



TENDER DOCUMENT

FOR

Procurement of Laboratory Equipment of:

**“Pilot Scale Water and Waste Water
Treatment Field”**

AT

U.S.-PAKISTAN CENTRE FOR ADVANCED STUDIES IN WATER

(USPCAS-W),

MEHRAN UNIVERSITY

OF

ENGINEERING AND TECHNOLOGY

JAMSHORO,

SINDH-PAKISTAN

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01.	B.O.Q. OF THE LABORATORY EQUIPMENT FOR:
	➤ Hydraulics Laboratory



MEHRAN UNIVERSITY OF ENGINEERING & TECHNOLOGY
JAMSHORO 76062, SINDH, PAKISTAN



“SAY NO TO CORRUPTION”

No. PM/USPCAS-W/MUET/JAM/38

Dated: 14/04/2017

NOTICE INVITING TENDERS

Sealed tenders are invited/ reinvited from all the interested Contractors / Firms / Parties / Suppliers / Manufacturers / Sole Distributors / Sole Agents meeting eligibility criteria, viz. having registration with Federal Board of Revenue (FBR) for Income Tax, Sales Tax in case of procurement of goods, registration with the Sindh Revenue Board (SRB) as the case may be and are not black listed in any procuring agency or authority, are invited to participate in sealed percentage / item rate tender for the following works:

S.#	Name of Work	Tender Fee	Completion Time	Earnest Money	Date of Purchase	Date of Submission of Bids	Purchase From
1	Procurement of Laboratory Equipment of Pilot Scale Water and Waste Water Treatment Field	3,000/-	04 Months	2%	20-April-17 to 08-May-17	09-May-17	USPCAS-W, Mehran University of Engineering & Technology, Jamshoro

The terms and conditions are given as under:-

1. The tender documents can be obtained from the Office of USPCAS-W, Mehran University of Engineering and Technology, Jamshoro or can be downloaded from SPPRA and MUET websites i.e. www.pprasindh.gov.pk & www.mueta.edu.com.pk on the payment noted above (non-refundable) on any working day except the day of opening of tenders. The Tender fee should be in the form of Pay Order in favor of Project Director (USPCAS-W) or challan which can be obtained from the above mentioned office. The sealed tender on prescribed proforma along with 2% earnest money of total bid in the form of Pay Order in favor of Project Director (USPCAS-W), should be deposited in the above office by (09-May-2017) up to (12.30 PM) and same will be opened on the same day, @ (01.00 PM) in same office, in presence of the Contractors / representative, who so ever will be present at that time. In case of any unforeseen situation resulting in closure of office on the date of opening or if Government declares Holiday the tender shall be submitted / opened on the next working day at the same time & venue. Any conditional or un-accompanied of the earnest money, tender will not be considered in the competition.
2. The Method of Procurement is Single Stage - Two Envelope Procedure. (Technical & Financial).
3. The bidders should have at least 10 years successful experience of same services of any university or large reputed organization in addition to instruction above.
4. The Bidders should have at least Rs. 1,000,000.00 annual turnover which would be verified by bank statement.
5. The bidders should be registered with Taxpaying Agencies which will be verified by concerned agencies.

The Procuring Agency reserves the right to reject any or all bids subject to relevant provisions of SPPRA Rules, 2010 and may cancel the bidding process at any time prior to the acceptance of a bid or proposal under Rule-25” of said Rules.

Procurement Manager
USPCAS-W
Mehran University of Eng. & Tech.
Jamshoro,
Phone No. 022-2109148
Email: po.uspcasw@admin.mueta.edu.pk

ARTICLES OF AGREEMENT

This Agreement made this _____ day of _____ 2017, by and between the Project Director, U.S-Pakistan Center for Advanced Studies in Water (USPCAS-W), Mehran University of Engineering and Technology, located at Jamshoro, Sindh, including his successors in office and Assignees / Agents, acting through the Procurement Manager, U.S-Pakistan Center for Advanced Studies in Water (USPCAS-W), Mehran University of Engineering & Technology, hereinafter called the “**University**”, of the one part.

And _____ of
(name and designation of the authorized person), located at _____, hereinafter called the “**Supplier / Contractor**” which expression shall include their successors, legal representatives of the second part.

Whereas the **USPCAS-W /University** requires equipment for the Laboratory Equipment of Pilot Scale Water and Waste Water Treatment Field at USPCAS-W, MUET, Jamshoro, and whereas the **Supplier / Contractor** has agreed to supply, install, put into operation and demonstrate the working of the said Equipment valued at Rs. _____ (in figures and words) in the period of _____ months, subject to the terms and conditions set forth, hereinafter, which have been accepted by the **Supplier / Contractor**.

(amount in figures and words)

Now this Agreement witnesses as follows:

1. In this agreement words and expressions shall have the same meanings as are respectively assigned to them in the **Conditions of Contract** hereinafter referred to.
2. The following documents which, for the purpose of identification, have been signed by _____ on behalf of the **Supplier / Contractor**, and by _____ (name and designation of the authorized person) _____ on behalf of the **University**, all of which shall be deemed to form and be read and construed as a part of this **Agreement** viz.:

- a) Articles of Agreement;
- b) Instructions to Tenderers;
- c) Conditions of Contract;
- d) Supplier / Contractor’s Offer including the relevant correspondence prior to signing of this Agreement with all Annexures duly filled in;
- e) The specifications of the equipment; and
- f) Bill of Quantity with prices.

3. In consideration of the payment to be made to the Supplier / Contractor, the **Supplier / Contractor** hereby **covenants** with the University to supply, deliver, install, put into operation and demonstrate the working of the Laboratory Equipment/Licensed Software in conformity in all respects of the Contract & the order form No. _____.

4. The **USPCAS-W / University** hereby **covenants to pay** the Supplier / Contractor in consideration of the supply, delivery, installation, putting into operation and demonstration of the working of the Laboratory Equipment the contact price in the manner prescribed by the Contract and approved by the University.

In Witness Thereof the parties have hereunto set their respective hands and seals, the day, month and year first above written.

WITNESSES:

USPCAS-W _____

Contractor/Supplier _____

Witness No.1:

Witness No.1:

Signature: _____

Signature: _____

Name: _____

Name: _____

Designation: _____

Designation: _____

Witness No.2:

Witness No.2:

Signature: _____

Signature: _____

Name: _____

Name: _____

Designation: _____

Designation: _____

INSTRUCTIONS TO TENDERERS

The U.S Pakistan Center for Advanced Studies in Water (USPCAS-W), Mehran University of Engineering and Technology, Jamshoro, Sindh, intends to purchase equipment for Pilot Scale Water and Waste Water Treatment Field under the USPCAS-W project. This tender is issued for the supply, installation, putting into operation and demonstration of the working of the Laboratory Equipment as per the Schedule of requirements given in this Tender Document.

PREPARATION OF TENDER.**1. Language of Tender**

The **Tender** along with any accompanying literature shall be prepared in **English** language only:

2. Submission of Tender

- a) The **Tender** shall be enclosed in a double cover. The outer cover shall bear the address of the Procurement Manager, USPCAS-W, Mehran University of Engineering and Technology, Jamshoro, Sindh, without any indication that it encloses a tender. The inner cover shall be marked with the title of the Tender, number of invitation to the Tender and the date of opening of the Tender, and **must be sealed**.
- b) The **Form for Tender**, (Annexure-A) **Tender Particulars (Annexure-B)** and **Forms of Schedule to Tender** (Annexure "C1" & "C2") enclosed herewith, shall be submitted in duplicate. The authorized person signing the tender documents must state his full name and authorized position designation underneath his signature.
- c) The **erasing and/or alterations**, if any, in the Tender shall be authenticated by the authorized person by his full signature.
- d) The **Tender** shall be accompanied with the **original quotations** from the manufacturers, in case the Tender is submitted through their authorized agents or distributors, and shall be supported by credentials establishing the experience and standing of the manufacturers and / or their authorized agents or distributors.
- e) **Ambiguous and incorrect answers** and/or incorrect filling of Tender Documents will render the tender liable to rejection.
- f) **Quotations** through cable, telegraph, telex, fax, or e-mail will not be considered.

- g) The tenders shall not rely on any **interpretation or correction** given by any person except the written **addenda and/or corrigenda** to documents issued by the Procurement Manager, USPCAS-W, Mehran University of Engineering and Technology, Jamshoro, Sindh.

3. Bid Bond and Contract Performance Bond

- a) The tenderer shall enclose with his/her tender a **Bid Bond** on requisite stamp paper, as per **Annexure “D”** to this Tender Document, issued by a scheduled/commercial bank doing business in Pakistan, for an amount equivalent to **2% of the total cost** of the Laboratory Equipment/Licensed Software offered as per the Tender submitted by him/her, or Rs.50,000.00 (fifty thousand), whichever is more. The Bid Bond shall be in favour of the Project Director, USPCAS-W, Mehran University of Engineering and Technology, Jamshoro. The bond so furnished shall remain **valid for a period 28 days beyond the period of validity of the Tender** or till it is revalidated/extended for a period mutually agreed upon by the tenderer and the Procurement Manager, USPCAS-W, Mehran University of Engineering and Technology, Jamshoro, Sindh.
- b) As soon as an award is made, the provisions in paragraphs c),d) and e), hereunder, shall **operate**.
- c) If the Tender is **rejected**, the Bid Bond will be returned to the tenderer as soon as possible after rejection.
- d) The **successful bidder** shall have to give a **Contract Performance Bond**, as per **Annexure “E”** to this Tender Document, to the extent of **2% of the total value** of the contract on the same conditions as the Bid Bond. The Performance Bond shall be retained by the Procurement Manager, USPCAS-W, Mehran University of Engineering and Technology, till the completion of the guarantee period as per Clause 23 of the Conditions of Contract.

4. Quality of Equipment.

- a) The Laboratory Equipment and other relevant materials (hereinafter called **“Equipment”**) quoted and supplied against this “Invitation to Tender” shall be strictly in accordance with the **Specifications** attached with this Tender Document. The Equipment shall be the product of an established manufacturer shall conform to internationally acceptable commercial standards, and shall be a model that has been successfully operated over a reasonable period of time in educational institutions R&D organizations, or relevant industry.
- b) In Tenderers must also warrant the use of best material in the making of the Equipment by the find that the Specifications for any items of the Equipment are lacking in details, they may give their own proposals with detailed specifications, preferably three alternate proposals if possible, for such items in Annexure “F”.

- c) The Equipment offered by the tenders must be of a quality suitable for the purposes and operations for which they are required, and must be capable of rendering the required performance and services at site in the local conditions of extreme tropical climate, air, dust, water, power and fuel at Jamshoro.
- d) The Hardware for operation of the Equipment will be made available by the University.
- e) The electric supply for operation of the Equipment will be made available at 220 volt single phase, or 380 volt three phase, and 50 cycles.
- f) The Equipment offered shall be complete with their standard accessories and must be accompanied by their normal instructions book/manual.
- g) Wherever possible or feasible, each item of Equipmen offered must have its own protection devices, e.g, overload protection by circuit breakers or fuses, or voltage stabilizer for electric equipment.
- h) Unless stipulated otherwise in the specifications for any item, the Equipment conforming to ASA, SAE, SSI or DIN will be acceptable.
- i) The successful bidders may be asked to supply list of spares for 5 years satisfactory operation of any item of the Equipment, prior to award of the contract.

5. Literature.

The tenderers must furnish with their bids catalogues giving full technical details of the Equipment to enable the USPCAS-W to check their offers technically against the prescribed specifications failing which the offers will be liable to rejection.

6. Principals Name, Certificate and Invoice.

- a) The tenderers are required to mention in their quotations/offers the name and address of their Principals along with a certificate authorizing them (tenderers) to quote on their (Principals) behalf as under:
“This is to certify that M/S. _____ located at _____ have obtained quotations from us against tender inquiry No. _____ dated _____ from USPCAS-W, Mehran Univiersity Universityof Engineering and Technology, at Jamshoro, due for opening on _____ and have agreed to make available the Equipment on the quotations and terms and conditions of the tender”.

The above condition does not apply to the manufacturers bidding directly.

- b) The tenderers must also furnish along with their offers their Principals original Proforma Invoice failing which their offers will be rejected.

7. Country of Origin.

The tenderers must state in his Tender the country of origin of the Equipment offered.

8. Alternative Proposal.

If any tenderer elects to submit alternative proposal(s) complete information on the alternative items including all data relating to technical specifications in Vol.I,II&III shall be given as per Annexure “F”.

9. **Prices.**

- a) **CATEGORY-‘A’ Equipment Manufactured/Available in Pakistan without. Involving Import.**

The prices quoted must be total per unit in Pakistani Rupees as shown in **Annexure “C-1”** and shall include:

- i. All charges for packing, marking, handling, insurance, inspection, guarantees, freight/transportation, agent’s commission; and all duties, taxes, levies, octrois etc; and.
- ii. The cost of installation, putting into operation and demonstration of the working of the Equipment in the premises of the USPCAS-W/ University.

- b) **CATEGORY-“B”. Equipment Imported from approved Countries.**

The prices must be quoted for each item of Equipment in **Annexure-“C2”** separately for each of the PARTS given below:

PART-1. Payment in Foreign currency.

The C&F prices quoted by the Principals in the currency of the country of origin.

For the purpose of comparison, the prices quoted shall be converted to equivalent prices in Pakistani Rupees on the basis of the official bank rate prevalent on the date of opening of the Tender.

PART-2 Payment in Pakistani Rupees.

- (i) The agent’s/Supplier / Contractor’s commission in Pakistani Rupees.
- (ii) The insurance charges. The insurance will be arranged by the Supplier / Contractor through the University with EFU General Insurance Company. The University will assist the Supplier / Contractor in obtaining the insurance at concessional rates, if any, as allowed by the Government.
- (iii) The cost of installation, putting into operation and demonstration of the working of the Equipment in the USPCAS-W, MUET, Jamshoro in Pakistani Rupees.
- (iv) All the charges pertaining to handling and clearance of the Equipment at the port including all taxes, levies, octrois etc. but excluding the customs duties for the payment of which the USPCAS-W / University is exempted by the Government. However, if the customs duties are charged for any items of the Equipment for which the Government the exemption, the USPCAS-W / University will make the payment.

- (v) The transportation charges for transporting the Equipment from the port to the premises of the USPCAS-W / University including the charges for loading the Equipment at the port and unloading the same at the USPCAS-W / University.

For the purpose of evaluation/comparison of bids, as stated in Clause-15, the total price for the Equipment under this Category shall be the sum of the amounts mentioned for Parts 1 & 2 above.

- (c) In addition to what is stated in para a) & b) above, the prices given in Annexure C1 & C2 shall also include the following for the Equipment of both the Categories-A & B.
 - (i) Supply, detailing, manufacture, factory testing, export preparation and all costs incidental to shipping/transport up to the stage of installation in the premises of the USPCAS-W /University.
 - (ii) Responsibility for any loss and/or damage at any stage from manufacture to installation in the premises of the USPCAS-W /University.
 - (iii) Provision for clean on boards bills of landing.
 - (iv) The cost of export taxes, fees and charges levied and out going incurred on exporting goods in the country of origin.
 - (v) The expenses on account of the certificate of origin, invoices or any other documents issued in the country or origin.

10. Validity of Prices/Tender

- a) The prices quoted shall be valid for a period of at least 90 days from the date of opening of the tender.
- b) Until the final Contract is executed, the successful bidder shall be bound by the terms and conditions of this Tender Document.

11. Acceptance of the Terms

- a) The submission of the tender against this tender inquiry by the tenderer means that the tenderer has read and accepted the terms and conditions relating to all the tender documents and annexures, and that he/she has thoroughly examined the specifications and particulars in the tender inquiry. Further the tender shall be deemed to be fully aware of the nature of the Equipment and the purpose for which they are required and shall be bound to accept the Contract if placed with him/her on the basis of the prices and of the delivery schedule as indicated in Clause 12 hereof within the validity of his/her Tender.

- b) If the Tender is awarded in favour of Proprietor/Principals who has no authorized agent or distributor in Pakistan, he/she shall have to appoint a distributor or nominee for the purpose of successful completion of the contract and to provide after-sales service.

12. Delivery Period.

i. Shipment of Imported Items.

- a) The shipment of the items of Equipment which are to be imported shall be started as early as possible, the shipment schedule shall be submitted to the Project Director USPCAS-W, Mehran University, and shall be negotiable and subject to approval by the USPCAS-W /University.
- b) The tenderer must indicate in his/her offer the port from where the Equipment will be shipped.

ii. Delivery Period.

- a) The entire Equipment must be delivered, installed and put into operation in the USPCAS-W of the University as early as possible after receiving the letter of award of the Contract.
- b) The Tenderer shall give in the offer his/her own schedule for the delivery and installation of various items of the Equipment which shall be negotiable and subject to approval of the USPCAS-W / University.

iii. Delay in the Delivery of the Equipment/Software.

- a) For the Equipment delayed beyond the delivery period, as specified in the Contract, or as approved by the USPCAS-W / University as stated in Clause 12 ii b) above, there shall be levied liquidated damages as specified in Clause 22 of the Conditions of Contract given in this Tender Document.
- b) The liquidated damages may be waived fully or partially by the Project Director USPCAS-W, with the approval of the Vice Chancellor of the University, if there are reasonable grounds for such a delay.

13. Negotiations.

Under no circumstances will the negotiations take place with any tenderer with regard to Specifications and Prices quoted and read out at the public opening of the tenders and with regard to the substance of the offer. The tenderers cannot revise their prices after the public opening of the tenders.

14. Rights of the USPCAS-W / University

(a) The USPCAS-W / University reserves the right to reject any or all bids as mentioned in SPPRA rules, or not waive minor irregularities or errors in any offer. If it appears to the USPCAS-W / University that such irregularities or errors must be corrected in the offer in which they occur, the same will be corrected prior to issue of the letter of intent which may be awarded thereupon.

- (b) The USPCAS-W / University is neither bound to accept the lowest or any other offer nor is it bound to assign reason for rejection of any offer.
- c) The USPCAS-W / University reserves the right to award the contract to one bidder or divide it among several bidders.
- d) The USPCAS-W / University reserves the right to increase or decrease the quantity of the Equipment at its discretion without assigning any reason whatsoever.
- e) The USPCAS-W / University reserves the right to cancel the offer of the tenderer whose bid has been found/evaluated to be the lowest if it is revealed to the USPCAS-W / University that the tenderer does not have the capability or financial resources or facilities to carry out the Contract in accordance with the terms and conditions of this Tender Document.

15. Evaluation of Bids.

- a) In comparing bids the USPCAS-W / University will consider, besides the prices quoted, such other factors as compliance with specifications, relative quality of Equipment/Software, past experience of the tenderer, after-sales services facilities available in Pakistan and the tenderer's capacity to perform.
- b) The evaluation criteria specifically mentioned in the specifications will also be considered for evaluation of the bids.
- c) For the purpose of evaluation, the prices to be compared shall be the total prices inclusive of all duties, taxes, freight charges etc. as stated in clause 9 titled "Prices" above.
 - (i) For the items quoted in Annexure-C-1, the total prices as mentioned in Clause-9(b) shall be compared.
 - (ii) For comparison of the items quoted in Annexure C-1 with those quoted in Annexure C-2, the total prices as mentioned in Clause-9(a) including the charges/cost packing, making, handling, insurance, inspection guarantees, clearance, freight/transportation upto the University's premises duties, taxes, levies, octrois etc.

16. Errors in the Bids.

- (i) Any arithmetic errors found during evaluation of bids will be rectified on the following basis:
 - a) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected by the USPCAS-W / University.
 - b) If there is a discrepancy between the words and figures, the amount in figures shall prevail.

- c) If there is any discrepancy between the total tender price entered in the Articles of Agreement and the total shown in the Schedule of Prices, the amount stated in the Articles of Agreement shall be corrected by the USPCAS-W / University in accordance with the corrected schedule of Prices.
- (ii) If the tenderer does not accept the corrected amount of tender, his/her Tender will be rejected and the Bid Bond submitted with the tender shall be forfeited.

17. Foreign Exchange for Items of Equipment to be imported.

For the items of Equipment which are to be imported and for which the prices have been quoted on C&F basis in Annexure C-2, the University will arrange payment in the foreign currency, to the extent of the C&F amount, as stated in Clause 9(b), through its bank in Pakistan in accordance with the prevailing foreign exchange control rules/regulations of the Government of Pakistan.

CONDITIONS OF CONTRACT

1. **Scope of the Contract**

- a) The **Scope of the Contract** shall be the supply, delivery, installation, putting into operation and demonstration of the working of the Equipment in the premises of the USPCAS-W / University at Jamshoro, Sindh, in accordance with the technical Specifications and Bill of Quantities enclosed in this Tender Document.
- b) The Supplier / Contractor shall within a period of one month of the execution of the agreement furnish to the University a **detailed program** for supply and delivery of various items of the Equipment for necessary approval by the USPCAS-W / University.

2. **Definition of Terms**

In writing these Conditions of Contract, Specifications and Bill of Quantities, the following words shall have the meanings hereby indicated, unless there is something in the subject matter or Contract inconsistent with such constructions:

- i. **The University** shall mean the Mehran University of Engineering and Technology, Jamshoro, Sindh.
- ii. **USPCAS-W / University** shall mean the U.S.Pakistan Center for Advanced Studies in Water, Mehran University of Engineering and Technology, Jamshoro, Sindh.
- iii. **The Project Director** shall mean the Project Director of USPCAS-W, Mehran University of Engineering and Technology, Jamshoro, Sindh, including his successor in office and assignees, empowered to act in all matters pertaining to the University either directly or through the Procurement Manager USPCAS-W, Mehran University of Engineering and Technology, Jamshoro.
- iv. **The Supplier / Contractor or Supplier / Contractor** shall mean the Tenderer (Bidder) whose Bid has been accepted by the University and shall include the Bidder's executors, administrators, successors and permitted assignees.
- v. **The Equipment** shall mean and include all the Laboratory Equipment/ Licensed Software, literature, materials and articles to be provided by the Supplier / Contractor under the Contract.
- vi. **The Contract** shall mean the agreement signed by the Supplier / Contractor for the supply, delivery, installation, putting into operation and demonstration for the working of the Equipment, as stated under the Scope of the Contract above.
- vii. **The Contract Price** shall mean the sum mentioned in or calculated in accordance with the provisions of the Contract, which is to be paid to the Supplier / Contractor for satisfactory execution of the Contract in accordance with these Conditions of Contract.

- viii. **The Specifications** shall mean the specifications annexed to or issued, herewith, and shall include the schedule and drawings attached hereto as well as the samples and patterns if any.
- ix. **Month** shall mean the Calendar month.
- x. **Writing** shall include any manuscript, type-written, printed or other statement reproduced in any visible form and whether under seal or under hand.

3. **Contract Documents.**

- a) The term **Contract Document** shall mean the following documents which shall be deemed to form an integral part of the Contract:
 - i. Articles of Agreement;
 - ii. Instructions to Tenderers;
 - iii. Conditions of Contract;
 - iv. Supplier / Contractor's Proposal / Offer including the relevant correspondences prior to signing of the agreement with all Annexures duly filled in;
 - v. The Specifications of the Equipment; and
 - vi. Bill of Quantities with prices.
- b) In the event of any **conflict** between the above mentioned documents, the present Articles of Agreement and Conditions of Contract shall prevail.

4. **Signing of the Contract Agreement**

Within 30 days of the issue of the letter of intent, the successful bidder (bidders) will be required to **sign an agreement** with the USPCAS-W / University for the supply of such quantity, in whole or in part, of the tendered Equipment as will be communicated to him / her (them) in the letter of intent.

5. **Packing, Marking and Handling**

- a) All the Equipment/Software, whether imported or locally manufactured / available, shall be delivered to the USPCAS-W / University at Jamshoro in **safe and secure condition** at the risk and cost of the Supplier / Contractor.
- b) The packing, marking and handling shall be so arranged by the Supplier / Contractor as to **prevent any loss of or damage** to the Equipment.

- c) In case any of the items of the Equipment are to be imported by the Supplier / Contractor, the **import** shall be **arranged by the Supplier / Contractor** himself / herself with such packing and marking and through such means as deemed fit by him / her for safe and secure delivery at Jamshoro. The packing of the equipment shall be the usual export packing to ensure safe journey by air, sea, rail and road, as the case may be, of the Equipment to destination. Each packing shall be clearly marked in English with the following:

- i. Port of Destination: **KARACHI.**
 ii. Name of the Ship: _____
 iii. Name of the Consignee: **PROJECT DIRECTOR(USPCAS-W),
 MEHRAN UNIVERSITY OF
 ENGINEERING & TECHNOLOGY
 JAMSHORO, SINDH, PAKISTAN**

i. Name of the Supplier / Contractor: **SUPPLIER / CONTRACTOR'S
 NAME & ADDRESS**

- ii. Case Number & Contents: _____
 iii. Net Weight & Dimensions: (length, Breadth & Height)
 iv. Gross Weight: (Kg.)
 v. Number & Date of Contract: _____
 vi. Marking: **MUET** in a 6 in. x 4 in. rectangle

MUET

6. Transportation and Shipment

a. For Equipment to be Imported

- i. All those items of Equipment which are to be imported by the Supplier / Contractor shall be **shipped** by whatever means the Supplier / Contractor deems fit **at this / her risk and cost**. The Supplier / Contractor must keep USPCAS-W / University informed of the shipping arrangements, schedule of shipping, arrival at the port, clearance from the port, and transportation from the port to the University at Jamshoro.
- ii. **All costs** of loading of the Equipment from the wharves at port of shipment and also the cost of ship wharf age / berthing, demurrage charges, stevedoring, handling charges and other port and river dues in respect of shipment companies' vessels at the port of shipment and all other expenditure up to the stage of placing the Equipment at rest on board the ship and the freight charges shall be **borne by the Supplier / Contractor**.
- iii. Similarly all costs of unloading the Equipment at the wharves, wharf age / berthing, demurrage, stevedoring, handling charges and other port dues at the port of arrival in Pakistan and transportation from the port up to the stage of placing the Equipment position in the premises of the University shall be borne by the **Supplier / Contractor**. In order to facilitate the clearance of the Equipment at the port of arrival, a clearing agent will be engaged by the USPCAS-W / University, in consultation with the Supplier / Contractor, who will get the Equipment cleared with the assistance of the USPCAS-W / University and the Supplier / Contractor, and the clearing agent's charges shall be **borne by the Supplier / Contractor**.

- iv. All things being equal, **Pakistan flag ships** should be used, as far as possible, for shipment of the Equipment. If no such ship is available, such other ships may be used consistent with the execution of this Contract with economy and efficiency.
- v. The Equipment must be shipped **under deck**
- vi. The Supplier / Contractor shall send by air mail/courier service or personally deliver 4(four) sets of non-negotiable shipping documents direct to the Project Director USPCAS-W, Mehran University of Engineering and Technology, Jamshoro, Sindh, so as to reach him at least 8(eight) days before arrival of the ship at the port in Pakistan.

b. For Equipment Manufactured / Available in Pakistan

- i. All those items of the Equipment which are to be manufactured in Pakistan, or are to be supplied from the locally available stocks (whether imported or manufactured in Pakistan), may be transported from the place of manufacture or availability to Jamshoro by **any mode of transportation** as deemed convenient and suitable by the Supplier / Contractor at his / her risk and cost.
- ii. **All costs** of handling, loading, transportation, unloading and placing the Equipment in position in the premises of the USPCAS-W / University shall be borne **by the Supplier / Contractor**.

7. Pre-shipment and After-fabrication Inspection

- a) The **pre-shipment inspection** and / or the inspection of the Equipment Principals/Proprietor at the premises, if desired by the USPCAS-W / University, shall be arranged by the Supplier / Contractor at his / her own cost. The responsibility for the quality, quantity, correctness and adherence to the Specifications etc. of the Equipment shall lie solely and squarely on the Supplier / Contractor.
- b) The USPCAS-W / University may, at its discretion, waive pre-shipment inspection and hence issue the waiver in writing so that the Equipment could be shipped under manufacturer's test certificate. This waiver shall be deemed as authorization to ship for the purpose of negotiating the letter of credit under Clause 13(b) ii.
- c) The pre-shipment inspection and/or the waiver thereof shall in no way above the Supplier / Contractor of any of his obligations under this Contract.

8. Insurance

The **Supplier / Contractor shall arrange** the insurance for the Equipment in whatever way he / she deems fit at his / her risk and cost. The prices quoted in the offer of the Supplier / Contractor shall include the cost of insurance. The Supplier / Contractor shall have to inform USPCAS-W / University of the Insurance Arrangements made by him / her for the Equipment.

9. On-arrival Inspection

There shall be inspection of the Equipment by the representatives of the University after arrival in the premises of the USPCAS-W / University in presence of the Supplier / Contractor or his authorized representatives and the representatives of the insurance company. The **inspection report**, which, inter-alia, should indicate the condition in which each item of the Equipment has been received, shall be signed by the above representatives. The Supplier / Contractor shall coordinate with the Procurement Manager, USPCAS-W, Mehran University, and the insurance company for arranging the inspection at such date and time as is convenient to the above representatives.

10. Taking Over

Upon receipt of the Laboratory Equipment in the premises of the University and after inspection, as stated in Clause 9 above, the USPCAS-W / University will issue a **taking-over certificate** in respect of those items of Equipment which are received in acceptable condition. The taking-over of the damaged items will be with-held until the same are repaired / replaced and are re-inspected and found in acceptable condition.

11. Installation and Demonstration of Equipment/Software

a). Installation

- i) After inspection and taking over of the Equipment, as stated in Clauses 9 and 10 above, if required the **Supplier / Contractor shall install** those items of Equipment which are to be permanently positioned in place in the premises of the USPCAS-W / University. For this purpose, the Supplier / Contractor shall co-ordinate with the Project Director, USPCAS-W, Mehran University, for making arrangements for the Hardware needed for the installation.
- ii) The cost of hardware **for such installation** shall be borne by the Supplier / Contractor/ Contractor as per contract. The Supplier / Contractor shall provide, alongwith his offer, the details of the hardware needed for each item of the Equipment separately. The technical and other personnel needed for installation of the Equipment shall be provided by the Supplier / Contractor at his cost. The entire cost of installation, configuration, application except that of the needed hardware, shall be borne by the Supplier / Contractor.

b) Demonstration

- i) After installation of the Equipment, as stated in Clause **11 a)** above, the complete **working of each item** of Equipment for the purpose of performing the intended Laboratory experiments, testing of specimens and recording of the test results etc., shall be demonstrated fully to the designated staff of the University by the Supplier / Contractor or his technical personnel.
- ii) The entire **cost**, including the T.A. / D.A. of the personnel involved in the demonstration, shall be **borne by the Supplier / Contractor**.

12. Completion Certificate

After completion of the installation and demonstration, as stated in Clause **11** above, a certificate is to be obtained by the Supplier / Contractor from the concerned **Department** stating that the Equipment (item-wise) have been satisfactorily installed and demonstrated by the Supplier / Contractor.

13. Terms of Payment

The Supplier / Contractor shall be paid for Equipment in the following manner:

- a) **CATEGORY A: Equipment Manufactured/Available in Pakistan without involving import.**
 - i. For all those items of Equipment for which the completion certificate has been issued by the University, as stated in Clause **12** above, the University will pay to the Supplier / Contractor total price of the items quoted by the Supplier / Contractor.
 - ii. The payment for those items of Equipment for which the completion certificate has not been issued by the University, as stated in Clause **12** above, will be with-held and released only after the damaged items are replaced / repaired, re-inspected and found in satisfactory condition with consequent issuance of the completion certificate. The payment will be made in the same manner as stated in Clause **13 a) i** above
- b) **CATEGORY-B: Equipment Imported from Approved Countries.**

The payment for this category of Equipment will be made in two parts as under:-

PART-I. Payment in Foreign currency

- i. An irrevocable **letter of credit** of the C&F price, in the currency quoted by the Principals, will be opened in a bank in the country of origin in favor of the Principals/Supplier / Contractor within 30 days after signing the Contract.

- ii. The letter of credit amount will be paid against presentation of the shipping documents to the bank through the above letter of credit. The required shipping documents include:
- Clean on board bill of lading;
 - Supplier / Contractor's detailed invoice showing description of the Equipment, specifications, quantity, unit price and total price;
 - Detailed packing list;
 - Certificate of origin of the Equipment and
 - Certificate of pre-shipment/after-fabrication inspection or authorization to ship the Equipment as per Clause-7.

PART-2. Payment in Pakistani Rupees

The Rupee component of the price of the Equipment, as stated in Clause **9b) of "Instructions to Tenderers"** will be paid to the Supplier / Contractor in the following manner:

- i. For all those items of Equipment for which the taking over certificate has been issued by the University, as stated in Clause **10** above, the University will pay as per contract of the total price of the items quoted by the Supplier / Contractor/ Contractor.
- ii. The payment for those items of Equipment for which the completion certificate has not been issued by the University, as stated in Clause **10** above, will be withheld and released only after the damaged items are replaced/repared, re-inspected and found in satisfactory condition with consequent issuance of the completion certificate. The payment will be made in the same manner as stated in Clause **13 a)i** above

14. Warranty / Guaranty

- a) The Supplier / Contractor shall **warranty** that the Equipment shall be fit for the purposes and operation mentioned in the relevant clauses of the "Instructions to the Tenderers" and "Conditions of Contract", notwithstanding the fact that the entire Equipment, or any item or part of the Equipment, bear or are found to bear a patent or trade mark.
- b) The Supplier / Contractor shall guarantee supply of good quality Equipment in accordance with the Specifications and as stated in Clauses 4 and 5 of the "Instructions to the Tenderers". Further, the Equipment shall be brand new and absolutely free from all defects in material, quality and workmanship. In case of defects, the defective Equipment, or the defective parts / components of the Equipment thereof, shall be replaced by the Supplier / Contractor free of cost to the University within reasonable time.

15. Breach of Contract

In case of breach of warranty /guarantee or Contract, the **damages** suffered by the USPCAS-W / University shall be **recovered from the Supplier / Contractor** out of any payment due to the Supplier / Contractor and / or in accordance with the terms and conditions of the Contract Performance Bond given at Annexure “E” enclosed with this Tender Document, without notice to the Supplier / Contractor.

16. Supplier / Contractor’s Default Liability

- a) USPCAS-W / University may upon written notice of default to the Supplier / Contractor **terminate the Contract** in the circumstances detailed hereunder:
- i. If in the judgment of the University, the Supplier / Contractor fails to make delivery of the Equipment within the time specified in the Contract Agreement or within the period for which extension has been granted by the University; and
 - ii. If, in the judgment of the University, the Supplier / Contractor fails to comply with any of the other provisions of the Contract.
- b) In the event the USPCAS-W / University terminates the Contract, in whole or in part, as provided in Clause **16 a)** above, the USPCAS-W / University reserves the right to **purchase**, on such terms and conditions as it may deem appropriate, Equipment similar to the one terminated, and the Supplier / Contractor will be liable to the USPCAS-W / University for any additional costs for such **similar Equipment**, and / or for liquidated damages for delay, as defined in Clause **22** of the Conditions of Contract until such reasonable time as may be required for the final supply of the Equipment.
- c) If the Contract is terminated, as provided in Clause **16 a)** above, USPCAS-W / University, in addition to any other rights provided in this Clause, may require the Supplier / Contractor to **transfer title** and deliver to the University under any of the following cases in the manner and as directed by the University:
- i) Any **completed Equipment**; and
 - ii) Such **partially completed Equipment**, drawings, information and contract right (hereinafter called manufacturing material) as the Supplier / Contractor has specifically produced or acquired for the performance of such parts of the Contract as has been terminated.
- d) The USPCAS-W / University will **pay to the Supplier / Contractor** the Contract Price for the completed Equipment delivered to and accepted by the USPCAS-W / University and also for the manufacturing materials delivered and accepted.
- e) In the event the USPCAS-W / University does not terminate the Contract, as provided in Clause **16 a)** above, the Supplier / Contractor shall continue with the performance of his / her Contract, in which case the Supplier / Contractor shall be liable to the USPCAS-W / University for **Liquidated Damages for delay** as set out in Clause 22 until the Equipment are accepted.

17. Bankruptcy

If the **Supplier / Contractor** shall become **bankrupt** or have a receiving order made against him / her or compound with his / her creditors, or being a corporation commence to be wound up, not being a voluntary winding up for the purpose of amalgamation or reconstruction, or carry on its business under a receiver for the benefit of its creditors or any of them, **USPCAS-W /University shall** be at liberty to:

- a) **terminate the Contract** forthwith by a notice in writing to the Supplier / Contractor or to the liquidator or receiver or to any person in whom the Contract may become vested, and to act in the manner provided in Clause 16 above as though the last mentioned notice has been the notice referred in such Clause and the Equipment have been taken out of the Supplier / Contractor's hand; and / or
- b) give such liquidator, receiver, or other person the **option of carrying out the Contract** subject to his / her providing a guarantee for the due and faithful performance of the Contract up to an amount to be determined by the University.

18. Termination of Contract

- a) If, for any cause as set forth in Clause **19** hereafter, the Supplier / Contractor finds it impracticable to continue operation or, if owing to force majeure or to any cause beyond its control, the University finds it impossible to continue operation, then **prompt notification** in writing shall be given by the party affected to the other.
- b) If the delay or difficulties so caused cannot be expected to cease or become avoidable, or if operation cannot be resumed within six months, then either party shall have the right to terminate the Contract by giving ten **(10) days written notice** to the other.
- c) In the event of termination of the Contract under this Clause, **payment** will be made to the Supplier / Contractor as follows:
 - i) The Supplier / Contractor shall be paid for all the Equipment for which the completion certificate has been issued, as stated in Clause 12, and for all the reimbursable expenses due and unpaid.
 - ii) The Supplier / Contractor shall also be paid reasonably for any work done during the said six months period as well as for settlement of any financial commitment made in connection with proper performance of the Contract and which are not reasonably defrayed by payments under i) above.
 - iii) On termination of the contract for any cause, the Supplier / Contractor shall see to the orderly suspension and termination of operations with due consideration to the interests of the University with respect to completion, safeguarding or storing of the Equipment produced for the performance of the Contract and the salvage and resale thereof

19. Force Majeure.

The Supplier / Contractor shall not be liable for any additional cost or for liquidated damages for delay or any failure to perform the Contract arising out of force majeure or cause beyond his / her control including acts of God, or of the public enemy, or of the Government, fires, floods, epidemic quarantine restrictions, strikes, freight embargoes and default of subSupplier / Contractors due to any such cause (unless theUSPCAS-W /University shall determine that the Equipment to be furnished by the Supplier / Contractor might reasonably have been obtained from other sources in sufficient time to allow the Supplier / Contractor to meet the required time schedule), provided that the Supplier / Contractor shall within ten (10) days from the beginning of such delay notify the USPCAS-W / University in writing of the **causes of the delay**. The USPCAS-W / University shall ascertain the facts and the extent of the delay and **extend the time** for completing the supplies as in its judgment the findings justify.

20. Rejection

- a) In the event any portion of the Equipment supplied by the Supplier / Contractor is found before taking over to be **defective in material or workmanship**, or otherwise not in conformity with the requirements of the Contract, the USPCAS-W / University shall have the right to either reject or require, in writing, rectification of the Equipment. In the later case, the Supplier / Contractor shall with utmost diligence, and at his own expense, make good the defects so specified or replace the defective Equipment. If the Supplier / Contractor fails to rectify or replace the rejected Equipment, USPCAS-W / University may adopt any of the following options:
- i) **replace or rectify**, at its option, such defective Equipment and charge to the Supplier / Contractor the excess cost occasioned to theUSPCAS-W / University plus (15%) fifteen percent; or
 - ii) acquire the said Equipmentat a **reduced price** considered equitable under the circumstances; or
 - iii) **terminate the Contract** as provided in Clause **18** of these Conditions of Contract.
- b) Nothing in this Clause shall affect any claim by the University under Clause **22** hereafter.

21. Extension of Time

If the completion of the Contract is delayed due to reason beyond the control of the Supplier / Contractor, the Supplier / Contractor shall withoutdelay request USPCAS-W / University, in writing, of his **claim** for an extension of time. USPCAS-W / University on receipt of such request may agree to **extend the completion date** as may be reasonable in the circumstances of the case but without prejudice to other terms and conditions of the Contract.

22. Delay in Delivery - Liquidated Damages

- a) Should the **progress** of the Contract at any time be **lagging behind** the program agreed between the USPCAS-W / University and the Supplier / Contractor, USPCAS-W / University will notify the Supplier / Contractor in writing and the Supplier / Contractor shall there upon take such steps as he / she may deem fit to **expedite the progress** of the Contract. Non-issuance of this notice by the University shall not in any way absolve the Supplier / Contractor of the liquidated damages as stated in Clause **22 b)** below.
- b) If the Supplier / Contractor **fails to complete the Contract**, in full or part, within the time laid down in the Contract Agreement or any extension thereof, there shall be deducted from the Contract Price, as **liquidated damages**, a sum of one half of one percent (**0.5%**) **of the Contract price** of each unit of the delayed Equipment for each calendar week of delay subject to the maximum of five percent (5%) of the Contract Price of the unit or units so delayed, and such deduction shall be in full satisfaction of the Supplier / Contractor's liability for the said failure.

23. Period of Guarantee

- a) The term **period of guarantee** shall mean the period of twelve(**12**) **months** from the date on which the Equipment have been put into operation and demonstrated to USPCAS-W staff.
- b) During the period of guarantee, the Supplier / Contractor shall **remedy**, at his / her expense, **all defects** in design, materials, and workmanship that may develop or are revealed under normal use of the said Equipment upon receiving written notice from the University; the notice shall indicate in what respect the Equipment are faulty.
- c) The provisions of this Clause include all the **expenses** that the Supplier / Contractor may have to incur for delivery and installation of such replacement parts, material, and equipment as are needed for satisfactory operation of the Equipment at the University premises.

24. Non-assignment

The Supplier / Contractor shall **not have the right to assign or transfer** without the prior approval of the University the benefit and obligations of the Contract or any part thereof.

25. Expenditure under Contract

The Supplier / Contractor shall not make any expenditure for the purpose of this Contract in any **country not authorized** by the Government of Pakistan

26. Certificate Not to Affect the Rights of USPCAS-W / University or the Supplier / Contractor

No certificate of the USPCAS-W / University on account nor any sum paid on account by the USPCAS-W / University nor any extension of time for the delivery of the Equipment pursuant to Clause 19 shall affect or **prejudice the rights of the USPCAS-W / University** against the Supplier / Contractor nor relieve the Supplier / Contractor of his obligation for due performance of the Contract or be interpreted as approval of the Equipment supplied, and no certificate shall create liability of the USPCAS-W / University to pay for the alterations, amendments, variations etc. not ordered in writing by the USPCAS-W / University or discharge the Supplier / Contractor for the payment of damages or of any sum against the payment of which he / she is bound to indemnify USPCAS-W / University nor shall such certificate nor the acceptance by him / her of any sum paid affect or **prejudice the rights of the Supplier / Contractor** against the University.

27. Payments Due from the Supplier / Contractor

All costs, ascertained damages or expenses for which under the Contract the Supplier / Contractor is liable to USPCAS-W / University may be deducted by USPCAS-W /University from any money due or may become due to the Supplier / Contractor under the Contract or may be recovered by action of law or otherwise from the Supplier / Contractor.

28 Legal Proceedings

The Contract and the Tender Documents are governed by the **Laws of Pakistan** and no proceedings to or arising out of any of them shall be instituted in any courts other than those situated at Hyderabad and Karachi, Sindh Pakistan.

29. Dispute

Should any question or dispute arise as to the material, design, construction or delay in the supply of the Equipment or the purpose or the performance for which they are required or are warranted, USPCAS-W /University shall nominate an independent **certifier / expert** having knowledge of network equipment, etc., who will, after affording the parties to the dispute an opportunity to present their contention, and after having tests made as the certifier deems fit, certify whether there has been any breach of Contract or warranty and, if so, what sum shall be paid to USPCAS-W /University in diminution or extinction of price, and such certificates shall be final and binding and shall not be questioned and shall be acted upon in arbitral or other legal proceedings. The award of the costs of the certifier will be within his / her own discretion and shall be recoverable from the party against which the costs are awarded.

30. Arbitration

All disputes and matters of difference whatsoever (other than those relating to the certificate of expert certifier) between USPCAS-W / University and the Supplier / Contractor relating to and arising out of the Contract and Tender Documents shall be referred to arbitration under the arbitration act 1940 with amendments and re-amendments thereof, each party nominating its own arbitrator. The umpire will be nominated by the arbitrators within the first three arbitral hearings. The **award of the arbitrators or of the umpire shall be final and binding** upon the parties. The arbitral proceedings shall be held at Jamshoro, Sindh Pakistan.

FORM OF TENDER
(LETTER OF OFFER)

Tender Reference No. _____ Dated _____

Name of Contract: **Supply, Installation, and successful Commission/ Operation and Demonstration required for Pilot Scale Water and Waste Water Treatment Field at the premises of USPCAS-W, Mehran University of Engineering & Technology, Jamshoro, Sindh.**

The Project Director- USPCAS-W
Mehran University of Engineering & Technology
JAMSHORO, SINDH

Dear Sir,

1. Having examined the Tender Documents including Instructions to Tenderers, Conditions of Contract, Specifications, Drawings, Schedule of Prices and Addenda Nos. _____ for the execution of the above-named Contract, we, the undersigned, being a company doing business under the name and address _____ and being duly incorporated under the laws of Pakistan hereby offer to execute and complete such Contract and remedy any defects therein in conformity with the said Documents including Addenda thereto for the Total Tender Price of Rs. _____ (in figures and words) or such other sum as may be ascertained in accordance with the said Documents.
2. We understand that all the Schedules attached hereto form part of this Tender.
3. As security for due performance of the undertakings and obligations of this Tender, we submit herewith a Bid Security referred to in Clause 3 of the Instructions Tenderers and as per Annexure "D", in the amount of Rs. _____ (in words and figures) drawn in favor of or made payable to Project Director, USPCAS-W, Mehran University of Engineering and Technology, Jamshoro, and valid for a period of 28 days beyond the period of validity of this Tender.
4. We undertake, if our Tender is accepted, to complete the whole of the work comprised in the above-named Contact within the time stated in Clause 12 of the Instructions to Tenderers.
5. We agree to abide by this Tender for the period of 90 days beyond the date of opening of the Tender, and it shall remain binding upon us and may be accepted at any time before the expiration of this period.
6. Unless and until a formal Contract Agreement is signed, this Tender, together with your acceptance thereof, shall constitute a binding contract between us.
7. We undertake, if our Tender is accepted, to execute the Contract Performance Bond referred to in Clause 3 of the Instructions to Tenderers and as per Annexure "E" for the due performance of the Contract.

8. We understand that you are not bound to accept the lowest or any Tender you may receive.
9. We do hereby declare that this Tender is made without any collusion, comparison of figures or arrangement with any other person or persons making a Tender for the above-named Contract.
10. We confirm, if our Tender is accepted, that all partners of the joint venture shall be liable jointly and severally for the execution of the Contract and the composition or the constitution of the joint venture shall not be altered without the prior consent of the Project Director, USPCAS-W Mehran University of Engineering and Technology, Jamshoro. (Please delete this clause in case of Tender from a single firm).

Dated this _____ day of _____ 2015

Signature _____ in the capacity of _____ duly authorized

to sign Tender for and on behalf of _____
(Name of Tenderer in Block Capitals)

Address: _____

Witness:

Name: _____

Address: _____

Occupation: _____

TENDER PARTICULARS

THE TENDERERS MUST SUPPLY THE FOLLOWING SPECIFIC INFORMATION FOR EACH ITEM OR GROUP OF ITEMS OF THE EQUIPMENT:

1. Conformation of Equipment:

Whether the Equipment offered conform to the particulars specified in the Schedules; if not, details of deviations must be stated in Annexure "F".

2. Manufacturing Details:

- (i) Brand of Equipment.
- (ii) Name and address of Manufacturer; and
- (iii) Country of origin of Equipment.

3. Delivery Schedule: `

- (i) Earliest date by which delivery can be effected;
- (ii) Complete schedule of delivery; and
- (iii) If the delivery period is different for different items, it must be indicated item wise.

4. Packing Specification:

Whether the specifications for packing given in the Tender Documents will be adhered to.

ANNEXURE "C1"

**FORM OF SCHEDULE TO TENDER FOR EQUIPMENT
MANUFACTURED/AVAILABLE IN PAKISTAN WITHOUT INVOLVING IMPORT**

Due by _____ hours on _____
(time) (date) (month) (year)

SCHEDULE TO TENDER NO. _____ DATED _____

The Tender will be opened at _____ hours on _____
(time) (date) (month) (year)

Delivery on or before _____
(date) (month) (year)

Rates and amount to be quoted in Pakistani Rupees

S.N o.	Code / Item No.	Description Of Equipment	Detailed Specifications of Equipment with Model No.	Quantity Of Equipment.	Unit	Rate Per Unit	Total Price.
1	2	3	4	5	6	7	8

It is certifies that:

- i) The Equipment offered above conform in all respects with the particulars/specifications given in the Tender Documents' and
- ii) All the terms and conditions of the Tender Documents are acceptable to us.

(signature of the authorized person)

SEAL

(name of the authorized person)

(name of the Tenderer)

**FORM OF SCHEDULE TO TENDER FOR EQUIPMENT
IMPORTED FROM APPROVED COUNTRIES.**

Due by _____ hours on _____
(time) (date) (month) (year)

SCHEDULE TO TENDER NO. _____ DATED _____

The Tender will be opened at _____ hours on _____
(time) (date) (month) (year)

Delivery on or before _____
(date) (month) (year)

PART 1. The rates quoted in the Table below must be on C&F basis.

S. No.	Code/ Item No.	Description Of Equipment	Detailed Specifications Of Equipment with Model No.	Quantity Of Equipment.	Unit	Rate Per Unit	Currency	Total C&F Price	Country of Origin
1	2	3	4	5	6	7	8	9	10

PART 2. The rates quoted in the Table below must be in Pakistani Rupees

S.No.	Code/ Item No.	Description of Equipment	Quantity Of Equipment	Unit	Rate Per Unit	Total Price.
1	2	3	5	6	7	8

(Continued on the next page)

ANNEXURE “C2”

NOTE:

In the Table below, the columns 1 to 5 and 8 are to be filled in by the Tenderer before submitting the Tender, while the columns 6,7 and 9 are to be filled in jointly by the Project Director- USPCAS-W, Mehran University of Engineering and Technology, or his representative, and the Tenderer, or his representative, after opening of the Tender.

S. No.	Code/ Item No.	Description of Equipment	Total C&F Price for Part 1	Currency	Exchange Rate	Total Price for Part 1 (Rs.)	Total Price for Part II (Rs.)	Total Cost (Rs.)
1	2	3	4	5	6	7	8	9

It is certified that:

- i) The Equipment offered above conform in all respects with the particulars/specifications given in the Tender Documents; and
- ii) All the terms and conditions of the Tender Documents are acceptable to us.

(name of the Tenderer)

(signature of the authorized person)

(name of the authorized person)

SEAL

BID BOND

(Bank Guarantee)

Guarantee No _____

Executed on _____

Expiry date _____

Letter by the Guarantor (Bank) to the Employer (USPCAS-W/ University)

Name of Guarantor (Bank) with address: _____

Name of Principal (Tenderer) with address: _____

Penal sum of Security (Bond),(in figures and words): _____

Tender Reference No. _____ Date of Tender _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Tender and at the request of the said Principal (Tenderer), we the Guarantor above-named are held and firmly bound unto the Project Director, USPCAS-W, Mehran University of Engineering and Technology, Jamshoro, acting through the Procurement Manager, USPCAS-W, Mehran University of Engineering and Technology, {hereinafter called The “Employer” (“University”)} in the sum stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal (Tenderer) has submitted the accompanying Tender numbered and dated as above for supply, installation, putting into operation and demonstration of Laboratory Equipment at USPCAS-W the premises Mehran University of Engineering & Technology, Jamshoro, to the said Employer (University); and

WHEREAS, the Employer (University) has required as a condition for considering the said Tender that the Principal (Tenderer) furnish a Bid Bond in the above said sum to the Employer (University), conditioned as under:

- 1) that the Bid Bond shall remain valid for a period of 28 days beyond the period of validity of the Tender;

2) that in the event of;

- a) the Principal (Tenderer) withdraws his Tender during the period of validity of the Tender;
- b) the Principal (Tenderer) does not accept the correction of his Tender Price, pursuant to Clause 16 of “Instructions to Tenderers”; or
- c) failure of the successful Tenderer to:
 - i) furnish the required Contract Performance Bond, in accordance with Clause 3 of “Instructions to Tenderers”; or
 - ii) sign the proposed Contract Agreement, in accordance with Clause 4 of the “Conditions of Contract”;

then the entire sum be paid immediately to the said Employer (University) as liquidated damages and not as penalty for the successful Tenderer’s failure to perform.

NOW THEREFORE, if the successful tenderer shall, within the period specified therefore, on the prescribed form presented to him for signature enter into a formal Contract with the said Employer (University) in accordance with his Tender as accepted and furnish within twenty eight (28) days of his being required to do so, a Contract Performance Bond with good and sufficient surety, as may be required, upon the form prescribed by the said Employer (University) for the faithful performance and proper fulfillment of the said Contract or in the event of rejection of the said Tender by the Employer (University) within the time specified then this obligation shall be void and of no effect, but otherwise to remain in full force and effect.

PROVIDED THAT, the Guarantor shall forthwith pay to the Employer (University) the said sum stated above upon first written demand of the Employer (University) without cavil or argument and without requiring the Employer (University) to prove or to show grounds or reasons for such demand notice of which shall be sent by the Employer (University) by registered post duly addressed to the Guarantor at its address given above.

PROVIDED ALSO THAT, the Employer (University) shall be the sole and final judge for deciding whether the Principal (Tenderer) has duly performed his / her obligations to sign the Contract Agreement and to furnish the required Contract Performance Bond within the time stated above, or has defaulted in fulfilling the said requirements and the Guarantor shall pay without objection the sum stated above upon first written demand from the Employer (University) forthwith and without reference to the Principal (Tenderer) or any other person.

IN WITNESS WHEREOF, the above bounden Guarantor has executed the instrument under its seal on the date indicated above, the name and seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative pursuant to the authority of its governing body.

Guarantor (Bank)

Witness:

1. _____
(Signature)

(Name, Title, Address and Seal)

2. _____
(Signature)

(Name, Title, Address and Seal)

(Signature)

(Name)

(Title)

(Corporate Guarantor Seal)

CONTRACT PERFORMANCE BOND
(Bank Guarantee)

Guarantee No. _____

Executed on _____

Expiry Date _____

Letter by the Guarantor (Bank) to the Employer (University)

Name of Guarantor (Bank) with Address: _____

Name of Principal (Supplier / Contractor) with address:

Penal Sum of Security (Bond), (in words and figures) _____

Letter of Acceptance No. _____ Dated _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the Tender Documents and above said Letter of Acceptance (hereinafter called the Documents) and at the request of the said Principal (Supplier / Contractor) we, the Guarantor above named, are held and firmly bound unto the Project Director, USPCAS-W, Mehran University of Engineering and Technology, Jamshoro, Sindh, acting through the Procurement Manager, USPCAS-W, Mehran University of Engineering and Technology {hereinafter called the Employer (University)} in the penal sum of amount stated above for the payment of which sum well and truly to be made to the said Employer (University), we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal (Supplier / Contractor) has accepted the Employer's (University's) above said Letter of Acceptance for the supply, installation, putting into operation and demonstration of Active & Passive Network Equipment at the premises of Mehran University of Engineering and Technology, Jamshoro, Sindh.

NOW THEREFORE, if the Principal (Supplier / Contractor) shall well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the said Documents during the original terms of the said Documents and any extensions thereof that may be granted by the Employer (University), with or without notice to the Guarantor, which notice is hereby waived and shall also well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the Contract and of any and all modifications of the said Documents that may hereafter be made, notice of which modifications to the Guarantor being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue till the expiry of the guaranty period as per Clause 23 of the Conditions of Contract.

Our total liability under this Guarantee is limited to the sum stated above and it is a condition of any liability attaching to us under this Guarantee that the claim for payment in writing shall be received by us within the validity period of this Guarantee, failing which we shall be discharged of our liability, if any, under this Guarantee.

We, _____ (the Guarantor), waiving all objections and defenses under the Contract, do hereby irrevocably and independently guarantee to pay to the Employer (University) without delay upon the Employer's (University's) first written demand without cavil or arguments and without requiring the Employer (University) to prove or to show grounds or reasons for such demand any sum or sums up to the amount stated above, against the Employer's (University's) written declaration that the Principal (Supplier / Contractor) has refused or failed to perform the obligations under the Contract which payment will be effected by the Guarantor to the Employer's (University's) designated Bank and Account Number.

PROVIDED ALSO THAT the Employer (University) shall be the sole and final judge for deciding whether the Principal (Supplier / Contractor) has duly performed his obligations under the Contract or has defaulted in fulfilling the said obligations, and the Guarantor shall pay without objection any sum or sums up to the amount stated above upon first written demand from the Employer (University) forthwith and without any reference to the Principal (Supplier / Contractor) or any other person.

IN WITNESS WHEREOF, the above bounden Guarantor has executed this Instrument under its seal on the date indicated above, the name and corporate seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body

	Guarantor (Bank)
Witness:	
1. _____	_____
(Signature)	(Signature)
_____	_____
Name, Title and Address (Seal)	(Name)
2. _____	_____
(Signature)	(Title)
_____	_____
Name, Title and Address (Seal)	Corporate Guarantor (Seal)

ANNEXURE “F”

Statement Describing Deviation from Specifications.

S.No.	Code No.	Description of Equipment	Statement of Variation from Specifications	Reasons for Variations.
1	2	3	4	5

(signature of the authorized person)

(name of the authorized person)

SEAL

On behalf of

(name and address of the Tenderer)

➤ **Procurement of Laboratory Equipment
of Pilot Scale Water and Waste Water
Treatment Field at USPCAS-W, MUET,
JAMSHORO**

ITEM CODE

PSW&WTF

S.No.	Name of Equipment	QTY	Specification	Rate	Amount
PSW& WTF/ 01	Flue Gas Analyzer	1	<p>Operating Temp. -10 °C to 55 °C Storage temperature: -20 °C to 50 °C Temp. Measuring range: -40 to +1200 °C Pressure Measurement range: 0 to +300 hPa O2 Measurement Range: 0 to 25% Vol. CO Measurement (without H2 Compensation): at least upto 10,000 ppm Ambient CO Measurement: at least upto 500 ppm NO Measurement: From 0 to 4000 ppm NO2 Measurement: From 0 to 500 ppm SO2 Measurement: From 0 to 5000 ppm Ambient CO2 Measurement: at least upto 10,000 ppm Control Unit - Providing remote control operation up to 300 ft away Color graphic display to see in dark or bright conditions Go wireless with long-range 300 ft. Bluetooth (or wired to over 3,000 ft.) to eliminate long sample lines Analyzer box - for high accuracy measurements Containing up to six sensors, pumps, gas path, sample conditioning Conditions the gas sample automatically, thermoelectric (peltier) chiller Automatic flow-controlled high strength pump User defined programs with onboard memory to 250,000 values User configured testing programs Printer should to available Standard gas sampling probes & storage. Batteries 4AA Type. Warranty: Minimum 02 years repair and maintenance with parts warranty</p>		
	Name of	QT			

S.No.	Equipment	Y	Specification	Rate	Amount
PSW&WTF/02	Total Nitrogen Analyzer	01	<p>-It should analyze water, liquid, solid and gas samples from very low levels (20 ppb) to very high concentrations (5000 ppm).</p> <p>-It should be capable to new types of analyses (from nitrogen to sulfur and/or chlorine).</p> <p>-It should be equipped with a liquids and solids auto sampler.</p> <p>Warranty: Minimum 03 years repair and maintenance with parts warranty</p> <p>UPS- compatible with equipment at least one 1 hour backup</p>		
PSW&WTF/03	Chemical peristaltic pump	03	<p>Precise peristaltic pump delivers flow rates from 0.07 to 1140 mL/min. Its speed can be adjusted manually and automatically through the external control interface. Store the running parameters automatically. Provide Tubing and spare parts.</p> <p>Warranty at least for 2 years</p>		
PSW&WTF/04	Peristaltic pump (Water and sediment sampling)	02	<p>Exceptional field durability, Operate from 60 to 600 RPM, Up to 1 liter/min. Operate to a depth of 27 feet (8 meters), Variable speed control , AC only, combination , Two pumping stations available, which can be piggybacked for multi-station pumping • Reversible flow feature for back-flushing • Disposable and dedicated tubing means controlled costs and no decontamination issues.</p>		
S.No.	Name of Equipment	QTY	Specification	Rate	Amount

					nt
PSW& WTF/ 05	Small RO Unit (mobile cabinet)	01	<p>The RO unit is fully self-contained in a mobile cabinet. Comprehensive instrumentation should be provided with digital meters displaying temperatures and system pressure. In addition to the membrane module, the cabinet also should house, feed and permeate tanks, a plate heat exchanger and positive displacement pumps. Connection to cooling water and a suitable electrical supply in all that is required for normal operation. All parts in contact with the process fluid should be constructed from hygienic design materials such as stainless steel, PTFE and silicone rubber.</p> <p>The RO/UF unit should an efficient Clean-In-Place (CIP) facility and could be easily dismantled for servicing or maintenance.</p> <p>The unit should be supplied with a pack of both (4+4) extra modules of R.O. Membranes and U.F. Membranes Membranes could be installed or removed rapidly for use in either process.</p> <p>Using small quantities of process fluid, operating parameters could be established and then optimized to effect a confident transition to full-scale.</p> <p>Specifications Concentration/clarification/ fractionations and standardization of:</p> <ul style="list-style-type: none"> ➤ milk ➤ whey ➤ fruit juices ➤ vegetable juices ➤ alcoholic beverages • Treatment of effluent • Enzymes, antibiotics and organic acids <p>Flow rates: 30, 18, 15 and 9 L/minute Pressures: Variable up to 55 bars Membrane Module suitable for two (provide 2 extra pairs) Tube side volume: 75ml Typical permeate flow: 5-50ml/min Feed tank capacity: 15 liters Permeate tank capacity: 15 liters Warranty: Minimum 03 years repair and maintenance with parts warranty</p>		
S.No.	Name of Equipment	QTY	Specification	Rate	Amount

PSW& WTF/ 06	Anaerobic Reactor	01	<p>A self-contained, floor-standing anaerobic tank reactor, volume 20 liters</p> <p>Configurable as:</p> <ul style="list-style-type: none"> – Continuous Stirred Tank Reactor (CSTR) – Packed Bed Reactor (PBR) – Up flow Anaerobic Sludge Blanket Reactor (UASB) <p>It should have following :</p> <ul style="list-style-type: none"> • Stirrer, motor and baffles should be removable for non-stirred configurations • Variable depth liquid sampling points • Measures reactor temperature, jacket temperature and vessel pH • Programmable logic controller (PLC) provides temperature control, pH control and gas collection (rate and totalisation) calculations • Jacket heating system with pump and hot water vessel. Temperature is PID controlled room temperature to 55oC. • Automated volumetric gas collection system measures, which adds less than 10 bar back pressure in the reactor. • Complete with an automated pH dosing system to maintain the vessel pH within a predetermined range (user programmable) • User calibration of pH and gas collection system • Feed flow rates from 0.06 to 4.8 l/hr (using interchangeable peristaltic hoses) • Gas sample point • Data logger and software as standard (requires PC) <p>Warranty: Minimum 03 years repair and maintenance with parts warranty</p>		
S.No.	Name of Equipment	QTY	Specification	Rate	Amount
PSW& WTF/	Electro Spinning	01	<p>This system should have the following components:</p> <ol style="list-style-type: none"> 1. High voltage power supply (0-30 KV DC, precise 		

07	System		adjustable) 2. Collector (rotating metallic drum) 3. Syringe pump (multi nozzles) 4. Coaxial nozzles in different sizes Additional: One High voltage power supply (0-30 KV DC, precise adjustable) Power requirements 200-240 V AC, 50/60Hz, single phase		
PSW& WTF/ 08	Biofilm Annular Reactor	02	Biofilm Annular Reactor consists of a stationary outer cylinder and a rotating inner cylinder. Process fluid will be circulated in the annulus between the two cylinders. <ul style="list-style-type: none"> • This should operate with a variable speed motor. • The rotational speed of the inner cylinder is to be set to provide liquid/surface shear similar to the pipe flow shear of the process water system. • It should be manufactured using an inner, slotted polycarbonate cylinder and a glass outer cylinder. • It should be Twenty (20) slides flush mounted on the rotating inner cylinder. • The slides should be in stainless steels, plastics, and various alloys • The reactor unit should be autoclavable to 121° C. • It should be jacketed for temperature control. 		
PSW& WTF/ 09	Autoclave	01	It should be quipped with a fully automatic microprocessor control with LCD-Display and foil keyboard. A large variety of accessories for example, FDA/ GMP conform version, exhaust air filtration or push-through version, makes it possible to fit the autoclave for every application. <ul style="list-style-type: none"> • Autoclave chamber capacity of 440 liters with pressure controller • It should have automatic door with low-maintenance door seal. • It should be equipped with a warm holding program for liquids and timer for programming start time point. • It should have a long-life flexible temperature sensor for the sterilization time trigger. • Vacuum pump set with a water saving device for single-stage or fractioned prevacuum and final drying under vacuum • Transport and loading trolley for ergonomic loading and unloading. 		
S.No.	Name of Equipment	QTY	Specification	Rate	Amount
PSW& WTF/ 10	Confocal Laser Scanning	01	Speed: 19 × 2 speed levels, up to 13 images/sec With 512 × 512 pixels (max. 430 images/sec), up to 6875 lines per second		

	Microscope for Multi-User		<p>Applications: Confocal microscopy applications in cell biology, neuroscience, cancer research, developmental biology / Three dimensional, fluorescence imaging of cells, tissues, and model organisms / Live cell imaging / Spectral imaging / Multiphoton imaging for deep tissue imaging / Imaging cleared tissues / single molecule imaging and FCS/FCCS applications / correlative microscopy with super resolution or electron microscopy</p> <p>Validated Applications: Microscopy, Fluorescence, Multichannel Fluorescence, Live Cell Imaging, FRET, FRAP, 3D Imaging, Time Lapse, NIR</p> <p>Detector 3 or 34 descanned spectral channels (GaAsP and/or PMT), Airyscan detector, 2 additional GaAsP channels (BiG.2), Up to 6 non-descanned GaAsP detectors, Up to 12 non-descanned GaAsP or PMT detectors total, Transmitted light detector (T-PMT)</p> <p>Resolution: 4 × 1 to 8192 x 8192 pixels</p> <p>Also for multiple channels, continuously adjustable</p> <p>Lasers 355 nm, 405 nm (UV laser), 440 to 633 nm (VIS laser)</p> <p>NIR laser for multiphoton imaging - Ti: Sa, OPO</p> <p>Equipment Type (standardized)Laser Scanning Confocal, Multiphoton</p> <p>Features (standardized) Camera Compatible, Incubator/Control Chamber</p>		
PSW&WTF/11	Stirred Cell for Filtration Tests, 200 mL	02	<p>Cap, stir bar, body, membrane holder: polystyrene</p> <p>Gasket, O-ring: Silicone;</p> <p>Base, stir bar support: Acetal;</p> <p>Pressure tube: Polyethelene;</p> <p>Filtrate tube: Tygon® tubing;</p> <p>Stir bar retaining ring, washer: 316 stainless steel</p> <p>Stirred Cell:</p> <p>Maximum Working Volume, mL: 200; Membrane Diameter, mm: 63; Effective Membrane Area, cm²: 28.7; Hold-up Volume without tubing, mL: less than 0.1; Height, cm: 15.5; Base, cm: 8.4</p> <p>Dipsensing pressure vessels for filtratrion (Volume=5L, stainless steel)</p>		
S.No.	Name of Equipment	QTY	Specification	Rate	Amount
PSW&WTF/12	Ultrafiltration Discs,	02 PA C	cellulose, 10 kDa NMWL, 63.5 mm		

PSW& WTF/ 13	Tubing (Polypropylene Tubing,	02	3/16" X 1/4", 100'(package)		
PSW& WTF/ 14	Pressure Gauge	10	w/Tee connector, 0 to 3bar		
PSW& WTF/ 15	Digital Pressure Gauge	04	w/T-connector, -1 to 3bar		
PSW& WTF/ 16	Peristaltic Pump	10	w/Head, Variable-Speed Console Drive Max Flow Rate (mL/min) =1130, Max RPM (rpm)= 200, Power (VAC)=180 to 260		
PSW& WTF/ 17	Peristaltic Pump with head,)	01	variable-speed consol drive, flow range= 17 to 1700 mL/min, easy load Pump head, Tygon E-LFL tubing 3 meter (ID= 6.4mm		
PSW& WTF/ 18	Infrared CO2 Analyzer:	01	Measurement Range: 0-20,000 ppm RMS Noise at 370 ppm with 1 sec signal filtering: <1 ppm Accuracy: <3% of reading Calibration Drift Zero Drift: <0.15 ppm/°C Span Drift: <0.03%/°C Total Drift at 370 ppm: <0.4 ppm/°C Measurement Principle: Non-Dispersive Infrared (NDIR) Traceability: Traceable gases to WMO standards from 0 to 3,000 ppm. Traceable gases to EPA protocol gases from 3,000 to 20,000 ppm Pressure Compensation Range: 15 kPa - 115 kPa (2.2-16.7 psi) Maximum Gas Flow Rate: 1 liter/min (0.035 ft3/min) Output Signals: Two Analog Voltage (0-2.5V or 0-5V) and Two Current (4-20mA) Digital: TTL (0-5V) or Open Collector DAC Resolution: 14-bits across user-specified range Source Life: 18,000 Hours (~2 years continuous use) Power Requirements: Input Voltage 12-30 VDC; 1.2A @ 12V (14W) maximum during warmup with heaters on; 0.3A @ 12V (3.6W) average after warmup with heaters on Operating Temperature Range: -20 to 45		
S.No.	Name of Equipment	QTY	Specification	Rate	Amount

PSW& WTF/ 19	Ultrasonic Processors with Thumb Pulse	01	150 microliters to 150 milliliters Power supply: Net power output: 130 Watts. Frequency: 20 kHz CONVERTER: Piezoelectric lead zirconate titanate crystals (PZT) with pulsing button. Diameter: 1 1/4" (32 mm) Length: 5 3/4" (146 mm)) Cable length CV 18: 5' (1.5 m) STANDARD PROBE: Tip diameter: 1/8" (3 mm). Processing capability: 250 µl to 10 ml.* Length: 5 7/16" (138 mm). Titanium alloy Ti-6Al-4V. Autoclavable ELECTRICAL REQUIREMENTS: 220 V, 50/60 Hz		
PSW& WTF/ 20	SYRINGE, INFUSION/WITHDRAWAL PUMP, 220 V	02	Max. No. of Syringes: 2 Syringe Size: 10 µl to 140 ml Advance Per Microstep: 0.165 micron (1/16 step) Max Step Rate (1/2 Step): 1600/sec Min Step Rate: 1 step / 100 sec. Accuracy: ±<1%, Reproducibility: ±0.1%		
PSW& WTF/ 21	Air Sampling Pump, 1 - 5,000 cc/min	02	ambient or standard temperature and pressure corrected display data-logging for up to 16 sampling events back pressure capability of up to 40" H2O in high flow and up to 40" H2O in low flow		
PSW& WTF/ 22	Laser Scattering Particle Size Analyzer	01	Particle size range from 0.1 – 1000µm, Manual wet dispersion units Manual dry powder dispersion unit Particle size distribution: Suspensions, emulsions, dry powders Data acquisition rate: 10kHz Typical measurement time<10 s Red light source: Max. 4mW He-Ne, 632.8nm Lens arrangement: Reverse Fourier (convergent beam) Effective focal length: 300mm Detector: Arrangement: Log-spaced array Angular range: 0.032 - 60 degrees Alignment: Automatic Supply voltage: 220-240V (60Hz)		
S.No.	Name of Equipment	QTY	Specification	Rate	Amount
PSW& WTF/	Solid phase extraction	03	for large volume sampler for 6 ml SPE tubes with SPE vacuum trap kit (polypropylene flask, a one-hole rubber		

23	manifold 24 ports		stopper, 4" (10cm) of polypropylene tubing and 5' (1.5m) of red rubber vacuum hose) Large volume sampler tube adapter for use with SPE extraction manifold		
PSW& WTF/ 24	Membrane module	20	Microfiltration) flat sheet, PTEF, area = 0.1 m ² ; nominal pore size=0.4µm; operating pressure = -50 to 0; dimensions (mm)= A5, 5t; Chemical resistance= 3000 mg/L Cl-, operating temperature 0-70°C;		
PSW& WTF/ 25	Vacuum filtration set;	02	include 300 ml glass filter holder, clamp, 1000ml ground-joint flask		
PSW& WTF/ 26	Water Level sensor	10	(for bench scale application, floating)		
PSW& WTF/ 27	Silicone tubing,	02 PA C	ID=7mm, 10M/pk		
PSW& WTF/ 28	Air flow meter	10	w/connector, 10L/min Suitable for standard tubing for bench scale lab applications		
PSW& WTF/ 29	Laboratory scale diaphragm air pump:	06	Max flow 100 liter/min (3.5 cfm)		
PSW& WTF/ 30	Overhead Stirrer.	03	Mixing vol about 10L; Laboratory stirrer for simple stirring tasks of up to 10 liters (H ₂ O) with ideal speed range from 40 - 1,200 rpm. Especially suitable for schools, universities and inspection laboratories		
PSW& WTF/ 31	Propeller stirrer, 4-bladed	03	Stirrer Ø: 100 mm Shaft Ø: 8 mm Shaft length: 540 mm		
S.No.	Name of Equipment	QTY	Specification	Rate	Amount
PSW& WTF/ 32	Ultrasonic water bath:	01	Capacity 5 to 10 L; Temp range: Ambient to 90 °C. Stainless steel basket		
PSW&	Flask	01	(Shaking incubator): Capacity: 16 flask/ 250 ml, temperature		

WTF/ 33	Platform Shaker		controlled		
PSW& WTF/ 34	Mechanical Timer	20	with switch knob (24 hours, 5 minutes interval)		
PSW& WTF/ 35	Urethane tubing, 8mm	03 pac k			
PSW& WTF/ 36	Silicone (Platinum-cured) tube for	03	pump (3 m, ID=1.6mm), max flow rate=130 mL/min, min temperature(dynamic)= -40°C, max temperature (dynamic)= 100°C		
PSW& WTF/ 37	HEPA Disposable Filter,	02 pac k x10	Outlet Style= 1/4 to 3/8 in. stepped barb, Inlet Style= 1/4 to 3/8 in. stepped barb, Filtration Area (Metric) = 16cm ² , Diameter (Metric) Disc= 50 mm, material (membrane) = Glass fiber, Autoclaved		
PSW& WTF/ 38	Pharmed tubing for pump	03	, Hose Barb Size (in)=1/8, tubing ID=3.1mm, Max Flow Rate (mL/min)=480, Max Pressure (PSI)=40, Max Temperature (Dynamic) (° C)=100		
PSW& WTF/ 39	SPE Bulk Packing,	10	pack of 100 g; Reservoir Capacity: 6 ml; Ploypropylene (PP) hardware and PE frits. Pk/30		
PSW& WTF/ 40	6 cc Vac cartridge,	10	150 mg sorbent; 30 µm particle, 30/pk		
PSW& WTF/ 41	Florisil:	05	1.0 g/3ml, PP SPE tubes, stainless steel or PE frits; Quantity: pk/50		
S.No.	Name of Equipment	QTY	Specification	Rate	Amount
PSW& WTF/ 42	Bipotentiostat	1 ea	Windows-based electrochemical instrument Galvanostat: · Galvanostat applied current range: 3nA – 250mA · Applied current accuracy: 20 pA ± 0.2% if > 3e-7 A, ±1% otherwise · Applied current resolution: 0.03% of applied current range · Measured potential range: ±0.025 V, ±0.1 V, ±0.25 V, ±1 V, ±2.5 V, ±10 V Electrometer: Waveform Generation and Data Acquisition: Experimental Parameters: CV and LSV scan rate: 0.000001 to 10,000 V/s, two channels simultaneously · Potential		

			<p>increment during scan: 0.1 mV @ 1,000 V/s · CA and CC pulse width: 0.0001 to 1000 sec · CA minimum sample interval: 1 us, both channels · CC minimum sample interval: 1 us · True integrator for CC · DPV and NPV pulse width: 0.001 to 10 sec · SWV frequency: 1 to 100 kHz · i-t sample interval: minimum 1 us, both channels · ACV frequency: 0.1 to 10 kHz · SHACV frequency: 0.1 to 5 kHz · FTACV frequency: 0.1 to 50 Hz, simultaneously acquire 1st, 2nd, 3rd, 4th , 5 th, and 6th harmonics ACV data · IMP frequency: 0.00001 to 1 MHz · IMP amplitude: 0.00001 V to 0.7 V rms</p> <p>Accessory: · User's manual in pdf format, no printed manual · Electrode leads · USB communication cable · Power cord</p> <p>Sub parts of Boiopotentiostat: Ag/AgCl Reference Elec (porous Teflon tip) 3/pk(3pk); Pt Wire Counter Electrode (5 pk); 25um dia. Au Microelectrode 3/pk(1 pk); 25um dia Pt Microelectrode 3/pk(1 pk); 2mm dia. Au Working Electrode 3/pk(2 pk); 2mm dia. Pt Working Electrode 3/pk(1pk); 3mm dia. GCE 3/pk(3 pk); Non-aqu Ag/Ag+ Ref Ele (porous Teflon tip) 3/pk(1pk); Calomel Reference Electrode(2 ea); Mercury/Mercurous Sulfate Ref Electrode(2 ea); Electrode Leads for CHI760E(2 ea); Simple Cell Stand(2 ea); Cell Top (including Pt wire counter electrode) 2 ea; Cell Top (including Pt wire counter electrode) 2 ea; Glass Cell 15 ea; Teflon Cap 10 ea; Printed Electrodes (3-electrodes) 40/pk(1 pk); 3mm dia. Printed carbon electrode 40/pk(1 pk); CS-3A Cell Stand Ver 1.1(1 ea); SVC-3 Voltammetry cell(2 ea); CB-EE Remoto cable(1 ea);</p> <p>IDA (Au) 10 um(2 ea); IDA (Pt) 10 um(2 ea); IDA (Carbon) 10 um(2 ea); Cable kit for IDA electrode(2 ea).</p>		
S.No.	Name of Equipment	QTY	Specification	Rate	Amount
PSW& WTF/43	Lab MBR for wastewater Treatment	01	<p>Bioreactor tank , size 50x25x30cm , Feed tank of volume of 30-40 liters</p> <p>Level control tank of volume of 3-4 liters, feed pump, Circulation pump to level control tank, Air pump Maximum flow rate 550 l/h , Air diffuser (5 units), Bubble size 100-500 µm, Air flow meters, Submerged membrane module (depend on requirement), Vacuum pump, Centrifugal pump , Pressure gauges , Valves and pipeline, 04 Cross flow membrane module s(Microfiltration)</p> <p>All the required components. Easy to operate and maintenance.</p>		

			Warranty: 03 years for service.		
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Signature with Stamp
Contractor

Signature
Procurement Manager
USPCAS-W, MUET, Jamshoro