

Appendix G

The QA/QC Procedures and Results

HIGH VOLUME AIR SAMPLER
SITE VISIT LOG SHEET

Site Name: RE Site No.: AM1
 Date of visit: 18/4/2002 Hour of Visit: 10:40
 Staff name: K.F. Chan, H.K. Tsang HVAS S/N: 2198
 Used filter paper no.: L056 New filter paper no.: L058
 Type of filter: Glass-fibre

I. Ambient Conditions

Temperature, $T_a = 25.3 + 273$ K Pressure, $P_a = 1011$ mb

II. Correction of manometer reading

Calibration orifice No.	Manometer reading (ΔH_{STD}) corresponds to $Q_{STD} = 40 \text{ ft}^3/\text{min}$.	Manometer reading at site conditions
EV08B01	5.1 (4/01)	$\Delta H_a = 1.500(P_a/T_a) = \underline{\hspace{2cm}}$
✓ EV08B02	5.0 (3/01)	$\Delta H_a = 1.471(P_a/T_a) = \underline{4.99}$

Manometer reading before calibration: 5.2

Adjustment of flow controller (Y/N): Y

Manometer reading after calibration: 5.0

Note: Manometer reading corrected to ambient conditions: $\Delta H_a = \Delta H_{STD}(P_a/P_{STD})(T_{STD}/T_a)$

III. General Conditions of HVAS

IV. Remarks

HIGH VOLUME AIR SAMPLER
SITE VISIT LOG SHEET

Site Name: E.G. Site No.: AM2
 Date of visit: 18/4/2002 Hour of Visit: 10:10
 Staff name: K.F.Chan HVAS S/N: 2195
 Used filter paper no.: L057 New filter paper no.: L059
 Type of filter: Glass-fibre

I. Ambient Conditions

Temperature, $T_a = 25 + 273$ K Pressure, $P_a = 1015$ mb

II. Correction of manometer reading

Calibration orifice No.	Manometer reading (ΔH_{STD}) corresponds to $Q_{STD} = 40 \text{ ft}^3/\text{min}$.	Manometer reading at site conditions
EV08B01	5.1 (4/01)	$\Delta H_a = 1.500(P_a/T_a) = \underline{\hspace{2cm}}$
✓ EV08B02	5.0 (3/01)	$\Delta H_a = 1.471(P_a/T_a) = \underline{5.0}$

Manometer reading before calibration: 5.3

Adjustment of flow controller (Y/N): Y

Manometer reading after calibration: 5.0

Note: Manometer reading corrected to ambient conditions: $\Delta H_a = \Delta H_{STD}(P_a/P_{STD})(T_{STD}/T_a)$

III. General Conditions of HVAS

IV. Remarks

PARTISOL TSP SAMPLER
SITE VISIT LOG SHEET

Site Name Ash Lapoon Site Number AM3
Date of Visit 18/4/2002 Hour of Visit 11:20
Staff Name K.F. Chan, H.K. Tsang Partisol S/N: 2000B201500001
Used Filter No.: PA68 New Filter No.: PA69
Ambient temperature: 26.3 Ambient pressure: 1014

I. General Services

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

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

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

25.3 °C Calibration: X/N _____ °C
Before After

2. Pressure Check (Ambient pressure ± 20 mbar)(factor = 0.000987)

1001 mbar Calibration: X/N _____ mbar
Before After

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

16.7 cc/min Calibration: X/N _____ cc/min
Before After

III. Remarks

MINI VOLUME AIR SAMPLER
SITE VISIT LOG SHEET

Site Name: T. Y. V. Site No.: AM4
Date of visit: 18/4/2002 Hour of Visit: 10:00
Staff name: H. K. Tsang MINIVOL S/N: 2050
Used filter paper no.: MF31 New filter paper no.: MF32
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

4980 Before 5004 After

II. General Service of Mini Vol Air Sampler

1. Clean Rotameter: ✓
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

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

Month : APRIL

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)
5-4-02	260.88	0.019	4	1.00	15.65
11-4-02	259.92	0.038	4	1.00	15.65
17-4-02	261.54	0.032	4	1.00	15.65
23-4-02	261.33	0.032	4	1.00	15.65
29-4-02	261.18	0.027	4	1.00	15.65

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)
5-4-02	244.97	0.032	4	1.00	15.64
11-4-02	244.79	0.027	4	1.00	15.64
17-4-02	244.58	0.043	4	0.99	15.65
23-4-02	245.14	0.035	4	1.00	15.66
29-4-02	244.98	0.029	4	0.99	15.64

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)
5-4-02	244.80	0.045	4	1.00	15.64
11-4-02	246.41	0.030	4	1.00	15.64
17-4-02	246.21	0.034	4	0.99	15.64
23-4-02	246.06	0.035	4	0.99	15.64
29-4-02	245.97	0.032	4	0.99	15.64

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:

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 12-4-2002 Time 10.38

Equipment Rion NA-27 Sound Level Meter

Serial Number 00111465/00111466/00111467*

Staff Attended W.L. MAK, H.K. TSANG

1. Calibration

Acoustic calibrator used Rion NC-74

Calibration level before adjustment (dB(A)) 93.8

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

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 16-4-2002 Time 11:10

Equipment Rion NA-27 Sound Level Meter

Serial Number 00111465/00111466/00111467*

Staff Attended W.L. CHOK, 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

Note: * - Please delete where inappropriate

Equipment Calibration Record

Site: Lamma Power Station Extension – Transmission System Construction

Noise Equipment Used: Rion NL-14 sound level meter

Calibrator Used: B&K 4231 sound level calibrator

Measurement Location: N4 – Pak Kok Tsui No. 2

Date	Calibration Level before Measurement (dB(A))	Calibration Level after Measurement (dB(A))	Calibrated by
02/04/2002	94.0	94.0	T. M. Fung
04/04/2002	94.0	94.0	T. M. Fung
08/04/2002	94.0	94.0	M. S. Kong
10/04/2002	94.0	94.0	T. M. Fung
15/04/2002	94.0	94.0	T. M. Fung
19/04/2002	94.0	94.0	T. M. Chan
23/04/2002	94.0	94.0	T. M. Fung
25/04/2002	94.0	94.0	T. M. Chan
29/04/2002	94.0	94.0	M. S. Kong

Measurement Location: N5 – Pak Kok Tsui No. 8

Date	Calibration Level before Measurement (dB(A))	Calibration Level after Measurement (dB(A))	Calibrated by
02/04/2002	94.0	94.0	M. S. Kong
04/04/2002	94.0	94.0	M. S. Kong
08/04/2002	94.0	94.0	Franky Wong
10/04/2002	94.0	94.0	M. S. Kong
15/04/2002	94.0	94.0	M. S. Kong
19/04/2002	94.0	94.0	M. S. Kong
23/04/2002	94.0	94.0	M. S. Kong
25/04/2002	94.0	94.0	M. S. Kong
29/04/2002	94.0	94.0	M. S. Kong

Note: Measurement accepted as valid only if the calibration levels from before and after the noise measurement agreed to within 1.0 dB.



Approved by: DANIEL SUM

Date: 30/04/2002

Equipment Calibration Record

Equipment No.	CM-ESG-022	Equipment description	YSI 6820 Multi-parameter Water Quality Monitor
Calibration method reference	OD-ESG-075	Calibration equipment used (if any)	-

	pH	DO	Turbidity
Use of Reference material (if any)	pH 6.86 & 10.01 buffer RM ESG-006 RM ESG-007	-	0 NTU & 200 NTU RM-ESG-0002 RM-ESG-0003
Permissible tolerance of calibration	± 0.12 pH	±5%	±5%

Calibration Result

Date	Standard	pH		DO	Turbidity		Calibrated by
		6.86	10.01	100%	0	200	
2/4/02	Before	6.84	10.02	98.6%	2.1	203.5	i
	After	6.86	10.01	100%	0.0	200.0	
4/4/02	Before	6.83	9.95	103.2	1.6	202.4	i
	After	6.86	10.01	100.0	0.0	200.0	
6/4/02	Before	6.82	10.07	101.2	2.4	201.6	i
	After	6.86	10.01	100.0	0.0	200.0	
8/14/02	Before	6.84	10.22	98.2	0.7	202.6	Frank
	After	6.86	10.01	100.0	0.0	200.0	
10/4/02	Before	6.85	10.00	97.6	1.2	201.5	i
	After	6.86	10.01	100.0	0.0	200.0	
12/4/02	Before	6.89	9.99	102.0	0.6	101.1	i
	After	6.86	10.01	100.0	0.0	100.0	
15/4/02	Before	6.87	10.10	101.3	1.2	202.4	i
	After	6.86	10.01	100.0	0.0	200.0	
17/4/02	Before	6.86	10.08	101.2	0.8	201.3	Tullu
	After	6.86	10.01	100.0	0.0	200.0	
19/4/02	Before	6.90	10.05	108.1	0.5	200.8	Tullu
	After	6.86	10.01	100.0	0.0	200.0	
23/4/02	Before	6.91	10.04	99.6	0.7	201.1	i
	After	6.86	10.01	100.0	0.0	200.0	
25/4/02	Before	6.80	10.05	93.5	0.1	203.8	Tullu
	After	6.86	10.01	100.0	0.0	200.0	
27/4/02	Before	6.85	10.00	98.6	0.1	201.4	i
	After	6.86	10.01	100.0	0.0	200.0	
30/4/02	Before	6.83	9.97	99.4	0.7	200.6	i
	After	6.86	10.01	100.0	0.0	200.0	
	Before						i
	After						

Approved by EMC: _____

Date: 3/14/0 ✓

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
Suspended Solids mg/L	8.9 - 10.3	QC0204503	10.0	QC0204108	10.2	QC0204114	9.1	QC0204016	9.8	QC0204020	9.9	QC0204329	10.0
		QC0204603	9.6	QC0204208	9.3	QC0204214	10.0	QC0204116	9.9	QC0204120	9.4	QC0204126	9.9
		QC0204703	9.7	QC0204408	9.8	QC0204314	10.2	QC0204216	9.5	QC0204320	9.5	QC0204326	9.4
		QC0204803	9.9	QC0204508	9.8	QC0204414	9.9	QC0204316	9.9	QC0204220	9.4	QC0204426	9.6
		QC0204306	9.3	QC0204009	9.6	QC0204013	9.7	QC0204018	9.4	QC0204024	10.1	QC0204029	9.8
		QC0204406	9.5	QC0204109	9.8	QC0204113	9.6	QC0204118	9.7	QC0204124	9.8	QC0204129	9.3
		QC0204506	9.8	QC0204209	9.6	QC0204213	9.8	QC0204218	9.5	QC0204224	9.5	QC0204229	9.6
		QC0204606	9.7	QC0204309	9.7	QC0204313	9.6	QC0204318	9.1	QC0204324	10.0		

Total: 47

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
Suspended Solids mg/L	< 1	BK0204503	<1	BK0204108	<1	BK0204114	<1	BK0204016	<1	BK0204020	<1	BK0204329	<1
		BK0204603	<1	BK0204208	<1	BK0204214	<1	BK0204116	<1	BK0204120	<1	BK0204126	<1
		BK0204703	<1	BK0204408	<1	BK0204314	<1	BK0204216	<1	BK0204320	<1	BK0204326	<1
		BK0204803	<1	BK0204508	<1	BK0204414	<1	BK0204316	<1	BK0204220	<1	BK0204426	<1
		BK0204306	<1	BK0204009	<1	BK0204013	<1	BK0204018	<1	BK0204024	<1	BK0204029	<1
		BK0204406	<1	BK0204109	<1	BK0204113	<1	BK0204118	<1	BK0204124	<1	BK0204129	<1
		BK0204506	<1	BK0204209	<1	BK0204213	<1	BK0204218	<1	BK0204224	<1	BK0204229	<1
		BK0204606	<1	BK0204309	<1	BK0204313	<1	BK0204318	<1	BK0204324	<1		

Total: 47

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
Suspended Solids mg/L	exceed 20%		4.7		3.3		3.4		3.1		6.4		8.8
		WC0205832	5.3	WC0206163	3.1	WC0206393	3.4	WC0206661	2.9	WC0206857	6.6	WC0207296	8.4
			11.6		3.4		7.3		8.5		4.0		5.3
		WC0205847	12.2	WC0206178	3.2	WC0206408	7.9	WC0206676	7.9	WC0206873	3.8	WC0207311	4.5
			5.4		11.1		4.6		4.4		5.2		4.5
		WC0205868	5.6	WC0206199	10.5	WC0206429	4.8	WC0206697	4.4	WC0206893	4.4	WC0207332	4.3
			5.5		10.6		9.3		4.7		3.0		2.7
		WC0205883	5.9	WC0206214	10.0	WC0206444	9.1	WC0206712	5.3	WC0206908	3.2	WC0207347	2.9
			5.0		4.6		9.3		2.6		3.1		6.4
		WC0206071	5.6	WC0206249	4.6	WC0207482	9.7	WC0206751	3.0	WC0207142	3.1	WC0207431	6.4
			9.5		8.0		5.0		5.3		4.2		3.9
		WC0206086	9.7	WC0206264	7.6	WC0206531	6.2	WC0206766	5.9	WC0207157	4.4	WC0207446	4.1
			4.2		5.8		5.2		4.0		4.4		6.2
		WC0206107	5.2	WC0206285	5.2	WC0206552	5.2	WC0206787	3.6	WC0207178	4.6	WC0207467	6.4
			3.9		5.9		5.0		2.7		5.5		
		WC0206120	3.7	WC0206300	5.1	WC0206567	5.4	WC0206802	3.1	WC0207193	5.1		

Total: 47

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%	WC0205892	7.7	WC0206131	3.1	WC0206223	11.0	WC0206309	5.9	WC0206453	6.9	WC0206576	5.8	WC0206721	3.7	WC0206811	6.5	WC0206917	5.6	WC0207202	5.3	WC0207356	5.9	WC0207491	7.1			
			7.7		3.2		10.8		6.2		7.2		5.8		3.5		6.2		5.4		5.9		5.8		7.6			
			5.5		4.4		12.4		4.7		8.9		8.0		3.5		6.3		7.8		7.5		5.7		7.1		7.2	
		WC0205893	5.5	WC0206132	5.0	WC0206224	12.3	WC0206310	4.6	WC0206454	9.4	WC0206577	8.4	WC0206722	3.9	WC0206812	6.4	WC0206918	8.0	WC0207203	7.3	WC0207355	5.9	WC0207492	7.2			
			4.3		3.4		6.6		4.3		8.1		6.2		6.5		7.5		3.4		3.9		6.1		6.3			
		WC0205894	4.1	WC0206133	3.6	WC0206225	6.2	WC0206311	4.0	WC0206455	7.9	WC0206578	6.4	WC0206723	7.1	WC0206813	7.9	WC0206919	3.4	WC0207204	3.5	WC0207498	5.9	WC0207493	6.7			
			12.7		3.6		7.2		8.9		7.1		7.6		2.9		5.9		7.6		4.9		8.3		9.5			
		WC0205895	11.9	WC0206134	3.5	WC0206226	7.2	WC0206312	8.8	WC0206456	6.9	WC0206579	7.2	WC0206724	2.9	WC0206814	7.3	WC0206920	7.8	WC0207205	4.3	WC0207359	7.7	WC0207494	10.1			
			9.1		8.6		5.6		7.1		7.1		4.8		4.3		6.1		11.0		7.7		5.5		11.9			
		WC0205896	9.0	WC0206135	8.2	WC0206227	7.0	WC0206313	6.6	WC0206457	6.6	WC0206580	4.6	WC0206725	4.6	WC0206815	6.0	WC0206921	10.8	WC0207206	7.4	WC0207360	5.5	WC0207495	11.5			
			4.7		4.4		3.8		5.3		6.1		7.0		4.1		8.1		3.6		7.7		6.5		8.3			
		WC0205897	4.4	WC0206136	4.4	WC0206228	3.9	WC0206314	5.5	WC0206458	6.0	WC0206581	7.3	WC0206726	4.0	WC0206816	6.8	WC0206922	3.8	WC0207207	7.2	WC0207361	6.9	WC0207496	8.0			
			10.7		4.8		5.8		3.7		6.3		6.0		4.3		5.5		5.6		4.9		8.7					
		WC0205898	11.4	WC0206137	4.9	WC0206229	5.9	WC0206315	3.8	WC0206459	6.8	WC0206582	6.3	WC0206727	4.1	WC0206817	4.7	WC0206923	5.2	WC0207208	5.2	WC0207362	8.9					
			5.7		5.2		5.9		4.5		6.7		8.8		3.7		9.1		3.8		5.3		3.7					
		WC0205899	5.7	WC0206138	4.9	WC0207634	5.8	WC0206316	4.7	WC0206460	7.1	WC0206583	8.2	WC0206728	3.7	WC0207497	9.4	WC0206924	3.8	WC0207209	5.3	WC0207363	3.7					

Total: 94