

# Appendix G

The QA/QC Procedures and Results

HIGH VOLUME AIR SAMPLER  
SITE VISIT LOG SHEET

Site Name: S.E. Site No.: AM 1  
 Date of visit: 12-8-2002 Hour of Visit: 14.00  
 Staff name: H.K. Jangir HVAS S/N: 2188  
 Used filter paper no.: 1094 New filter paper no.: 1096  
 Type of filter: Glass-fibre

I. Ambient Conditions

Temperature,  $T_a = \frac{30.7 + 273}{303.7}$  K Pressure,  $P_a = 1005$  mb

II. Correction of manometer reading

Calibration orifice No.	Manometer reading at site conditions corresponds to $Q_{STD} = 40 \text{ ft}^3/\text{min}$ . (inch H <sub>2</sub> O)
1534(04/2002)	$\Delta H_a = 18.0(T_a/P_a) = 5.4$
1535(04/2002)	$\Delta H_a = 17.9(T_a/P_a) =$ _____

Manometer reading before calibration: 5.1  
 Adjustment of flow controller (Y/N): Y  
 Manometer reading after calibration: 5.4

Note: Tolerance Limit of HVAS flow:  $\pm 1.0 \text{ ft}^3/\text{min}$ . Corresponding limits for manometer :  $\pm 0.2 \text{ inch H}_2\text{O}$

III. General Conditions of HVAS

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IV. Remarks

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HIGH VOLUME AIR SAMPLER  
SITE VISIT LOG SHEET

Site Name: E.G. Site No.: AM2.  
 Date of visit: 12-8-2002 Hour of Visit: 15:00  
 Staff name: H.K. Teo HVAS S/N: 2185  
 Used filter paper no.: Lo 18 New filter paper no.: Lo 17  
 Type of filter: Glass-fibre

I. Ambient Conditions

Temperature,  $T_a = \frac{27+32}{30.5}$  K Pressure,  $P_a = 1010$  mb

II. Correction of manometer reading

Calibration orifice No.	Manometer reading at site conditions corresponds to $Q_{STD} = 40 \text{ ft}^3/\text{min}$ . (inch $\text{H}_2\text{O}$ )
1534(04/2002)	$\Delta H_a = 18.0(T_a/P_a) = 5.4$
1535(04/2002)	$\Delta H_a = 17.9(T_a/P_a) =$ _____

Manometer reading before calibration: 5.2  
 Adjustment of flow controller (Y/N): Y  
 Manometer reading after calibration: 5.4

Note: Tolerance Limit of HVAS flow:  $\pm 1.0 \text{ ft}^3/\text{min}$ . Corresponding limits for manometer :  $\pm 0.2$  inch  $\text{H}_2\text{O}$

III. General Conditions of HVAS

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IV. Remarks

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PARTISOL TSP SAMPLER  
SITE VISIT LOG SHEET

Site Name ASH LAGOON Site Number AM 3  
Date of Visit 12-8-2002 Hour of Visit 10.00  
Staff Name W L. MAK / H.K. TSANG Partisol S/N: 2000B 2055001  
Used Filter No.: PA 86 New Filter No.: PA 87  
Ambient temperature: 30.9 Ambient pressure: 1.009

I. General Services

1. Replace control unit Large In-line Filter X
2. Clean the sample inlet head ✓
3. Clean sample tube ✓
4. Clean / Replace pump head X
5. Clean / Replace piston X

II. Operational Audits (3 months interval as recommended by manufacturer)

1. Temperature Check (Ambient temperature  $\pm 2^{\circ}\text{C}$ )

30.9 °C Calibration: X/N 30.0 °C  
Before After

2. Pressure Check (Ambient pressure  $\pm 20$  mbar)(factor = 0.000987)

1.009 mbar Calibration: X/N 1.009 mbar  
Before After

3. Flow Check (16.7  $\pm$  1.1 litre/min)

16.70 cc/min Calibration: X/N 16.54 cc/min  
Before After

III. Remarks

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MINI VOLUME AIR SAMPLER  
SITE VISIT LOG SHEET

Site Name: TYV Site No.: AM4  
Date of visit: 12-8-2002 Hour of Visit: 11:10  
Staff name: H.K. Jang MINIVOL S/N: 2050  
Used filter paper no.: MF50 New filter paper no.: MF51  
Type of filter: ~~Cellulose~~ / Glass-fibre  
(Delete as appropriate)

- I. Calibration is performed by using Drycal DC-2 Flow Calibrator  
5 Sl/min set point is recommended

4975 Before 500f After

II. General Service of Mini Vol Air Sampler

1. Clean Rotameter: \_\_\_\_\_ X
2. Clean / ~~replace~~ Pump Valves: \_\_\_\_\_ ✓
3. Clean / ~~replace~~ Pump Diaphragms: \_\_\_\_\_ ✓
4. Clean Impaction Inlet: \_\_\_\_\_ ✓
5. Replace Timer Battery Every 6 months: \_\_\_\_\_ X
6. Replace Inlet Filter: \_\_\_\_\_ ✓

III. Remarks

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\_\_\_\_\_  
\_\_\_\_\_

**THE HONGKONG ELECTRIC CO., LTD.**  
**LAMMA POWER STATION EXTENSION**  
**TEOM 1400A CONTINUOUS DUST MONITOR**  
**DATA QUALITY ASSURANCE LOG SHEET**

Month: August Year: 2002

Reservoir (AM1)					
Date	Frequency (Hz) (260 – 280)	Noise (< 0.1)	Operation Mode (Mode 4)	Main Flow (l/min) (0.94 – 1.06)	Aux. Flow (l/min) (14.67 – 16.67)
3-8-02	261.77	0.046	4	1.00	15.67
4-8-02	261.62	0.064	4	1.00	15.67
15-8-02	261.32	0.047	4	1.00	15.67
21-8-02	261.42	0.034	4	1.00	15.67
27-8-02	263.22	0.023	4	1.00	15.67

East Gate (AM2)					
Date	Frequency (Hz) (230 – 250)	Noise (< 0.1)	Operation Mode (Mode 4)	Main Flow (l/min) (0.94 – 1.06)	Aux. Flow (l/min) (14.67 – 16.67)
3-8-02	243.34	0.033	4	1.00	15.65
9-8-02	245.17	0.039	4	1.00	15.65
15-8-02	243.54	0.056	4	1.00	15.65
21-8-02	244.92	0.055	4	0.99	15.66
27-8-02	244.72	0.063	4	1.00	15.65

Ash Lagoon (AM3)					
Date	Frequency (Hz) (230 – 250)	Noise (< 0.1)	Operation Mode (Mode 4)	Main Flow (l/min) (0.94 – 1.06)	Aux. Flow (l/min) (14.67 – 16.67)
3-8-02	246.89	0.037	4	0.99	15.64
9-8-02	246.77	0.034	4	1.00	15.64
15-8-02	246.73	0.044	4	1.00	15.63
21-8-02	246.64	0.028	4	0.99	15.63
27-8-02	246.55	0.033	4	0.99	15.65

Maintenance Record			
	Reservoir	East Gate	Ash Lagoon
TEOM Filter Exchange	✓	✓	✓
Clean TSP Inlet	✓	✓	✓
Replace flow in-line filter			
Pump Repair			
Leak Check			
Flow Audit			✓
Flow Controller Calibration			
A/C filter cleaning	✓	✓	✓

Remarks:

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Prepared by: Alex

Checked by: [Signature]

THE HONGKONG ELECTRIC CO., LTD.  
LAMMA POWER STATION EXTENSION  
NOISE MONITORING STATION  
SITE VISIT LOG SHEET

Location Ash Lagoon/~~Ching Lam~~\*

Date 16-8-2002 Time 16:00

Equipment Rion NA-27 Sound Level Meter

Serial Number 00111465/00111466/00111467\*

Staff Attended T.L. CHU , H.K. TSANG

1. Calibration

Acoustic calibrator used Rion NC-74

Calibration level before adjustment (dB(A)) 94.0

Calibration level after adjustment (dB(A)) 94

2. Weather Conditions

a. ~~Sunny/fine/cloudy/showery/heavy rain\*~~

b. ~~Strong wind/breeze/calm\*~~

3. Remark/Observation

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Note: \* - Please delete where inappropriate

THE HONGKONG ELECTRIC CO., LTD.  
LAMMA POWER STATION EXTENSION  
NOISE MONITORING STATION  
SITE VISIT LOG SHEET

Location Ash Lagoon/Ching Lam\*

Date 23-8-2002 Time 11:30

Equipment Rion <sup>NL-31</sup>~~NA-27~~ Sound Level Meter

Serial Number 00111465/00111466/00111467\* 00520658

Staff Attended T. L. CHU ; H. K. TSANG

1. Calibration

Acoustic calibrator used Rion NC-74

Calibration level before adjustment (dB(A)) 94.0

Calibration level after adjustment (dB(A)) 94

2. Weather Conditions

a. Sunny/~~fine~~/~~cloudy~~/~~showery~~/~~heavy rain~~\*

b. ~~Strong wind~~/~~breeze~~/~~calm~~\*

3. Remark/Observation

Rion NA-27 sound level meter temporarily replaced  
by Rion NL-31 sound level meter for noise monitoring

Note: \* - Please delete where inappropriate



### Equipment Calibration Record

Equipment No.	YSI-6920-1	Equipment Description	YSI 6920 Monitor
Calibration method reference	YSI Calibration Manual	Calibration equipment used (if any)	-

	pH	DO	Turbidity
Use of reference material (if any)	pH 7.00 & pH 10.00 Hach Buffer Standard	-	0 NTU & 100 NTU Formazin Turbidity Standard
Permissible tolerance of calibration	± 0.12 pH	± 5%	± 5%

#### Calibration Result

Date	Standard	pH		DO	Turbidity		Calibrated by
		7.00	10.00	100%	0	100	
2/8/02	Before	7.01	9.99	97.3	0.1	99.7	Tin
	After	6.98	9.98	98.4	0.3	100.4	Tin
5/8/02	Before	7.00	10.01	99.7	0.2	100.1	yan
	After	6.96	10.00	100.0	-0.1	99.2	yan
7/8/02	Before	6.98	9.97	98.6	0	98.7	yan
	After	7.02	9.98	99.8	0.4	100.2	yan
10/8/02	Before	6.99	10.02	98.2	0.2	101.3	Chung
	After	7.02	10.00	100.0	0.1	99.4	Chung
12/8/02	Before	7.00	9.97	98.1	0	100.0	Tin
	After	6.96	9.99	97.5	0.3	99.3	Tin
14/8/02	Before	6.98	10.01	100.0	-0.2	99.6	Tin
	After	7.02	10.00	98.4	0.1	101.4	Tin
16/8/02	Before	7.00	9.99	98.0	0.4	102.5	yan
	After	6.97	10.02	97.5	-0.3	100.8	yan
19/8/02	Before	7.01	10.00	99.6	0	98.9	Tin
	After	6.99	9.99	98.2	-0.2	100.7	Tin
21/8/02	Before	7.00	9.97	99.3	0.1	99.6	yan
	After	7.01	10.01	100.0	-0.1	102.3	yan
24/8/02	Before	6.97	10.03	99.7	0	97.4	Chung
	After	6.99	9.98	99.1	0.2	99.5	Chung
26/8/02	Before	6.98	9.98	100.0	-0.1	99.1	Tin
	After	7.01	10.01	97.8	0.3	100.6	Tin
28/8/02	Before	7.00	9.99	98.2	-0.2	100.2	yan
	After	6.99	10.00	99.5	0	99.8	yan
30/8/02	Before	6.98	10.02	99.4	0	99.9	Tin
	After	6.97	9.97	100.0	-0.2	100.7	Tin
	Before						
	After						

Approved by: Chung

Date: 6/9/2002

SUMMARY OF QUALITY CONTROL DATA – QC SAMPLES RESULTS

Parameter	Control Limit	QC ID	Measured Value	QC ID	Measured Value	QC ID	Measured Value	QC ID	Measured Value	QC ID	Measured Value	QC ID	Measured Value	QC ID	Measured Value
Suspended Solids mg/L	8.9 – 10.3	P0208A21	9.7	P0208A43	9.8	P0208A65	9.6	P0208A87	9.6	P0208B21	9.5	P0208B43	9.8	P0208B65	9.9
		P0208B87	9.7	P0208C21	9.6	P0208C43	9.5	P0208C65	9.7	P0208C87	9.9	P0208D21	9.5	P0208D43	9.7
		P0208D65	9.7	P0208D87	9.6	P0208E21	9.7	P0208E43	9.8	P0208E65	9.9	P0208E87	9.5	P0208F21	9.6
		P0208F43	9.7	P0208F65	9.5	P0208F87	9.6	P0208G21	9.6	P0208G43	9.7	P0208G65	9.5	P0208G87	9.6
		P0208H21	9.6	P0208H43	9.7	P0208H65	9.6	P0208H87	9.8	P0208I21	9.3	P0208I43	9.5	P0208I65	9.3
		P0208I87	9.4	P0208J21	9.5	P0208J43	9.4	P0208J65	9.3	P0208J87	9.4	P0208K21	9.2	P0208K43	9.4
		P0208K65	9.5	P0208K87	9.3	P0208L21	9.4	P0208L43	9.3	P0208L65	9.5	P0208L87	9.4	P0208M21	9.3
		P0208M43	9.5	P0208M65	9.4	P0208M87	9.3								

Total:52

SUMMARY OF QUALITY CONTROL DATA – BLANK RESULTS

Parameter	Control Limit	Blank ID	Measured Value	Blank ID	Measured Value	Blank ID	Measured Value	Blank ID	Measured Value	Blank ID	Measured Value	Blank ID	Measured Value	Blank ID	Measured Value
Suspended Solids mg/L	<1	P0208A22	<1	P0208A44	<1	P0208A66	<1	P0208A88	<1	P0208B22	<1	P0208B44	<1	P0208B66	<1
		P0208B88	<1	P0208C22	<1	P0208C44	<1	P0208C66	<1	P0208C88	<1	P0208D22	<1	P0208D44	<1
		P0208D66	<1	P0208D88	<1	P0208E22	<1	P0208E44	<1	P0208E66	<1	P0208E88	<1	P0208F22	<1
		P0208F44	<1	P0208F66	<1	P0208F88	<1	P0208G22	<1	P0208G44	<1	P0208G66	<1	P0208G88	<1
		P0208H22	<1	P0208H44	<1	P0208H66	<1	P0208H88	<1	P0208I22	<1	P0208I44	<1	P0208I66	<1
		P0208I88	<1	P0208J22	<1	P0208J44	<1	P0208J66	<1	P0208J88	<1	P0208K22	<1	P0208K44	<1
		P0208K66	<1	P0208K88	<1	P0208L22	<1	P0208L44	<1	P0208L66	<1	P0208L88	<1	P0208M22	<1
		P0208M44	<1	P0208M66	<1	P0208M88	<1								

Total:52

SUMMARY OF QUALITY CONTROL DATA – DUPLICATE RESULTS

Parameter	Control Limit	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value
Suspended Solids mg/L	Exceed 20%	P0208A19	8.9	P0208A41	8.7	P0208A63	9.4	P0208A85	10.3	P0208B19	11.2	P0208B41	8.8	P0208B63	9.2
			9.1		8.5		9.1		10.0		10.9		9.1		9.7
		P0208B85	10.4	P0208C19	9.3	P0208C41	10.4	P0208C63	8.6	P0208C85	10.6	P0208D19	8.7	P0208D41	7.2
			10.1		9.0		10.0		8.9		10.1		8.3		7.4
		P0208D63	10.8	P0208D85	9.4	P0208E19	11.0	P0208E41	9.9	P0208E63	10.3	P0208E85	9.7	P0208F19	9.8
			11.1		9.9		11.5		9.5		10.5		9.3		10.2
		P0208F41	9.7	P0208F63	9.3	P0208F85	9.4	P0208G19	9.9	P0208G41	10.2	P0208G63	10.7	P0208G85	9.3
			10.1		9.7		9.8		10.2		10.4		10.4		9.1
		P0208H19	11.1	P0208H41	9.3	P0208H63	7.4	P0208H85	8.9	P0208I19	10.7	P0208I41	7.9	P0208I63	10.2
			10.8		9.7		7.6		8.7		10.3		7.5		10.6
		P0208I85	8.7	P0208J19	9.3	P0208J41	10.3	P0208J63	9.4	P0208J85	8.3	P0208K19	8.2	P0208K41	7.9
			8.4		9.5		10.5		9.8		8.5		8.4		7.6
		P0208K63	9.5	P0208K85	8.9	P0208L19	9.2	P0208L41	8.1	P0208L63	8.9	P0208L85	8.7	P0208M19	8.5
			9.9		9.2		9.4		7.8		9.1		8.9		8.9
		P0208M41	9.3	P0208M63	9.2	P0208M85	8.6								
			9.6		9.4		8.8								

Total:52

## SUMMARY OF QUALITY CONTROL DATA – BLIND DUPLICATE RESULTS

Parameter	Control Limit	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value	Sample ID	Measured Value
Suspended Solids mg/L	Exceed 20%	P0208A10	8.6	P0208A20	9.1	P0208A32	7.2	P0208A42	7.3	P0208A54	7.6	P0208A64	7.4	P0208A76	8.7	P0208A86	8.6	P0208B10	7.3	P0208B20	9.7	P0208B32	8.4	P0208B42	10.2
			8.9		9.4		7.6		7.6		7.9		7.9		8.4		8.2		8.2		9.3		8.9		10.6
		P0208B54	7.9	P0208B64	8.3	P0208B76	10.3	P0208B86	11.2	P0208C10	7.7	P0208C20	7.2	P0208C32	11.2	P0208C42	7.9	P0208C54	10.2	P0208C64	9.4	P0208C76	11.2	P0208C86	7.9
			7.6		8.8		10.0		11.4		7.3		7.6		11.5		8.2		10.6		9.8		11.5		8.2
		P0208D10	7.0	P0208D20	6.5	P0208D32	10.2	P0208D42	8.4	P0208D54	9.2	P0208D64	8.7	P0208D76	8.0	P0208D86	7.6	P0208E10	7.2	P0208E20	8.7	P0208E32	10.1	P0208E42	6.8
			7.4		6.0		10.6		8.1		9.7		9.2		8.4		7.9		7.6		9.0		10.4		7.2
		P0208E54	9.6	P0208E64	9.2	P0208E76	10.5	P0208E86	7.6	P0208F10	9.2	P0208F20	7.2	P0208F32	10.4	P0208F42	8.3	P0208F54	10.9	P0208F64	8.6	P0208F76	10.2	P0208F86	7.2
			10.1		9.5		10.3		7.9		9.6		7.7		10.9		8.8		11.2		8.9		10.6		7.6
		P0208G10	9.4	P0208G20	7.3	P0208G32	8.4	P0208G42	8.5	P0208G54	10.6	P0208G64	8.2	P0208G76	7.2	P0208G86	8.7	P0208H10	8.3	P0208H20	8.7	P0208H32	9.3	P0208H42	7.2
			9.1		7.8		8.9		8.9		10.2		8.6		7.7		8.3		8.7		8.4		8.9		7.7
		P0208H54	9.6	P0208H64	6.8	P0208H76	7.2	P0208H86	6.7	P0208I10	8.8	P0208I20	9.4	P0208I32	7.1	P0208I42	6.4	P0208I54	9.5	P0208I64	8.0	P0208I76	7.3	P0208I86	7.9
			10.1		7.0		7.6		6.3		9.1		9.2		7.4		6.7		9.1		8.3		7.8		8.2
		P0208J10	8.7	P0208J20	7.4	P0208J32	7.6	P0208J42	8.2	P0208J54	10.2	P0208J64	7.8	P0208J76	8.2	P0208J86	6.3	P0208K10	9.8	P0208K20	7.6	P0208K32	9.7	P0208K42	6.8
			8.2		7.8		7.2		8.6		10.4		8.1		8.7		6.5		10.3		7.9		10.1		6.4
		P0208K54	8.3	P0208K64	8.4	P0208K76	7.6	P0208K86	8.2	P0208L10	7.4	P0208L20	8.3	P0208L32	7.3	P0208L42	6.6	P0208L54	9.2	P0208L64	7.3	P0208L76	7.4	P0208L86	7.2
			8.7		8.1		8.0		8.6		7.8		8.5		7.6		6.9		9.6		7.7		7.8		6.9
		P0208M10	8.6	P0208M20	7.8	P0208M32	8.1	P0208M42	6.8	P0208M54	7.6	P0208M64	7.9	P0208M76	8.1	P0208M86	7.2								
			8.2		7.7		8.5		7.2		7.2		8.1		7.9		7.8								

Total:104