

BIL	Quotation Reference	Description	Advertisement Date	Closing Date (Not Later Than 02.00PM)	Quotation Fee	Requesting Department	Focal Person
2	(207) PSD/QTN/2023/ESTET – (MOH)	<p><b>THE PROVISION OF MAINTENANCE SERVICES FOR FUME CUPBOARDS UNDER MINISTRY OF HEALTH FPR APERIOD OF SIX (6) MONTHS</b></p> <p><u>PLACE OF SUBMISSION:</u>            QUOTATION BOX (GROUND FLOOR)            MINISTRY OF HEALTH            COMMONWEALTH DRIVE            BANDAR SERI BEGAWAN, BB 3910            NEGARA BRUNEI DARUSSALAM</p>	02/12/2023	23/12/2023	\$5.00	BAHAGIAN PENGURUSAN ESTET DAN PERKEMBANGAN PROJEK KEMENTERIAN KESIHATAN.	MD SHAHRIN BIN HAJI SHARBINI  PMK PENOLONG PENGARAH KEMAJUAN PROJEK  TEL: 2381640 ext. 7924 / 7926

## TERMS AND CONDITIONS OF TENDERING ( FOR QUOTATION WORKS )

1. Before tendering, the tenderer shall visit the site where the Works are to be carried out and shall also carefully examine the relevant Terms and Conditions of Contract, Drawings, Specification and all other accompanying schedules, etc.

If there is any ambiguity in or discrepancy between any of the documents, he / she should refer the matter to the **AWG. MD YUSSOF HJ ABDULLAH** or, **ESTATE MAINTENANCE SECTION, MINISTRY OF HEALTH [ TEL: 2381640 EXT 7924/7926 ]**

On tendering, the tenderer shall be deemed to have examined the documents referred to above and shall be bound by the terms and conditions therein.

2. Every tenderer must submit together all documents listed below and this requirement shall be strictly adhered to prior to any consideration :-
  - (a) Valid Tenderer's Registration Certificate from the Ministry of Health, Business Certificate Of Registration (Section 16 & 17) especially on Medical, Hospital, Scientific and Dentistry Equipment.
  - (b) Business Enactment Act Section 16 & 17.
  - (c) While for prospective vendors / suppliers of medicines and drugs bids must possess a valid Poison License as stated in the 'Poison Act' (Cap. 114).
  - (d) The Tender Form **MUST be signed by the Owner, or the Director of Shareholder(s) of the Company** stating their post and stamped with the Company's Official seal as detailed in the Business Enactment Act Section 16 & 17 / or the tenderer's Registration Certificate from the Ministry of Health and/or Ministry of Development.
  - (e) The address indicated must be detailed as in the Business Enactment Act Section 16 & 17 / and/or Tenderer's Registration Certificate from the Ministry of Health and/or Ministry Of Development. Any changes to the above must be officially referred to the Registrar of Companies and Business Names and a copy must be submitted to this department.

Tender documents must be duly completed, signed and dated. Any tender which is incomplete or unsigned will render the tender to be rejected.

3.
  - (a) Tenders and documents in connection therewith as specified above , must be delivered to the place at or before the time specified.
  - (b) In the case of the tender not being delivered by hand, the tenderer must arrange for his / her tender and other documents to be posted in time to reach the stipulated place by not later than the time stated.
  - (c) In no case will the Government be responsible for any expense or loss incurred by a tenderer in the preparation of this tender.

Tenders shall remain valid for **6 MONTHS** from the final date for submission of the tenders and no tenderer may withdraw his/her tender within that period. The Government reserves the right to extend this period if deemed necessary provided that such extension of the tender validity period shall have the written consent of the tenderers.

4. The Government does not bind itself to accept the lowest and/or any tender and no reason will be given for rejecting any tender thereof.
5. Every correspondence to be given to a tenderer may be posted to the tenderer's address in the tender and such posting shall be deemed good and legally binding in service of such correspondence.
6. The tender shall be made on the basis of the rates in the tender documents being firm and not subject to any adjustment with variations in quantities.
7. The tender fee shall be **B\$ 5.00 [FIVE DOLLAR ONLY]**
8. No unauthorised alteration or use of 'correction pen' in the tender documents is allowed, or the tender may be rejected. Any errors are to be struck off and initialled.
9. Non-compliance with the above terms and conditions in any respect may render the tender liable to be rejected.
10. The tender documents and forms are available from the **PURCHASING AND PROCUREMENT AND PROCUREMENT SECTION, MINISTRY OF HEALTH.**

The completed tender documents are to be lodged on or before **2.00 PM** on **SATURDAY** in a sealed enveloped addressed to :-

**TENDER/ QUOTATION (QTN) BOX**

**PENGERUSI SEBUTHARGA  
TIGKAT BAWAH  
KEMENTERIAN KESIHATAN  
JALAN COMMONWEALTH DRIVE  
NEGARA BRUNEI DARUSSALAM**

The top part of the sealed envelope must be written stating the following :-

Quotation No. : \_\_\_\_\_ Quotation Closing Date : \_\_\_\_\_

Project Title : **THE PROVISION OF MAINTENANCE SERVICES FOR FUME CUPBOARDS UNDER  
MINISTRY OF HEALTH FOR A PERIOD OF SIX (6) MONTHS**

\* Delete As Necessary



<b>A</b>	<input type="checkbox"/>	1. _____
	<input type="checkbox"/>	2. _____
	<input type="checkbox"/>	3. _____
<b>FOR OFFICIAL USE ONLY</b>		

Quotation For : **THE PROVISION OF MAINTENANCE SERVICES FOR FUME CUPBOARDS UNDER MINISTRY OF HEALTH FOR A PERIOD OF SIX (6) MONTHS**

Quotation No. : \_\_\_\_\_ Closed On : \_\_\_\_\_ Receipt No. : \_\_\_\_\_

**PART A - AGREEMENT**

1.0 On behalf of \_\_\_\_\_ I, the undersigned, agree to carry out the above Works / Service / Supply \* for a sum of B\$ \_\_\_\_\_ (Brunei Dollars \_\_\_\_\_)

(or),

At Schedule of Rates attached subject to the adjustment percentage of an additional (+) / a deduction (-)\* \_\_\_\_\_ % with an approximate Maximum Contract Sum as stated in PART C - APPENDIX Item 6.0.

And,

within the Contract Period of **SIX (6) Months** Days / Weeks / Months \* in accordance with the terms and conditions below.

2.0 Owner / Director \* 's : \_\_\_\_\_  
Signature & Name ( \_\_\_\_\_ )  
IC No. : \_\_\_\_\_

2.1 Signature & Name of : \_\_\_\_\_  
Witness ( \_\_\_\_\_ )  
IC No. : \_\_\_\_\_

2.2 Company Address : \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

<b>B</b>
Company Stamp

2.3 Tel. No. : \_\_\_\_\_ Fax No. : \_\_\_\_\_ E-mail : \_\_\_\_\_

2.4 Date : \_\_\_\_\_

**ACCEPTANCE OF CONTRACT (FOR OFFICIAL USE ONLY)**

3.0 On behalf of the Brunei Government, I accept your offer to carry out all / items \* \_\_\_\_\_ of the above for a sum of B\$ \_\_\_\_\_ (Brunei Dollars \_\_\_\_\_)

or

At Schedule of Rates attached subject to the adjustment percentage of an additional (+) / a deduction (-)\* \_\_\_\_\_ % with an approximate Maximum Contract Sum as stated in PART C - APPENDIX Item 6.0.

And,

within the Contract Period of **(SIX) 6 Months** Days / Weeks / Months \* in accordance with the terms and conditions below.

4.0 \_\_\_\_\_  
( \_\_\_\_\_ )

4.1

4.2 Signature & Name : \_\_\_\_\_  
of witness ( \_\_\_\_\_ )

4.3 Address : \_\_\_\_\_

4.4 Tel. No. : \_\_\_\_\_ Fax No. : \_\_\_\_\_ E-mail : \_\_\_\_\_

4.5 Date of Contract : \_\_\_\_\_ Approval No. : \_\_\_\_\_

4.6 The Superintending Officer is : \_\_\_\_\_

4.7 The Starting Date is on : \_\_\_\_\_

**Note :** An asterisk \* indicates text that is to be deleted as appropriate

<b>C</b>
Department Stamp

## **PART B - TERMS OF QUOTATION**

### **1.0. BASIS OF QUOTATION, OVERALL OBLIGATIONS AND ADMINISTRATION**

#### **1.1 Overall Obligations of the Government:**

- 1.1.1 To provide access at proper times for the Contractor to do his Works.
- 1.1.2 To provide all information and facilities stated in this Contract to enable the Contractor to do his Works.
- 1.1.3 To pay the Contractor as provided in this Contract.
- 1.1.4 To assign a Superintending Officer to administer this Contract.
- 1.1.5 May take out or renew collateral warranty and insurance as referred to in Clause 1.2.3 and Clause 1.2.4 below if the Contractor fails to do so.

#### **1.2 Overall Obligations of the Contractor:**

- 1.2.1 To finish the Works to the quality standards provided in this Contract within the Completion Date(s) and Contract Period provided in this Contract.
- 1.2.2 To cooperate with all other Contractors working on the project and not to disrupt them or cause damage to their Works.
- 1.2.3 To provide a collateral warranty containing a similar obligation as under this Contract directly to a third party if requested by the Superintending Officer.
- 1.2.4 To provide and maintain valid Contractor's all risks insurance policy at all times.

#### **1.3 Instructions, Certifications & Job Orders**

- 1.3.1 The Superintending Officer can issue instructions and certifications including Job Orders to the Contractor on anything relating to the Works.
- 1.3.2 All instructions, certifications and Job Orders must be in writing, dated and clearly identified as Superintending Officer's Instructions, Certifications and Job Orders.
- 1.3.3 For each Job Order, the Superintending Officer must state a commencement date and a reasonable date for its completion and the Contractor must complete each Job Order by that completion date.
- 1.3.4 The minimum and maximum of any one Job Order to be issued as stated in the Appendix Item 5.0 and the maximum to be issued must be capable of being carried out and completed within the Contract Period.
- 1.3.5 The Contractor must comply with all instructions, certifications and Job Orders issued by the Superintending Officer.
- 1.3.6 The Superintending Officer may arrange others to complete the Works if the Contractor fails to comply with Clause 1.3.5, and the Contractor shall pay for all extra costs incurred.

### **2.0. QUALITY, HEALTH, SAFETY AND ENVIRONMENT**

#### **2.1 Quality**

- 2.1.1 The Contractor must do his Works based on the documents referred to in this Contract and other instructions and information given to him by the Superintending Officer.
- 2.1.2 If any of the Works is not done according to this Contract or if there is any other breach of this Contract by the Contractor, the Superintending Officer shall inform the Contractor of the shortfall(s) in writing. The Contractor must rectify the shortfall(s).
- 2.1.3 If the Contractor does not rectify the shortfall(s), the Superintending Officer may arrange others to rectify the shortfall(s). The Superintending Officer can also certify either:
  - (a) The cost of rectifying such shortfall(s); or
  - (b) The reduced value of the completed Works due to such shortfall(s)as provided in the Payment Certification Clause.
- 2.1.4 The Superintending Officer can continue to do this throughout the project and during the Defects Liability Period (as stated in the Appendix Item No. 3.0) after the Superintending Officer confirms the Works is complete as provided in the Completion Clause.

#### **2.2 Health, Safety And Environment**

- 2.2.1 The Contractor must keep the site clean and safe at all times.
- 2.2.2 The Contractor must comply with all laws and regulations relating to Health, Safety and Environment Act, if any.

### **3.0. TIME OBLIGATIONS**

#### **3.1 Starting, Progress and Finishing**

- 3.1.1 If not stated in this Contract, the Superintending Officer will inform the Contractor when to start work in writing. The Contractor shall not be entitled to claim for any loss or damage caused by any delay of possession of site.
- 3.1.2 The Contractor must progress with the Works in a regular and diligent manner.

- 3.1.3 The Superintending Officer can instruct the Contractor to stop and restart at any time.
- 3.1.4 The Contractor must finish all the Works within the Completion Date(s) stated in this Contract or as instructed by the Superintending Officer.

### **3.2 Adjusting Time for Completion**

- 3.2.1 If the Government or Superintending Officer or anyone within either of their responsibility or control (which includes other Contractors on site), or anything beyond the Contractor's control, disrupts the Contractor from finishing within the completion period, the Superintending Officer must assess the impact of this disruption on the Contractor's Works.
- 3.2.2 If any Completion Date(s) is affected the Superintending Officer must adjust the Completion Date(s).
- 3.2.3 This must be done in a written certificate clearly identified as Extension of Time Certificate.

### **3.3 Completion**

- 3.3.1 When the Contractor practically completed all the Works, he shall inform the Superintending Officer stating he has completed.
- 3.3.2 The Superintending Officer must decide when the Works has actually practically completed by the Contractor.
- 3.3.3 This decision must be in a written certificate clearly identified as Certificate of Practical Completion.
- 3.3.4 The Superintending Officer must decide when all obligations of the Contractor are fully discharged.
- 3.3.5 This decision must be in a written certificate clearly identified as a Final Completion Certificate.
- 3.3.6 This must be done after the end of Defects Liability Period (as stated in the Appendix Item No. 3.0) or when the Contractor has rectified all the shortfall(s) including Works that is not according to this Contract and any other breach of Contract by the Contractor identified by the Superintending Officer, whichever is later.

### **3.4 Delayed Completion**

- 3.4.1 If the Contractor does not finish by the date stated in the Contract or Job Order, he shall pay Liquidated and Ascertained Damages due to the delay to the Government as provided in the Payment Certification Clause.
- 3.4.2 Liquidated Damages is calculated for delay between when the Contractor should have completed the Works and when he actually completed the Works.

## **4.0. VARIATIONS TO WORK**

- 4.1 The Superintending Officer can issue instructions to vary the Works to be done.
- 4.2 If the Superintending Officer instructs the Contractor to vary any of the Works and there is a financial impact, the Superintending Officer must certify the value of the variation work as provided in the Payment Certification Clause.
- 4.3 The Superintending Officer must value the variation work using the Summary of Works rates and/or adjusted Schedule of Rates. If neither are available then using fair market rates.
- 4.4 This shall be done in a written certificate clearly identified as Variation Order certificate.

## **5.0. PAYMENT CERTIFICATION**

### **5.1 Claims and Payment Certificate**

- 5.1.1 The Contractor must submit a claim for the Works done before any payment certificate can be issued.

### **5.2 Contents of Payment Certificate:**

- 5.2.1 The payment certificate must include the following:

- 5.2.2 Add the following:

- (a) Cumulative value of the Works done. This is valued based on Summary of Works rates and/or adjusted Schedule of Rates, if any. If none, then valued based on fair market rates.
- (b) Value of variation work properly instructed by the Superintending Officer and properly done by the Contractor.

- 5.2.3 Deduct the following:

- (a) Liquidated and Ascertained Damages which is calculated for delay between when the Contractor should have completed the Works and when he actually practically completed the Works.
- (b) The value of any shortfall(s) due to Works done according to this Contract or due to any other breach of this Contract by the Contractor which the Superintending Officer has informed the Contractor, if the Contractor does not rectify the shortfall(s) the Superintending Officer can certify either:
  - (i) The cost of rectifying such shortfall(s) by others; or
  - (ii) The reduced value of the completed Works due to such shortfall(s) as stated in the Appendix.

- (c) A percentage of the sum of total additions above will be retained (as the Retention Sum) and released after the end of Defects Liability Period or when the Contractor rectified all the shortfall(s) including Works that are not done according to this Contract and any other breach of contract by the Contractor identified by the Superintending Officer.
- (d) The Net Amount Payable is the amount the Government must pay to the Contractor. This is calculated by:
  - (i) Adding the total under additions above;
  - (ii) Deducting the total of all deductions above; and
  - (iii) Deducting the cumulative amount certified previously.
- (e) The Superintending Officer may deduct any monies owed by the Contractor to the Government under this Contract or any contract(s) from the Contractor's payments.

## 6.0. TERMINATION OF CONTRACT

### 6.1 If the Contractor :

- (a) Suspends the Works before completion without any reasonable cause; and/or
- (b) Fails to proceed with the Works within the time stated in the Superintending Officer's instructions; and/or
- (c) Fails to comply with the Superintending Officer's instructions;

for fourteen (14) days after a notice sent to the Contractor, the Superintending Officer can determine this Contract by a written notice.

### 6.2 If the Contractor :

- (a) Becomes bankrupt; or
- (b) Goes into liquidation; or
- (c) Has offered or given or agreed to give to any person any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forbear to do any action in relation to the obtaining or execution of this Contract with the Government, or for showing or forbearing to show favour or disfavour to any person in relation to this Contract or any other contract with the Government or the like acts shall have been done by any person employed by the Contractor or acting on his behalf (with or without the knowledge of the Contractor), or if, in relation to this Contract or any other contract with the Government, the Contractor, or any person employed by the Contractor or acting on his behalf shall have committed or abetted to commit an offence under the Prevention of Corruption Act (Chapter 131) or section 161, 162, 163, 164, 165, 213, 214 or 215 of the Penal Code (Chapter 22);

this Contract is terminated by a written notice.

- 6.3 In either (6.1) or (6.2) above, the Superintending Officer may complete the Works by other ways and the Contractor shall pay for all extra costs incurred.

### 6.4 Termination For Convenience :

- (a) The Government may at any time, give the Contractor a written notice to terminate the employment of the Contractor under the Contract and the Contractor shall immediately or upon such other date as specified in the written notice:
  - (i) cease all works under the Contract, which shall include, but be not limited to such work for the purpose of protecting, making safe or tidying up such part of the works as may already have been executed, or may be in the course of execution,
  - (ii) Vacate the site, remove all his plant, tools, equipment, goods and unfixed materials which have not been paid by the Government and hand back possession of the site to the Government.
- (b) In the event of termination under this Clause, Superintending Officer shall certify the amounts payable to the Contractor and the Contractor shall provide all reasonable assistance to the Superintending Officer. In the event that the Contractor does not submit the necessary information required, the Superintending Officer shall make his certification on the information available. The amount certified shall be paid by the Government less any sums previously paid or due to or recoverable by the Government from the Contractor.

**PART C - APPENDIX**

<p><b>1.0</b></p>	<p><b>Completion Date :</b>                  (If not stated, to be instructed by the Superintending Officer, if more than one completion period, identify the scope of Works for each completion period).                  For Term Contract, the Contract shall ends when the following conditions are met :                  (a) The actual expiration of the Contract Period; or                  (b) The limit of the Approximate Maximum Total Value of All Job Orders have been reached;                  whichever of the above comes first but subject to Clause 3.2 and Clause 4.0.</p>	<p style="text-align: right;">_____ / _____ / 2023</p>
<p><b>2.0</b></p>	<p><b>Liquidated and Ascertained Damages (LAD) :</b>                  (If none stated, then the Superintending Officer may certify a reasonable sum as compensation for delay).</p>	<p style="text-align: right;"><b>15% OF CONTRACT SUM</b>  <b>NO. OF DAYS</b></p>
<p><b>3.0</b></p>	<p><b>Shortfalls / Defects Liability Period :</b>                  (If none stated, SIX (6) MONTHS from the date of completion).</p>	<p style="text-align: right;">_____ Months</p>
<p><b>4.0</b></p>	<p><b>Retention Sum :</b>                  (If none stated, FIVE (5%) PERCENT of the Contract Sum).</p>	<p style="text-align: right;">NA % of the                  _____ Contract Sum</p>
<p><b>5.0</b></p>	<p><b>Minimum and Maximum Values of Job Orders :</b>                  Minimum value of any one Job Order to be issued                  Maximum value of any one Job Order to be issued                  (If none stated, the maximum value to be issued must be capable of being carried out and completed within the Contract Period).</p>	<p style="text-align: right;">≤ B\$ _____                  ≥ B\$ _____</p>
<p><b>6.0</b></p>	<p><b>Approximate Maximum Total Value of All Job Orders for the Contract Period :</b>                  (If not stated, NOT MORE THAN \$50,000.00 - BRUNEI DOLLARS FIFTY THOUSANDS)                  The Superintending Officer gives no warranty or undertaking as to the actual amount of Works that will be issued through Job Orders and no variance in the actual value of Works ordered shall give rise to a change in any rate, price or percentage adjustment.</p>	<p style="text-align: right;">≤ B\$ _____</p>

FUME CUPBOARDS (DSS, MOH COMPLEX BRANCH)

A) ENVIRONMENT SECTION:

ITEM	DESCRIPTION	PLANT NO (SN NO)	LOCATION	Monthly B\$	Yearly Certification B\$
1	DYNA FLOW	14005/2 BME#(FC-3)	Environment Section, 2 <sup>nd</sup> Floor, Old Wing		
2	DYNA FLOW	S#14005/14 BME#0011609	Environment Section, 2 <sup>nd</sup> Floor, Old Wing		
3	DYNA FLOW	BME 0001732 S#14674/3	Environment Section, 2 <sup>nd</sup> Floor, Old Wing		
4	ESCO Laboratory Fumehood Frontier Duo	S#2007-20569 BME#0006382	Environment Section, 2 <sup>nd</sup> Floor, Old Wing		
5	DYNA FLOW	S#14674 BME0001731	Environment Section, 2 <sup>nd</sup> Floor, Old Wing		
6	DYNA FLOW	S#14005-06 BME00011676	Environment Section, 2 <sup>nd</sup> Floor, Old Wing		
7	DYNA FLOW	S#14005-7 BME0011631	Environment Section, 2 <sup>nd</sup> Floor, Old Wing		
8	Astecair 5000L Ductless Fumehood	S/N= N/A BME=11622	Environment Section, 2 <sup>nd</sup> Floor, Old Wing		
<b>Total C/F to Summary</b>					



B) FOOD CHEMISTRY SECTION:

ITEM	DESCRIPTION	PLANT NO (S/N NO)	LOCATION	Monthly B\$	Yearly Certification B\$
1	Purair 24 PCR Cabinet	DNA-LF2-027 PCR70598	FDS Lab 6, First Floor, Old Wing		
2	Purair 24 PCR Cabinet	DNA-LF3-028 PCR70599	FDS Lab 6, First Floor, Old Wing		
3	Purair 24 PCR Cabinet	DNA-LF1-026 PCR70600	FDS Lab 6, First Floor, Old Wing		
4	DYNA SAFE	FDS-FC-03 14516	FDS Lab 1, Ground Floor, Old Wing		
5	DYNA SAFE	FDS-FC-01 14674/1	FDS Lab 1, Ground Floor, Old Wing		
6	DYNA FLOW	FDS-FC-02 14005/1	FDS Lab 1, Ground Floor, Old Wing		
7	DYNA FLOW	FDS-FC-06 14005/8	FDS Lab 3, Ground Floor, Old Wing		
8	DYNA FLOW	FDS-FC-07 14005/5	FDS Lab 3, Ground Floor, Old Wing		
9	DYNA FLOW	FDS-FC-05 14005/15	FDS Lab 5, First Floor, Old Wing		
10	DYNA FLOW	FDS-FC-04 15591	FDS Lab 5, First Floor, Old Wing		
11	DYNA FLOW	FDS-FC-11 15591 /2	FDS Lab 4 First Floor, Old Wing		
12	DYNA FLOW	S/N 14005/13	2nd Floor, Old Wing		
13	DYNA FLOW	FDS-FC-09 S/N 14005/11 BME 0011601	FDS Lab 4 First Floor, Old Wing		
14	DYNA FLOW	FDS-FC-12 S/N 14005/16	FDS Lab 7, First Floor, Old Wing		
15	DYNA FLOW	FDS-FC-10 X4005	FDS Lab 8, Ground Floor, Old Wing		
16	ESCO PCR Safety Cabinet PCR-3A1	DNA-LF4-063 S/N: 2009-37061	FDS Lab 6, First Floor, Old Wing		
17	ESCO PCR Safety Cabinet PCR-3A1	DNA-LF5-064 S/N: 2009-37062	FDS Lab 6, First Floor, Old Wing		
18	CSC-91000F (FILTER)	FDS-CEMCAB-01 9100013213/1114	FDS Lab 3, Ground Floor, Old Wing		
19	ASTEC (FILTER)	FDS-CEMCAB-03 20956	FDS Lab 3, Ground Floor, Old Wing		
<b>Total C/F to Summary</b>					

C) FORENSIC BIOLOGY/ DNA SECTION:

ITEM	DESCRIPTION	PLANT NO	LOCATION	Monthly B\$	Yearly Certification B\$
1	AIRRONE PCR-640, PCR-UV/LAF CABINET – POLYMERASE CHAIN REACTION (EQ#0003073)	S#PCR1025 BME#00030A	PCR Rm 1, 4 <sup>th</sup> Floor, New wing		
2	AIRRONE PCR-640, PCR-UV/LAF CABINET – POLYMERASE CHAIN REACTION (EQ#0003073)	S#PCR1026 BME#0003073	Pre Amp Rm 1, 4 <sup>th</sup> Floor, New wing		
3	ESCP PCR SAFETY CABINET PCR-3A1	S/N: 2009-38701	Quant Room 1, 4 <sup>th</sup> Floor, New wing		
4	ESCO Labculture Biohazard Safety Cabinet	S/N: 2012-67188	Examination Rm. 2, 4 <sup>th</sup> Floor, New wing		
5	ESCO Frontier Fumehood	S/N: 2012-65667	Examination Rm. 2, 4 <sup>th</sup> Floor, New wing		
6	ESCO Frontier Fumehood	S/N: 2012-67179	Extraction Rm. 1, 4 <sup>th</sup> Floor, New wing		
7	ESCO Frontier Fumehood	S/N: 2012-67180	Extraction Rm. 1, 4 <sup>th</sup> Floor, New wing		
8	Esco Labculture Laminar Flow	S/N: 2012-67191	Extraction Rm. 2, 4 <sup>th</sup> Floor, New wing		
9	Esco Labculture Laminar Flow	S/N: 2012-67189	Post PCR Rm.1, 4 <sup>th</sup> Floor, New wing		
10	ESCO Frontier Fumehood	SN: 2012-65666	Extraction Rm. 2, 4 <sup>th</sup> Floor, New wing		
11	ESCO Labculture Laminar Flow	S/N: 2012-67192	Pre Amp. Rm.2, 4 <sup>th</sup> Floor, New wing		
12	ESCO Labculture Laminar Flow	S/N: 2012-67190	Post PCR Rm.2, 4 <sup>th</sup> Floor, New wing		
13	ESCO Frontier Fumehood	S/N: 2012-67178	Chemical Pre, 4 <sup>th</sup> Floor, New wing		
14	ESCO Labculture Biohazard Safety Cabinet	S/N: 2012-67187	Examination Rm.1, 4 <sup>th</sup> Floor, New wing		
<b>Total C/F to Summary</b>					

D) PHYSICAL EVIDENCE SECTION:

ITEM	DESCRIPTION	PLANT NO	LOCATION	Monthly B\$	Yearly Certification B\$
1	ESCO Frontier Fumehood	S/N: 2011-65210	Document Examination Lab, 3 <sup>rd</sup> Floor, Room 3.09 (Chemistry Room), New wing		
2	ESCO Frontier Fumehood	S/N: 2011-65207	Criminalistic Lab, 3 <sup>rd</sup> Floor, Room 3.25 (Chemistry Room), New wing		
3	ESCO Frontier Fumehood	S/N: 2011-65209	Criminalistic Lab, 3 <sup>rd</sup> Floor, Room 3.25 (Chemistry Room), New wing		
<b>Total C/F to Summary</b>					

E) ILLICIT DRUG SECTION:

ITEM	DESCRIPTION	PLANT NO	LOCATION	Monthly B\$	Yearly Certification B\$
1	DYNA FLOW	14005/3	Illicit Drugs Section, 2 <sup>nd</sup> Floor, Old wing		
2	DYNA FLOW	S#15591 BME 0002438	Illicit Drugs Section, 2 <sup>nd</sup> Floor, Old wing		
3	DYNA FLOW	S#14005/10 BME#0011711	Illicit Drugs Section, 2 <sup>nd</sup> Floor, Old wing		
4	DYNA FLOW	S#14005/12 BME#0011710	Illicit Drugs Section, 2 <sup>nd</sup> Floor, Old wing		
5	DYNA FLOW	S#14005/9	Illicit Drugs Section, 2 <sup>nd</sup> Floor, Old wing		
6	DYNA FLOW	S#1559112 BME#002437	Illicit Drugs Section, 2 <sup>nd</sup> Floor, Old wing		
7	ESCO Labculture BSC	S/N2011-65230	Illicit Drugs Section, 2 <sup>nd</sup> Floor, New wing, Examination Room (2.07)		
8	ESCO Labculture BSC	S/N2011-65229	Illicit Drugs Section, 2 <sup>nd</sup> Floor, New wing, Wet Chemistry Room 2 (2.28)		
9	ESCO Frontier Fumehood	S/N:2011-65206	Illicit Drugs Section, 2 <sup>nd</sup> Floor, New wing, Wet Chemistry Room 1 (2.11)		
10	ESCO Frontier Fumehood	S/N:2012-65213	Illicit Drugs Section, 2 <sup>nd</sup> Floor, New wing, Wet Chemistry Room 1 (2.11)		
11	ESCO Frontier Fumehood	S/N:2011-65212	Illicit Drugs Section, 2 <sup>nd</sup> Floor, New wing, Wet Chemistry Room 1 (2.11)		
12	ESCO Frontier Fumehood	S/N:2011-65205	Illicit Drugs Section, 2 <sup>nd</sup> Floor, New wing, Wet Chemistry Room 1 (2.11)		
13	ESCO Frontier Fumehood	S/N:2011-65204	Illicit Drugs Section, 2 <sup>nd</sup> Floor, New wing, Wet Chemistry Room 2 (2.28)		
14	ESCO Frontier Fumehood	S/N:2011-65203	Illicit Drugs Section, 2 <sup>nd</sup> Floor, New wing, Wet Chemistry Room 2 (2.28)		
15	ESCO Frontier Fumehood	S/N:2011-65214	Illicit Drugs Section, 2 <sup>nd</sup> Floor, New wing, Wet Chemistry Room 2 (2.28)		
16	ESCO Frontier Fumehood	S/N:2011-65211	Illicit Drugs Section, 2 <sup>nd</sup> Floor, New wing, Wet Chemistry Room 2 (2.28)		
17	Purair	S/N: P98746	Illicit Drugs Section, 2 <sup>nd</sup> Floor, New wing,		
<b>Total C/F to Summary</b>					

F) TOXICOLOGY SECTION:

ITEM	DESCRIPTION	PLANT NO	LOCATION	Monthly B\$	Yearly Certification B\$
1	ESCO Labculture BSC Class II	S/N: 2011-65228	Toxicology, First Floor, New wing, Instrument Room 1		
2	ESCO Labculture BSC	S/N: 2011-65227	Toxicology, First Floor, New wing, Chemistry Room		
3	ESCO Frontier Fumehood	S/N: 2011-65208	Toxicology, First Floor, New wing, Chemistry Room		
4	ESCO Frontier Fumehood	S/N: 2012-63900	Toxicology, Ground Floor, New wing, Wet Chemistry Room		
5	DYNAFLOW	S/N: 14005/17 BME 0011561	Toxicology, Ground Floor, New Wing, Wet Chemistry Room		
6	ESCO Cytotoxic Biosafety Cabinet	S/N: 2012-67193	Toxicology, Ground Floor, New wing, Sample Preparation Room		
7	ERLA CFM SERIES Laminar Flow	S/N: 20150101 BME# 18254	Toxicology, Ground Floor, New wing, Instrument Room		
8	Airtech Biological Safety Cabinet	SN/ JZ2021073497 BME 26967	Toxicology, Ground Floor, New wing, Screening Room		
9	ESCO LA2-5A1 Biosafety Cabinet	SN 2009-43733 BME 0011266	Toxicology, Ground Floor, New wing, Wet Chemistry Room		
<b>Total C/F to Summary</b>					

## FUME CUPBOARDS (DSS, SERASA BRANCH)

### G) MICROBIOLOGY SECTION:

ITEM	DESCRIPTION	PLANT NO	LOCATION	Monthly B\$	Yearly Certification B\$
1	ESCO LA2-6A1 Biosafety Cabinet	S#2014-75341 BME 19536	Microbiology Serasa – Food Analysis Laboratory, Ground Floor		
2	ESCO LA2-6A1 Biosafety Cabinet	S#2014-79085 BME 19522	Microbiology Serasa – PCR Preparation Room, Ground Floor		
3	ESCO LA2-6A1 Biosafety Cabinet	S#2013-79083 BME 19523	Microbiology Serasa – PCR Room, Ground Floor		
4	ESCO LA2-6A1E Biosafety Cabinet	S#2014-92374	Microbiology Serasa – Sterile Media Room, Ground Floor		
5	ESCO PCR Cabinet	S#2010-47570	Microbiology Serasa – PCR Room, Ground Floor		
6	ESCO AVC-6D1 Laminar Flow Cabinet	S#2013-85774 BME 19550	Microbiology Serasa – Food Analysis Laboratory, Ground Floor		
7	ESCO AVC-6D1 Laminar Flow Cabinet	S#2013-85773 BME 19553	Microbiology Serasa – Water/ Pharmaceutical / Cosmetics Analysis Laboratory, Ground Floor		
8	ESCO ADC-4E1-PP Fume Hood Cabinet	S#2013-86495 BME 19559	Microbiology Serasa – Library, Ground Floor		
9	ESCO AHC-6A1 Laminar Flow Cabinet	S/N:2007-24903 BME 6449	Microbiology Serasa – Media Preparation Room, Ground Floor		
10	ESCO LA2-6A1 Biosafety Cabinet	S/N: 2008-34924 BME 6755	Microbiology Serasa – Legionella Analysis Laboratory, Ground Floor & Operational		
11	ESCO Laminar Flow Cabinet LHC-4A1	2014-92810 BME 19556	DSS Serasa – Library, Ground Floor		
12	ESCO PW1-3A1 Weighing Balance Enclosure	S/N 196002 BME 30360	Microbiology Serasa – Media Prep Room, Ground Floor		
<b>Total C/F to Summary</b>					

H) FOOD CHEMISTRY SECTION:

ITEM	DESCRIPTION	PLANT NO	LOCATION	Monthly B\$	Yearly Certification B\$
1	Method II Fumehood (Ducting)	C. Fh/001	Chemistry Serasa – Sample Pre-Treatment 2, 1 <sup>st</sup> Floor		
2	Method II Fumehood (Ducting)	C. Fh/002	Chemistry Serasa – Sample Pre-Treatment 2, 1 <sup>st</sup> Floor		
3	Method II Fumehood (Ducting)	C. Fh/003	Chemistry Serasa – Sample Pre-Treatment 2, 1 <sup>st</sup> Floor		
4	Method II Fumehood (Ducting)	C. Fh/004	Chemistry Serasa – Sample Pre-Treatment 2, 1 <sup>st</sup> Floor		
5	Method II Fumehood (Ducting)	C. Fh/005	Chemistry Serasa – AAS, 1 <sup>st</sup> Floor		
6	ESCO Fumehood (Walk in)	C. Fh/006 (S/N: 2015-99093)	Chemistry Serasa – Sample Pre-Treatment 1, 1 <sup>st</sup> Floor		
7	ESCO Fumehood (Knee High)	C. Fh/007 (S/N: 2015-99094)	Chemistry Serasa – Sample Pre-Treatment 1, 1 <sup>st</sup> Floor		
8	Captair Fumehood (Mobile)	C. Fh/008 (S/N: S321-124-2011-CN) BME 19893	Chemistry Serasa – Sample Pre-Treatment 1, 1 <sup>st</sup> Floor		
9	Captair Storage Cabinet	C. Fh/009 (S/N: 822D-175-2014-CN) BME 20007	Chemistry Serasa – Sample Pre-Treatment 1, 1 <sup>st</sup> Floor		
10	Captair Storage Cabinet	C. Fh/010 (S/N: 822A-176-2013-CN) BME 20008	Chemistry Serasa – Sample Pre-Treatment 1, 1 <sup>st</sup> Floor		
11	Astec Fumehood (Mobile)	C. Fh/011 (S/N: 201009ED272) BME 19933	Chemistry Serasa – HPLC, 1 <sup>st</sup> Floor		
12	ESCO Fumehood (Mobile)	C. Fh/012 (S/N: 2003-4224) BME 19932	Chemistry Serasa – Standard Preparation & Storage, 1 <sup>st</sup> Floor		
13	Astec Fumehood (Mobile)	C. Fh/013 (S/N: 20030130279) BME 19930	Chemistry Serasa – Standard Preparation & Storage, 1 <sup>st</sup> Floor		
14	ESCO Fumehood (Mobile)	C. Fb/014 (S/N: 2002-3688) BME 19931	Chemistry Serasa – Standard Preparation & Storage, 1 <sup>st</sup> Floor		
15	Captair Storage Cabinet	C. Fb/001 (S/N: Venticap 502-144-2014-CN) BME 20050	Chemistry Serasa – Chemical Storage, 1 <sup>st</sup> Floor		
16	Captair Storage Cabinet	C. Fb/002 (S/N: Venticap 502-145-2014-CN) BME 20051	Chemistry Serasa – Chemical Storage, 1 <sup>st</sup> Floor		
17	Captair Storage Cabinet	C. Fb/003 (S/N: Venticap 502-148-2014-CN) BME 20052	Chemistry Serasa – Chemical Storage, 1 <sup>st</sup> Floor		
<b>Total C/F to Summary</b>					

**FUME CUPBOARDS (DSS, ANGGEREK BRANCH)**

**I) MEASUREMENT STANDARD SECTION:**

ITEM	DESCRIPTION	PLANT NO	LOCATION	Monthly B\$	Yearly Certification B\$
1	Hamilton Scientific	ID#140366	Flow Metrology Lab, Level 1, Anggerek Desa		
2	Hamilton Scientific	ID#140361	Volume Lab 2, Level G, Anggerek Desa		
3	Hamilton Scientific	ID#140364	Rice Moisture Lab, Level 2 Anggerek Desa		
4	Hamilton Scientific	ID#140362	Level 2, Anggerek Desa (Currently used by Parasitology)		
<b>Total C/F to Summary</b>					

**FUME CUPBOARDS (DSS, MADARAS BRANCH)**

**J) PHARMACY SECTION:**

ITEM	DESCRIPTION	PLANT NO	LOCATION	Monthly B\$	Yearly Certification B\$
1	ESCO Ductless Cabinet ADC-5B1	S/N: 2011-64433	Pharmaceutical Lab, First Floor		
2	Modulab General Purpose Fumehood	N/A (MODULAB (F1))	Pharmaceutical Lab, First Floor		
3	Modulab General Purpose Fumehood	N/A (MODULAB (F2))	Cosmetic and TMHS Lab, Left Side, First Floor		
4	Modulab General Purpose Fumehood	N/A (MODULAB (F3))	Cosmetic and TMHS Lab, Right Side, First Floor		
5	Modulab General Purpose Fumehood	N/A (MODULAB (F4))	Reference Standard Lab, First Floor		
<b>Total C/F to Summary</b>					

## FUME CUPBOARDS (SUMBILING LABORATORY)

K) NTRL/ NVRL:

ITEM	DESCRIPTION	PLANT NO	LOCATION	Monthly B\$	Yearly Certification B\$
1	ESCO BSC Class II	S/N: 2009-41950 BME 0011158	NTRL – Processing Room 1		
2	ESCO BSC Class II	S/N: 2009-41949 BME 0011157	NTRL – Processing Room 2		
3	ESCO Fume Cabinet	S/N: 2011-65481	NTRL – Molecular Main Lan		
4	Gelman Vertical Laminar Flow Cabinet	S/N: 291409 BME 0011136	NTRL – Molecular Room 2		
5	ESCO BSC Class II	S/N: 2013-82371 BME 0009929	NVRL – Tissue Culture Room Level 2		
6	ESCO Laminar Flow Cabinet	S/N: 2013-86274 BME 0014986	NVRL – Clean Room Level 2		
7	ESCO Laminar Flow Cabinet	S/N: 2013-86273 BME 0014987	NVRL – Tissue Culture Room Level 2		
8	ESCO BSC Class II	S/N: 2006-16192	NVRL – Special Test Room Level 1		
9	TELSTAR Bio-II-A BSC Class II	S/N: 19206	NVRL – Extraction Room Level 2		
10	AIRTECH BSC Class II	To be confirmed	NVRL – MDURV Sample Reception		
11	AIRTECH BSC Class II	To be confirmed	NVRL – MDURV Extraction Room		
12	ESCO BSC Class II	S/N: 2020-151977	NVRL – MDURV Extraction Room		
13	ESCO BSC Class II	S/N: 2020-151976	NVRL – MDURV Clean Room		
<b>Total C/F to Summary</b>					



**SUMMARY  
SCHEDULE OF EQUIPMENT AND PRICES  
UNDER MINISTRY OF HEALTH**

	Monthly B\$
A) ENVIRONMENT SECTION (DSS MOH COMPLEX)	
B) FOOD CHEMISTRY (DSS MOH COMPLEX)	
C) FORENSIC BIOLOGY / DNA SECTION (DSS MOH COMPLEX)	
D) PHYSICAL EVIDENCE SECTION (DSS MOH COMPLEX)	
E) ILLICIT DRUG SECTION (DSS MOH COMPLEX)	
F) TOXICOLOGY SECTION (DSS MOH COMPLEX)	
G) MICROBIOLOGY SECTION (DSS SERASA BRANCH)	
H) FOOD CHEMISTRY SECTION (DSS SERASA BRANCH)	
I) MEASUREMENT STANDARD SECTION (DSS ANGGEREK DESA BRANCH)	
J) PHARMACY SECTION ( DSS MADARAS BRANCH)	
K) SUMBILING LABORATORY	
SUB TOTAL C/F	B\$

SUB TOTAL	MONTHLY B\$
	B\$ _____ X 6 Months
TOTAL C/F	B\$ _____
<b>PRELIMINARIES</b> -Allow a sum for preliminaries as required to comply as required to comply with the specification and Conditions of Contract:  -Insurance for : Public Liability, Workmen Compensation and Fire	B\$
<b>GRAND TOTAL</b>	B\$

A. To carry out maintenance services for fume cupboards which include all following works:

1. Measurement and Tests (Monthly)

- a) Air Flow Measurement.
- b) Noise Level Measurement.
- c) Smoke Pattern Test.
- d) UV Light Test.
- e) Light Intensity Test.
- f) Voltage Measurement.
- g) Current Measurement.

2. General Service (Monthly)

- a) Clean and Disinfection of Surfaces.
- b) Check Motor Operation and Other Mechanical Parts.
- c) Functional Test and Alarms.
- d) Visual Inspection and Observation of Normal Operation.

3. Certification

- a) To perform monthly General Services, Measurement and Test.
- b) Test and calibrate the entire control and safety component.
- c) Megger all fan motors.
- d) Replace pre-filters (If applicable).
- e) Testing and Commissioning in accordance with International Standard.

All testing equipment and instrument must be calibrated when performing testing and measurement.

Personnel performing general services, measurement and test must be trained and to provide training certificate to ensure that they are familiar and qualified in providing such works.

Note

Hepa Filter for T.B. , Bacteriology and Virology Laboratories must be changed and replaced once per contract (First month of the contract). This is also apply to any machine which used the same filter.

**\*\*\* If any damage to Hepa Filter or the suction pressure for above said machines is less than 0.75 inches of water. The tenderers must replace as required by S.O without any extra costs.**

**CHECK LIST REPORT (SAMPLE)**

Type			
Model		S/N	

**Face Velocity**

<input type="checkbox"/>	Safety Cabinet -- (Fail point is below 0.40 m/s)	Average Inflow (m/s)	
	(Fail point is below 0.30 m/s)	Average Inflow (m/s)	
<input type="checkbox"/>	Laminar Flow Cabinet -- (Fail point is below 0.40 m/s)	Average Inflow (m/s)	
<input type="checkbox"/>	Fume Hood -- (Fail point is below 0.50 m/s)	Average Inflow (m/s)	
		25% Sash Open	
		50% Sash Open	
		100% Sash Open	

Cabinet Noise Level (dBA)		Smoke Pattern Test	UV Light Test
Ambient Noise Level (dBA)		Pass	Pass
Corrected Noise Level (dBA) (Fail point is below 70 dBA)		Fail	Fail

Additional works to be done depending on the cabinet to be serviced.	YES	NO
Clean and disinfects work area with 70% isopropyl alcohol.		
Perform visual inspection and observation for normal operation.		
Check roof fan motor for normal operation and inspect for wear and tear status.		
Perform functional test and alarm test.		

<input type="checkbox"/>	Button/ Switch	<input type="checkbox"/>	Display	<input type="checkbox"/>	Alarms	<input type="checkbox"/>
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Light Intensity Test (Fail point if below 480 lux)	Intensity NET (lux)
Cabinet Lights On	
Ambient Lights	

Incoming Voltage Test (Local Voltage)	
Motor Running Current Test (Motor Plate (amps))	

**REMARKS**


1.	The maintenance schedules set out below shall serve as a guide for routine preventive maintenance services. The maintenance schedules as recommended by the equipments manufacturers and in the equipment manuals shall be adopted in addition to these schedules. The Contractor shall familiarise himself with recommended maintenance schedules.
2.	The frequencies of maintenance may be adjusted, by mutual agreement to suit the duty and conditions of operation of the equipments.
3.	The maintenance schedules set out below do not include instructions for every component part of each item of equipment, but the contractor is expected to carry out the usual maintenance process in accordance with normal trade practices and to meet specific requirements of the equipments manufacturer's recommendations.
4.	When follow-up work, after carrying out routine maintenance, is considered necessary which involves further repairs, the contractor shall notify the Superintending Officer of the extent of repairs before proceeding with the works.
5.	Certain terms used frequently in the maintenance schedules below are defined as follows :-
	<b>Examine :-</b> To make careful and critical security of an item carried out without dismantling by using the senses of sight, hearing, smell and touch to verify that the equipment is in working order.
	<b>Test :-</b> To operate the equipment and/or use appropriate testing instrument to ensure that the equipment is working order.
	<b>Check :-</b> To make a thorough inspection for damage, wear or deterioration, also to ascertain that the equipment is correctly adjusted to conform to the required standard.
	<b>NB.</b> In addition to establishing the normal function of equipment the "Examine" , Test and Check as define above must include verification of the satisfactory state of all safety aspects.
6.	<b>Fumigation Procedure.</b>
6.1	Remove any objects from the cabinet by wiping them with disinfectant and enclosing in plastics bag which is sealed for separate decontamination. Clean the work zone and sump of the cabinet, removing any encrusted matter. Allow surface to dry.
6.2	Unpack the kit and confirm that all components are in a satisfactory condition.
6.3	Fix the ATTEST indicator to the exhaust fan grill of the cabinet, and fix the smaller of the PVC seal over the exhaust opening. Remove the paper backing strip from the self-adhesive sealing tape a little at a time. Ensure that the seal is effective at all points. Excess seal material can be trimmed or folded into pleats.
6.4	Place the fumigant generating container in the centre of the cabinet work surface and pour in all the formation solution. Place the lid alongside the container, for later use in sealing the container in the end of the procedure.
6.5	Check that all ports and services, eg Gas taps are closed.
6.6	Fix the larger of the PVC seals over the work zone opening and seal effectively at all points.
6.7	Cut a 200-300mm slit in the work seal, sufficient to allow access to reach into the container.
6.8	Pour the Potassium Permanganate crystal into the container, and immediately seal the slit in the seal.
6.9	Place the "CAUTION" signs on the cabinet and outside the room so as to be clearly visible.
	<b>Note:</b> <ul style="list-style-type: none"> <li>• The chemical reaction will be quite rapid and heat will be produced to generate the formaldehyde gas which fumigates the cabinet. In initial stage, some pressurization will occur, and the seals will expand slightly.</li> <li>• Use of full-face respirator and suitable gloves is recommended where exposure to formaldehyde is possible</li> <li>• Allow the cabinet to be exposed to the fumigation for at least 12 hours.</li> </ul>

7.	<b>Post Fumigation Procedure.</b>
7.1	<p>Purging/ neutralization of fumigant.</p> <p>At the end of the 12 hours period, the concentration of formaldehyde will have reduced to about 36ppm. The two most common and appropriate methods of purging the cabinet of the fumigant gas are discharge outside the building, or chemical quenching.</p> <p>The dilution method, involving the discharge of the fumigant directly into the room is not recommended. Where external discharge is possible, connect a length of "layflat" plastics tubing of approximately 200mm diameter to exhaust seal. This should be attached after fumigation, and prior to switching on the cabinet exhaust fan. The discharge end of the tubing should reach a window or other location where fumigant can be safely vented.</p> <p>Where external fumigant discharge is not possible, chemical quenching may be conducted. The recommended procedure is as follows :-</p> <p>*Obtain these materials.</p> <ul style="list-style-type: none"> <li>➤ A petri dish approx. 90mm diameter with lid.</li> <li>➤ An absorbent paper towel approx. A4 size, folded into four so as to form a long strip (this becomes a wick for evaporation of the ammonia solution).</li> <li>➤ The ammonia solution from the kit.</li> <li>➤ After fumigation, place the folded paper towel in the Petri dish inside the front of the cabinet. Do this by carefully lifting the work zone seal at the lower right hand corner by no more than 150mm. On class II cabinets, place the Petri dish on the front grille.</li> <li>➤ Pour the ammonia solution onto the towel in the Petri dish. Leave the empty ammonia container in the cabinet. Restore and seal.</li> <li>➤ Turn on the cabinet fans, and allow air to recirculate within the cabinet. Quenching is achieved as the ammonia evaporates from the paper wick, and the ammonia combines with both formaldehyde and preformaldehyde to produce hexamethylene a white odourless powder.</li> <li>➤ After 10 minutes, remove the exhaust opening seal and the work zone seal. Retained the ATTEST indicator for later determination of the effectiveness of the procedure.</li> <li>➤ Fold the paper towel into Petri dish and fit the lid.</li> <li>➤ Immediately place the sealed Petri dish into a sink and cover with cold water. This will remove any excess vapour.</li> </ul>

7.2	<b>Testing Apparatus for Laminar Flow and Fume Cupboard</b>	
<b>No.</b>	<b>Apparatus</b>	<b>Application</b>
1.1	Aerosol generator (smoke generator)	HEPA filter integrity and air barrier testing
1.2	Aerosol Photometer	HEPA filter integrity and air barrier testing
1.3	Anemometer, rotating vane	Measuring air velocity
1.4	Sound pressure meter	Measuring sound level
1.5	UV radiometer	Measuring UV radiation intensity
1.6	Vibration meter	Measuring vibration at work surface

**Note :- The above said apparatus must be available throughout the contract periods**

8	<b>The Disposal of HEPA Filters</b>
<b>No.</b>	<b>Things Needed</b>
1.1	Large Plastic Bag (Bio- Hazardous)
1.2	Waste container
1.3	Gloves
1.4	Pollen mask or respirator
	<b>Instructions:</b>
1.1	Wear protective clothing, gloves and pollen mask or respirator, since the used HEPA filter may be extremely dirty, dusty or even toxic.
1.2	Turn off and unplug the device in which the HEPA filter is installed.
1.3	Remove the filter housing and any-filters from the device.
1.4	Remove the HEPA filter by grasping the outside corners of the unit and placing it in large, sealable bag. Seal the bag closed.
1.5	Discard the bagged HEPA filter in an outdoor waste container or contaminated waste receptacle for incineration in an approved incinerator.











