delivery	27/04/09A	16/01/10										
	Manufacturing & Delivery	Z7/04/09A	10/01/10										
Utilities													
Processing Utilities													
PO20100130	Manufacturing and Delivery	04/11/09	03/03/10										
Fire Services			00/00/10										
PO20100100	Prepare Fire Services equipment shop draw		02/02/10 04/03/10				· · ·						
PO20100200	Fire Services equipment Purchasing	05/12/09	04/03/10										
MVAC Works PO20200100	Prepare MVAC equipment shop drawing	05/12/00*	02/02/10										
PO20200100 PO20200200	MVAC equipments Purchasing		02/02/10										
Lift System		00/02/10											+
PO20301300	Lift Support System Manufacture	03/12/09	02/03/10	-									
PO20302300	Lift Manufacture		01/05/10										
Water Main		190, 12, 90											
PO20400100	Prepare Water Main shop drawing	05/12/09	03/01/10										
PO20400110	Water Main Design Approval		04/03/10										
	oading/unloading Stations	1											
PO30100300	Manufacturing & Delivery	28/04/094	02/02/10										
		20/04/00/											++1
Structures Co													
Zone 1 Building	S												
1A-Administration Bu	Iding												
Pile Cap & Ground Slat													
Z10020250	Pile Cap Amendment(Type 2)		21/12/09			<b></b>							
Z1A002300	Installation of Sheet Pile	01/12/09	14/12/09										
Z1A002310	Excavation for Administration Building	15/12/09	30/12/09										
Z1A002320	Administration Building PileCaps&Tie Beam	s 31/12/09	08/02/10			<b>*</b>							
Data Date	03/11/09			AC06				Sheet 3 of 5					
		A	C05			ASB Biodies	sel		Date		Revision	Checked	Approved
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Data Date	03/11/09		AC06 Sheet 3 of 5		
		AC05	ASB Biodiesel	Date	
		Progress Bar	Hong Kong Biodiesel Plant		
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Activity ID	Activity Description	Start	Finish	OCT	2009 NOV	D	EC		JAN	FEB	MAR	APR MAY	JUN	JUL AUG 6 27 28 29 30 31 32 33 34 3	SEP O
1B-Processing Build				41 42 43 44	45 46 47 48	49 50 8	<mark>o1  52  5</mark>    ▲	0 <mark>3 1 2</mark>	2 <mark>34</mark>		, 11 <mark>12 13  </mark>     11   12	<u>⊓4 15 16 17 18 19 20 21</u> │	<u>,22 23 24 25 2</u>	o <mark>⊭7 28 29 30 31 32 33 34 3</mark>	ວວ <mark>,36 ,37 ,38 ,39</mark>
Z1BB02300	Completion of Column & Ground Slab Z1B(PB)		18/01/10	4		T	Π								
Z1BB02400	Commencement of Steel Structure Z1B(PB)	01/02/10													
Pile Cap Construction										<b>Å</b>					
Z1BB20110	Pile Cap Amendment(Type 2)		22/12/09	1											
Z1BB20400	Excavation for Processing Building		07/12/09					1							
Z1BB20500	Pile Cap Construction (except AB side)	08/12/09	28/12/09												
Superstructure			1.0/5.1												
Z1BB30100	Ground Slab Construction		18/01/10				╶╢╿		<b>  </b>						
Z1BB30200	Portion of Ground Slab ready for Equip install	08/01/10							<u>- +  </u>						
Z1BB30300 Z1BB30500	Install of Equip&Steel Wk Constr(Can Commence) BD Comment and Approval(PB)		01/01/10					<u> </u>	<u>+  </u>						+
Z1BB30600	Consent Application to BD(PB)		15/01/10												
Z1BB30610	Notice of Commencement for Superstructure(PB)		22/01/10							-					
Z1BB30700	Procurement of Steel Marterials		02/03/10		-										
Z1BB30800	Prefabrication of Steel Works		01/04/10												
Z1BB30900	Steel Work Construction (PB)	01/02/10	01/05/10												
Plant & Equipment Ins															
Z1BB40000	Plant & Equipment Installation Z1B(PB)	01/02/10	12/03/10												ļ
Architectural Building		4.010 + 11 -	10/00/11												
Z1BB60000	Submit to BD for Roof&Cladding BA8 Z1B(PB)	16/01/10	16/03/10												
1B - Fat Preparation	(FP)														
Foundation		05/14/22	00/40/22												
Z1BF00500	Loading Test & Site Clear(Submit report to BD)	25/11/09 09/12/09	08/12/09						+ + -						
Z1BF00600	Approval of BA14	09/12/09	15/12/09				■-		+ + -						
Substructure Z1BF10100	Notice of Commencement for Pile Cap(BA10)	23/12/09	29/12/09	-			<b></b>	.							
Z1BF10200	Substructure & PileCap Construction	30/12/09													
Structure Steel Wks		20, 12,00	,,												
Z1BF30610	Procurement of Steel Mat	23/12/09	20/02/10	1											
Z1BF30620	Fabrication of Steel Structure	22/01/10													
Boiler Room		·													
Foundation															
Z1BR001400	Loading Test & Site Clear(Submit report to BD)		08/12/09												
Z1BR001500	Approval of BA14	09/12/09	15/12/09				∎╟┥								
Substructure															
Z1BR002000	Notice of Commencement for Pile Cap(BA10)	23/12/09													
Z1BR002100	Substructure & PileCap Construction	30/12/09	12/02/10												
Structure Steel Wks	Progurament of Steel Met	22/12/00	20/02/40												
Z1BR004500 Z1BR004600	Procurement of Steel Mat Fabrication of Steel Structure	23/12/09 22/01/10													
		22/01/10	22/03/10												
Zone 2 Tank Fa															
2A - Tank Farms															
Bund Wall+Tank Farm		02/04/4.0	22/04/42												
Z2A000010 Tank Farms	Plate Load Test	03/01/10	23/01/10												
Z2A010200	Internal Review of Procurement	23/11/09	20/12/09	-											
Z2A010200 Z2A010300	Procurement of Materials	23/11/09													
Z2A030000	Fabrication of Materials	22/01/10													
Pipe Bridge Works (Ta							L								
Z2A040020	Procurement of Materials	19/12/09	18/03/10	1											
Z2A040030	Fabrication of Materials( Tank Farm Area Only)	18/01/10	17/04/10												
2B-2E Tank Farms															
Substructure							.								
DS2BD11600	Consent of ELS & Substructure by BD BA8 Z2B-2E		14/12/09												
Z2B000100	Excavation for Bund Wall & Footing Z2B-2E		13/01/10			<b> </b>									
Z2B000200	Inspection of final formation by BD Z2B-2E		20/01/10				<u> </u>								
Z2B010000	Bund Wall Z2B-2E	21/01/10	21/03/10												
Data Date	03/11/09			AC06						Sheet 4 d	of 5				
		A	C05				ASB Bio	odiesel		Sheel 4 (	Date		Revision	Checked	Approved
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			-			Hong	g Kong Bi	iodiesel l	Plant						
		C	ritical Act	ivity			3mths I	Rolling							
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3mths Rolling

Activity	Activity	Start	Finish	2009				2010									
		FIIIISII	OCT NOV DEC		JAN FEB		FEB	MAR APR MAY		JUN         JUL         AUG           22         23         24         25         26         27         28         29         30         31         32         33         34         35		SEP O					
ID	Description			41 42 43 44	<mark>45 46 47 48 1</mark>	<mark>49  50  51</mark>	<mark>52 53</mark>	1 2	<mark>.3 .</mark> 4	5 <mark>6 7 8</mark>	<mark>9 ,10 ,11 ,12 ,</mark> 1	<mark>13 <sub>-</sub>14 <sub>-</sub>15 <sub>-</sub>16 <sub>-</sub>17</mark>	<mark>  18  19  20  21  </mark>	<mark>22 23 24 25</mark>	26 27 28 29 30	<mark>31 32 33 34 35 34 35 34 35 34 35 34 35 35 35 35 35 35 35 35 35 35 35 35 35 </mark>	<mark>36 37 38 39</mark>
Zone 3 Waste W	ater Treatment Plant																
3 - Waste Water Treat	ment Plant																
Foundation								1									
DS30010050	Submit to BD for ELS&Substructure Consent BA8 Z3		04/01/10					J I									
DS30010060	Consent of ELS & Substructure by BD BA8 Z3	04/01/10															
Z3000010	Excavation for Footing Z3	01/02/10	24/02/10														
Zone 4 Loading	& Unloading Facilities																
4A-Jetty																	
Piling								L									
DS4A120100	Submit to BD for Marine Piling Consent BA8 Z4A	04/01/10	04/01/10				,	,									
DS4A120200	Consent of Marine Piling by BD BD8 Z4A	04/01/10	31/01/10														
Z4A010100	Excavation for Existing Seawall Z4A	02/01/10	31/01/10														
Z4A010200	Trial Pile 1nr Driving Z4A	01/02/10	03/02/10														
4B-Loading and Unloa	ading Building																
Foundation																	
DS4B110050	Submit to BD for ELS & Foundation Consent BA8 Z4B	15/01/10	15/01/10														
DS4B110060	Consent of ELS & Foundation by BD BA8 Z4B	15/01/10	11/02/10														
Utilities																	
Boundary Wall						-	.										
BW0000000	RC Fence Wall 2M high	18/12/09	03/09/10														
												-	-	-			

	Data Date 03/11/09		AC06 She	et 5 of 5	
		AC05	ASB Biodiesel	Date	
		Progress Bar	Hong Kong Biodiesel Plant		
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