**KENYA SUGAR RESEARCH AND TRAINING INSTITUTE**

22ND MAY, 2026

TO ALL INTERESTED/ELIGIBLE BIDDERS

DEAR ALL

**ADDENDUM No.1**

**TENDER NO: KESRETI/OT/010/2025-26**

**TENDER NAME: SUPPLY, INSTALLATION AND COMMISSIONING OF LABORATORY EQUIPMENTS**

Kenya Sugar Research and Training Institute (KESRETI) would wish to bring to your attention the following clarifications

<table>
<tr><th>No.</th><th>Item Description</th><th>Areas to be clarified</th><th>Clarification</th></tr>
<tr><td>1.</td><td>Kjedahl Automatic Distilation and Titration Unit</td><td>Kjeldahl digestion block unit 1. How many samples do you want to digest simultaneously? 8, 20, or 40? 2. Do you require a digestion system with lift or without lift. Is automatic</td><td>We need Kjedahl Automatic Distillation and Titration Unit with Disgestion Block:<table><tr><td>We need Kjedahl Automatic Distillation and Titration Unit with</td><td>460 x 415 x 740 mm (with lift)</td></tr></table></td></tr>
</table>

| | | | |
|---|---|---|---|
| | | lifting/removal rack functionality required? | Disgestion Block: |
| | | | We need Kjedahl Automatic Distillation and Titration Unit with Disgestion Block: 20 |
| | | | We need Kjedahl Automatic Distillation and Titration Unit with Disgestion Block: bis 39 kg (20 x 400 ml tubes, with lift) |
| | | | We need Kjedahl Automatic Distillation and Titration Unit with Disgestion Block: **KJELDATHERM® digestion block** Insert rack Multi-level console Exhaust manifold Drip tray Digestion tubes Electronic controller Operating manual) |
| 2. | ICP-OES | Please clarify the justification for integrating Laser Ablation (LA) with ICP-OES instead of ICP-MS, considering LA applications are more commonly associated with trace and ultra-trace elemental<br><br>analysis using ICP-MS due to its superior sensitivity and lower detection limits | **Technical Specifications for ICP-OES WITHOUT LA**<br>**Body**<br>A bench top ICP-OES system is required for the analysis of trace elements in a variety of samples including environmental, Pharmaceutical and food.<br>2. The instrument and any accessories supplied should be computer controlled by central-desktop PC with Windows based software.<br>3. The instrument shall provide quantitative measurement of analytes.<br>4. All service connections should be located on the side or front of the instrument allowing full access to all necessary components for maintenance of the instrument without requiring pulling the instrument away from the wall.<br>**PLASMA** |

| | | | |
|---|---|---|---|
| | | and considering the<br>cost associate with LA and your application as not for material science or geochemistry.<br>2. Please clarify the expected analytical performance of the LA-ICP-OES system for trace-level solid analysis<br>3. With reference to the requirement for “easy switching between liquid and laser ablation systems,” kindly clarify:<br>Expected switching duration<br>Whether recalibration is required after switching if any ?<br>Any alignment or optimization procedures necessary during transition<br>5.0 I would suggest for you application for soil, fertilizer and plants analysis to changes specs and remove LA for the OES or add LA with MS and in the case<br>one change LOD of 0.015g/L and <1g/L for standard OES. | 5. The plasma source shall consist of an integral, water cooled, digital solid state, RF generator at a frequency of ~ 27 MHz with fast, dynamic frequency matching.<br>6. Plasma ignition, operating power and shutdown shall be computer controlled to enable<br>optimised parameters to be stored in an analytical method and recalled, providing the ability to automatically alter plasma parameters during a run. Ignition of plasma should<br>be initiated at a single keystroke.<br>7. Computer controlled flow Controllers shall be provided for the nebuliser, coolant and auxiliary gas lines to provide: -<br>a. Optimum plasma stability by providing constant gas flows to the plasma.<br>b. High precision resetting of plasma gas conditions from stored method files.<br>c. Automated switching between plasma modes within a sample<br>8. Complete shielding of the ICP source from stray UV and RF emissions shall be provided.<br>9. A viewing window with UV protection shall be included to enable the operator to view the plasma and interface in complete safety. In addition, the ability to view the plasma directly on the instrument PC via an integrated camera stream should be provided.<br>10. Declaration of Conformity shall be provided.<br>**SAFETY**<br>11. Safety interlocks throughout the system shall provide safe shut down of the generator without damage to the instrument in the event of power failure. In addition, all failure events must be recorded to an electronic error file and must include event description, time and date.<br>12. The instrument will include an open architecture sample introduction system with the<br>nebuliser and spray chamber mounted externally to the torch box / RF environment, for<br>ease of access and maintenance.<br>**SAMPLE INTRODUCTION SYSTEM** |

| | | | |
|---|---|---|---|
| | | | 13. A low volume, cyclonic spray chamber and a high-performance concentric nebulizer (made of glass) shall be provided for optimum stability with fast washout and minimum cross contamination.<br>14. A semi-demountable quartz ICP torch with a screw fit injector (with different diameters and sizes as options) shall be provided for ease of alignment. The torch should be mounted in a “snap-in” holder and be self-locating to minimise the need for torch<br><br>alignment when re-installing after routine cleaning. The torch assembly will also feature “connection free” operation for all torch gases, i.e. no fittings need to be touched during exchange of the torch.<br>15. The injector used for general use on a dual view system shall have an injector diameter 2 mm.<br>16. 12. A HF resistant sample delivery system comprising inert nebuliser, spray chamber and injector shall be optionally available.<br>17. A sample delivery system capable of analysing organic samples comprising v-groove<br>nebulizer and baffled spray chamber shall be optionally available.<br>18. A sample delivery system capable of analysing high salt samples comprising high salt<br>nebulizer and baffled spray chamber shall be optionally available.<br>19. Sample introduction shall be via an integral, close coupled, 12 roller, low pulsation,<br>peristaltic pump. The pump shall be computer controlled. Provision shall be included for the pump to be automatically switched off upon instrument shutdown.<br>20. The instrument should have 4 channel peristaltic pump with a speed adjustable between 0 and 125 rpm.<br>21. A unique, ceramic cone interface shall act as seal to the polychromator. The interface design should facilitate ease of maintenance of the cones and any windows and seals<br>that seal the polychromator. |

| | | | |
|---|---|---|---|
| | | | **OPTICS**<br>22. The dual view system should have a vertical semi-demountable torch with a radial viewing slit. Both quartz and ceramic options should be available.<br>23. The viewing position of the torch must be adjustable under computer control to enable the position to be optimised whilst the plasma is lit, in complete safety to the operator.<br>24. It shall be possible to store and recall optimised settings in an analytical method along<br>with other instrument parameters.<br>25. The instrument should be fitted with "Plasma TV", a camera positioned in the torch area<br>to facilitate the viewing of the plasma via software on the computer screen.<br>26. Optimal plasma parameters shall be verified with an automated performance check. If<br>criteria are not met, an automatic tuning of source parameters will be conducted. A one-click process to turn the plasma on and conduct optimization procedures should be<br>available.<br>27. The RF power output should be adjustable between 750 and 1600 W.<br>28. The nebulizer gas flow should be MFC controlled and adjustable between 0.0 and 1.5 L/min.<br>29. The auxiliary gas flow should be MFC controlled and adjustable between 0 and 2.0L/min.<br>30. The plasma gas flow should be MFC controlled and adjustable between 0 and 20 L/min.<br>31. The start- up time from standby to the first stable measurement should be 5 minutes or less.<br>32. The instrument should have the capability of using a sheath gas.<br>33. Fore-optic design of the dual view system must enable Duo plasma viewing (axial (end on, on axis) & radial (side on, off axis) plasma viewing).<br>34. Simultaneous measurement of analyte, background and internal standard wavelengths must be enabled using a single detector. |

| | | | |
|---|---|---|---|
| | | | 35. Simultaneous measurement of analyte, background and internal standard wavelengths must be enabled using a single slit.<br>36. The ICP spectrometer must employ a high energy Echelle cross dispersion optical system which produces one optical image to allow simultaneous measurement of the spectrum between 167.021 and 852.145 nm.<br>37. The optical design must provide a distributed argon or nitrogen purged optical pathway<br>from the plasma to the detector without the requirement for use of a shear gas or air compressor accessory.<br>38. The ICP Spectrometer must employ a Peltier cooled Charge Injection Device (CID) detector, with solid state electronics to ensure high contrast/low noise imaging and simultaneous quantification of all wavelengths in the analytical range without blooming.<br>**SOFTWARE**<br>39. The instrument must offer full software control of all the instrument parameters via Windows based package.<br>40. The instrument software must support quantitative analysis.<br>41. The software provided with the instrument must comply with the guidelines set out in CFR Part 11of Title 21 of the Code of Federal Regulations concerning Electronic<br>Records, Electronic Signatures including a full audit trail and password-controlled<br>access to the system.<br>42. Control of accessories via “plug-in” technology must be available through the main instrument software and should be integrated seamless into the workflow of the<br>software.<br>43. Instrument set-up must be achievable through a one-click process that includes verifying performance criteria.<br>44. Instrument control software must provide an automated shut down procedure for shutdown of the plasma and any connected peripherals at the end of analysis.<br>45. All performance, optimization and calibration related reports must be automatically |

| | | | |
|---|---|---|---|
| | | | stored and readily printable through a one-click process.<br>46. Software must have the ability to capture the spectrum between 167.021 and 852.145 and display this graphically.<br>47. The control software must offer a fully integrated suite of quality control (QC) checks and automated actions based on user defined criteria. Internal standard monitoring during acquisition must be available.<br>**ADDITIONAL OFFERS**<br>48. The bidder must include a PC and Printer for the operation of the equipment.<br>49. The bidder must also install an appropriate exhaust system for the proper and safe operation of the equipment.<br>50. The bidder must supply a 10kVA UPS system with the instrument.<br>51. The system must install the system and handle the basic user training including user maintenance and troubleshooting.<br>52. The bidder must also include applications training for a minimum of 5 days at customer |
| | | | |

**NOTE**: This clarification/Addendum No. 1forms part of the tender requirements and is binding to all **interested bidders.**

All other details, terms and conditions including **closing date and time remain the same.**

**AG. DEPUTY DIRECTOR, SUPPLY CHAIN MANAGEMENT**
**FOR AG. MANAGING DIRECTOR**