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NOTICE OF CLARIFICATION AND ADDITIONAL PROJECT SPECIFICATIONS

PROJECT: PROCUREMENT OF CROPS AND SOIL LABORATORY EQUIPMENT AND FACILITIES

Lot Item No.	Item Description	Qty	Unit
1	**SUPPLY AND INSTALLATION OF VARIOUS CROPS AND SOIL LABORATORY EQUIPMENT:**	**1**	**lot**
	KNIFE MILL **Complete with:** 1. 1 pc 1liter grinding container of autoclavable plastic 2. 1 pc standard lid 3. 1 pc knife, stainless steel **Features:** • Efficient size reduction of up to 700 ml feed quantity due to a powerful 1000 W motor • pre- and fine-grinding in one mill: cutting action in regular mode, grinding by impact in reverse mode, pre-grinding in interval mode • perfect adaptation to application requirements by variable speed from 2.000 to 10.000 min^{-1} with an increment of 500 min^{-1} • Boost function with speed of 14.000 min^{-1} • 8 SOPs and 4 sequences can be stored • touch display with access to web portal with product and application related information • optional gravity lids or volume reduction lids for automatic reduction of the grinding chamber volume • grinding jar in plastic, stainless steel and glass available • all parts which come into contact with the sample material are autoclavable **Specification:** • Application: size reduction, homogenization and mixing. • Field of application: agriculture, biology, food, medicine/pharmaceuticals.	1	unit

	• Feed material: soft, medium-hard, elastic, containing water/fat/oil, dry fibrous • Size reduction principle: cutting • Material feed size: 40mm • Final fineness: < 300 micro meter • Batch size/feed quantity: with standard lid 700ml, with reduction lid 150-300ml, with gravity lid 300-600 ml. • Grinding chamber volume: with standard lid 1000 ml, with reduction lid 300/500 ml, with gravity lid 400-800 ml. • Speed at 50 Hz (60 Hz): digital, 2, 000 – 10.000 min $^{-1}$ • Material for grinding tools: blade: stainless steel/titantium, fixation of blade: PVDF, container: autoclavable plastic/plastic PP/stainless steel/glass. • Setting of grinding time: digital, 1 s – 3 min. • Interval operation: yes • Storable SOPs: 8 programmes/4 sequences. • Drive: series-characteristics motor. • Drive power – 1000W • Electrical supply data: 200V;60Hz. • Power connection: 1-phase. • Protection code: grinding chamber and keypad IP 42. • Power consumption: - 1000W • Net weight: - 10 kg.		
	INDUCTIVELY COUPLED PLASMA-OPTICAL EMISSION SPECTROPHOTOMETER (ICP-OES) **System Specifications:** • The RF Generator should be Free Running, solid state with 40 MHz frequency and power efficiency greater than 81% with < 0.1% variation in output power stability • The instrument should use flat plate technology for the plasma induction to reduce argon consumption (half the argon consumption of helical load-coil systems) • The power output stability shall be less than 0.1%, with a power output range of 1000 - 1500 Watts (with computer control of minimum 1-Watt increments). • The system should incorporates a vertically oriented plasma with complete dual-viewing optics under computer and software control. Any wavelength can be used in the radial, axial or mixed viewing modes in a single method. With the dual view capabilities, viewing of the plasma is accomplished by computer control of a mirror located in the optical path and allows selection of axial or radial view and adjustment of the plasma viewing in both the vertical and horizontal planes	1	Unit

	• Plasma ignition must be computer-controlled and totally automated. The plasma can be ignited automatically at a user-determined time and turned off automatically after an analysis • The system must constantly monitors water flow, shear gas pressure, argon pressures, sample-compartment door closure and plasma stability, and displays the interlock status on the computer screen as graphic symbols. If an interlock is interrupted, the plasma will immediately and safely shut down. • There should be a water-recirculating cooling system, with approximately 4 L/min flow capacity at 310 to 550 kPa and a temperature between 15 °C and 25 °C. • Nebulizer flow shall be Mass Flow Controlled between 0-2 L/min with 0.01 L/min increments. • For the Plasma gas a range of 8-20 L/min in steps of 1 L/min is required. For Auxiliary gas, a range of 0-2 L/min in steps of 0.1 L/min is required. • The system should be supplied with a demountable torch design using one-piece quartz tubing for plasma and auxiliary gas flow. There should be a standard torch which includes a 2.0-mm i.d. alumina injector for full corrosion resistance to all acids, including hydrofluoric and aqua regia. There should be also an externally mounted spray chamber integrated into an easily removed sample-introduction cassette. The sample-introduction cassette can be adjusted (with the plasma on) for maximum performance in different matrices and no tools should be required for torch or sample-introduction cassette removal. • There should be a Peristaltic Pump supplied with the instrument, with a minimum of four channels under computer control. The flow rate should be between 0.2 - 7.0 ml/min, in a increment of 0,1ml/min. • The system may be totally shutdown when not in use (with no electrical or gas consumption), and must be in operational mode within 15min upon power up after a prolong period of shutdown. • The system must use a double-spectrometer optical system, for a high-speed, highlight-throughput optical system offering excellent resolution, all in a compact system. The sealed optical system can be purged with nitrogen for low UV (165-190 nm) performance • The spectrometer should have a focal length of 0.3 meter and a Stigmatic Littrow configuration. The grating used for dispersion should have 79 lines/mm with a blaze angle of 63.8 degrees • The system should have a spectral range is 165-900 nm with resolution of < 0.009 nm @ 200 nm • The system should be supplied with a dual backside-illuminated Charge-Coupled Device (CCD) array detector which is cooled directly using a single stage integrated Peltier cooler operated at approximately -8 °C. • The system should use air to remove the plasma tail from the optical path, thus reducing maintenance. It should have an argon-free interference removal. • The unit should have a small footprint to save laboratory space		

	SOFTWARE • The software should be based on Industry Standard MS-Windows Environment. • The software shall be multi-tasking and multi-user with the capability to report live results to (amongst others) LIMS, Excel and Word using default and custom templates. • Automatic export at the completion of automated analysis shall be possible using at least two templates. • The software should allow the inclusion of priority samples after an automated analysis has begun, without pausing the analysis. • The software should allow the appending of new methods to an automated analysis after it has begun, without pausing the analysis. • Software should include the ability to add analytes to the method or edit chosen spectral lines after data acquisition without re-running the sample. • The software must have at least two interference correction techniques available to the analyst. • Internal standardization, interference correction and other data manipulation must be available to turn on and off post analysis, to save reanalyzing samples. • The instrument shall allow the option of external remote control via iPad for status viewing and plasma on/off function. **Inclusions:** 1.1-unit Low Noise Recirculating Water Cooling System 2.1 set chiller cooler mix 3.1-unit Autosampler, free-standing, computer-controlled autosampler, provides more than 200 vessel positions for maximum capacity 4.2 pks of tubings, 0.76mm ID and 1.14mm ID, 12pcs/pack 5.1 set Installation solution for ICP-OES 6.1 set of Metal Standard 7.1-unit Branded Intel Core i5 with 19" LED Monitor and Printer 8.1 set Exhaust Blower System for the ICP-OES 9.1 pc Regulator for Argon 10. 1 pc Regulator for Nitrogen		

	11. 1 unit each for Nitrogen and Argon tanks (Full- for initial operation) 12. 1-unit Air Compressor, 2HP 13. 1 set SS gas lines for Argon, Nitrogen, and air 14. 1 pc additional heavy-duty air/dryer filter 15. 1-unit 10KVA UPS 16. Delivery site training.		
	GAS CHROMATOGRAPH (GC – FID) **Oven:** The oven should provide easy access to columns. The oven should give excellent temperature control and fast cool-down times for maximum productivity. All temperature and time functions are microprocessor controlled and are shown on the touch-screen display. Software selectable coolant time-out and coolant cut-in temperatures ensure economical sub-ambient operation. Volume: 10,600 cm^3 Temperature range: 10 °C above ambient to 450 °C or -99 °C to 450 °C with subambient accessory Column overheat protect: User settable up to 450 °C Temperature programmer: 3 ramp, 4 plateaus **Split/splitless capillary injector** • Split ratio easily adjustable for a wide range of analysis conditions • Charcoal trap in split vent prevents contamination of split valve and lab air • Two choices of liner: 2-mm and 4-mm internal diameter • 50°C to 450°C in1°Cincrements • 1/16-inch fitting • Conventional pneumatics – pressure regulator (0-60 psig) for digital display of column head pressure. Automatic control of split vent solenoid valve • PPC pneumatics – four software configurable modes: programmed flow, programmed pressure, programmed velocity or constant flow. Vacuum compensation software selectable • PPC pneumatics include automatic control of split vent by split flow or split ratio	1	Unit

	Flame Ionization Detector (FID) • Wide linear dynamic range No makeup gas required due to efficient sweeping of column effluent by hydrogen combustion gas • Air flow designed to minimize contamination and residue buildup • 1/8-inch fittings • Conventional pneumatics – pressure regulator for hydrogen, needle valve for air • PPC pneumatics – software flow control of hydrogen and air • "Flame out" warning and ready interlock • Operating temperature: 100 °C to 450 °C in 1 °C increments • Sensitivity: > 0.015 coulombs/g C • Minimum detectable quantity: $< 3 \bullet 10^{-12}$ g C/sec nonane at a S/N=2to1 • Linearity: $> 10^{6}$ • Signal filtration: 50, 200, 800 msec • Input range: 1, 20 • Makeup gas: Not required **Other Features:** • Touch-screen graphical user interface • Real-time graphic display of chromatogram • Injection countdown for manual injections • Column pressure/flow/velocity calculator • More upgradable firmware • Preventative maintenance counter • Password protection • Graphical display of temperature and pneumatic programs • Status-summary screen • Recorder attenuation range from 1 to 65,536 in binary steps • Long-term battery backup of GC methods, autosampler programs, flow and temperature-calibration data • Software calibration of oven temperature and carrier gas flow with PPC and conventional pneumatics • Full instrument control via external computer • Five stored methods • Baseline compensation • Auxiliary heated zone for accessory devices **Inclusions:** 1. 1 set Capillary Split/Splitless Injector Starter Kit		

	Includes: 2-mm i.d. quartz liner, 4-mm i.d. quartz liner, silicone o-rings (10), Thermogreen septa (50), 0.5-mm graphite ferrules (10), 0.8-mm graphite ferrules (10), 1/16-inch stainless steel nuts (5), untreated quartz wool, packing rod, wafer scribes (10). 2. 1 pk Quartz Liner for Split Operations with Silanized Glass Wool (4 x 6.2 x 92.1) 5/pkg 3. 1 set Detector Fittings Kit Includes: 1/8-inch stainless steel nuts (2), 1/8-inch stainless steel plugs (2), 1/8-inch x 0.5-mm graphite ferrules (10), 1/8-inch x 1.0-mm graphite ferrules (10), 1/8 to 1/16-inch adapter, 1/16-inch x 0.5-mm graphite ferrules (10), 1/16-inch x 0.8-mm graphite ferrules (10), 1/16-inch stainless steel nuts (5). 4. 1 set Gas Supply Installation Kit Kit includes hardware to hook up three gas supplies to gas chromatograph. Kit includes: (1) safety gas flow restrictor for hydrogen (00090038), (1) restrictor warning tag (00091216), (1) restrictor tag (00091360), (50 ft.) 1/8 in. precleaned copper tubing (N9300077), (6) 1/8 in. Swagelok nut (09903128), (6) 1/8 in. brass front ferrules (09903129), (6) 1/8 in. brass rear ferrules (09903130), (3) 1/8 in. Swagelok brass 3-way tee (09903170), (3) 1/4 in. NPT x 1/8 in. Swagelok adapter (09903795), (1) 1/4 in. NPT x 1/8 in. NPT reducer female (09903212), (1) 1/15 in. x 1/2 in. open-end wrench (09907266), and (1) 6 in. adjustable wrench. 5. 1 set Carrier Gas Purification System (Includes: Hydrocarbon Trap, Moisture Trap, Oxygen Trap for Carrier Gas) 6. 2 pcs moisture trap 7. 1 pc Elite-5 Capillary Column (30m x 0.32mm ID x 1.00um) 8. 1 pc Elite-1 Capillary Column (30m x 0.32mm ID x 1.00um) 9. 1 set Branded Desktop Intel Core i5 PC w/ 19“LED Monitor & Printer 10. 1 set High Purity Gas Regulators for He, H2 & Compressed Air 11. 1 set of Gas Tanks (full) for Helium and Hydrogen 12. 1unit UPS 13. Delivery site training.		
	MULTI PARAMETER, BENCH TOP **Features:** • Measures pH, conductivity/TDS, and temperature with a single meter • Large screen in a compact footprint • Meter accepts pH and redox electrodes, in addition to conductivity/TDS	1	Unit

	• Up to 5-point push button calibration • Selectable cell constant • Auto-ranging across 5 conductivity ranges • Easy interchangeability of probes • Non-volatile memory holds up to 100 data points • Integral electrode holder **Specifications:** **pH** • Range: -2.00 to 16.00 pH • Resolution: 0.01 pH • Accuracy: ± 0.01 pH • Cal. Points: up to 5 • Buffer sets: USA (1.68, 4.01, 7.00, 10.01, 12.45) o NIST (1.68, 4.01, 6.86, 9.18,12.45) **Conductivity** • Range: 0.0 uS to 200.0 mS • Resolution: 0.01/0.1/1uS; 0.01/0.1mS • Accuracy: ± 1% full scale • Cal. Points: Automatic (84uS, 1413uS, 12.88mS, 111.8mS) maximum 1 per range; manual (5points); maximum 1 per range • Cell constant: 0.1, 1.0, 10.0 selectable **TDS** • Range: … to 100.00 ppt @ 0.5 factor (200.00 ppt @ 1 factor) • Resolution: 0.01/ 0.1/ 1ppm; 0.01/0.1ppt • Accuracy: ± 1% full scale • Cal. Points: Manual (5 points); maximum 1 per range • TDS factor: 0.4 to 1.00 (adjustable) **Temperature:** • Range (meter): 0.1 to 100°C/ 32.0 to 212.0°F • Resolution: 0.1°C/0.1°F • Accuracy: ± 0.5°C/ ± 0.9°F • Coefficient (per °C): 0.00 to 10.00 % • Normalization: 15.0 to 30.0 °C (adjustable) • Power requirements: 9V DC adapter, 1.3A (100/240VAC, SMPS) **Inclusions:** 1. 1-unit meter with pH Electrode, conductivity/ATC probe, integral electrode holder, and 100/240 VAC adapter 2. pH buffer solutions, 480mL/bottle (4.01, 7.00, 10.00) 3. Conductivity standard solution, 480mL/bottle, KCl calibration solution (84uS/cm, 1413uS/cm, 12.88mS/cm, 111.8mS/cm) **4.** Resolution: 0.01/ 0.1/ 1ppm; 0.01/0.1ppt		

	VORTEX MIXER **FEATURES** • The strong 5-mm vibration orbit yields the best results even with high viscosity media or solids out of solution and quickly gives a smooth and even dispersion • Switch to continuous mode – the unit performs a permanent vibration motion • Switch to automatic mode - the unit will start once a vessel is pressed to the plate and will stop automatically once this pressure is released • Fast and dependable mixing results due to high vibration frequency rates up to 2,500 rpm • Plate for 20-mm diameter test tubes is included as a standard. Test tube tray for flasks up to 50-mm diameter is optionally available in the accessory section **Technical Data:** Overheat protection: self-resetting Rotation speed range: 0 - 2,500 rpm Power input: 51 W Operating Mode: automatic or continuous Rotation speed setting: analog Orbit / Stroke: 5 mm Motion: vibrating	1	Unit
	TOP LOADING BALANCE (0.01G – 350g readability) • Weighing range: 360g • Readout: 0.001g • Reproducibility: 0.002g • Linearity: ± 0.005g • Ambient Temperature: 10-40degC • Power: 200V, 60Hz • Weighing Range: 350g • Readability: 0.01g • Reproducibility: 0.01g • Linearity: ± 0.03g • Stabilization time: 3 sec • Weighing Plate Size: 130 X 130mm • Calibration: External • Measurement Mode: Weighing, Parts Counting, Percent • Power Requirement: 220VAC, 50/60Hz. • With protective working cover	1	Unit

	ROTARY EVAPORATOR **Features:** • The unit should have a digital 3.5" LCD display which indicates rotation speed, heating bath and vapor temperature • The unit should have automatic process timer which turns off your evaporator at a preprogrammed time and removes evaporating flasks from bath • Large digital LCD display which allows you to monitor all parameters even from a distance • Convenient motor lift adjusts height by the press of a button • Vertical glassware • Intelligent evaporation with rotary evaporators: overheat protection design that prevents water baths running dry, provides a detachable panel for superior ease of use from outside closed fume hoods and offers a proven vacuum seal and vapor tube system guaranteed for years of operation! **Specifications:** • Rotation speed indicator: 3.5" LCD Display • Permissible ambient conditions: 5 – 31 °C at 80 % rel. humidity 32 – 40 °C decreasing lineary up to max 50% rel. humidity • Protection class: DIN EN 60529 IP 20 • Lift: Motor lift • Height adjustment speed: 30 mm/s • Height adjustment: 155 mm • Drive: brushless DC motor with electronic speed control • Heating capacity: 1,300 W • Temp. range heating bath: 20 - 210 °C • Temperature accuracy bath: ±1 °C • Overheat protection bath: cut-off at 5 °C over set temperature via separate PT 1000 • Bath temperature setting: 3.5" LCD Display • Heating bath temperature control: electronic / digital • Secondary over temp.: cut off 250 °C • Material heating bath: stainless steel AISI 316L • Diameter heating bath: 255 mm • Volume heating bath: 4.5 l • Display vapor temperature: 1 • Required accessories for display vapor temperature: vapor temperature sensor • Timer: 1 • Remote control function Lift: 1 • Remote control function - Start rotation: 1 • Remote control function - Start heating bath: 1 • Supply Power: 1,400 W • Weight without glassware assembly: 16 kg • Condensing surface XL condenser: 2,200 cm²	1	Unit

	• Max. size evaporating flask: 5 l • Display yes 3.5" LCD • Display Rotation speed range: 10 - 280 rpm **Inclusions:** 1. 1-unit Main unit 2. 1 set glassware, vertical (Condenser, 1 Li evaporator, 1 Li receiving flask) 3. 1-unit Vacuum pump 4. 1-unit AVR		
	OVEN, FORCED CONVECTION **Features:** • 250°C maximum operating temperature • Equipped with the R38 digital PID temperature controller as standard • Fan convection for rapid heating & excellent uniformity • Chemically resistant stainless-steel liner • Two adjustable nickel-chrome plated wire shelves • Lever latch door & airtight silicone seal • Built to comply with BS EN 61010-2-010:2003 **Specifications:** • Volume: 66 Li • Max Temp: 250°C • Temp. uniformity: ± 5°C @ 250°C • Heat-up time: 25min • Shelves: 2 • Power: 1500W • Power Supply: 220-240V; 60Hz, single phase	1	Unit
	MOISTURE ANALYZER **Features:** • Drying program • Previous drying time • Current temperature • Unit for displaying the results • Current moisture content in % • Drying mode/Status display drying • Halogen quartz glass heater 400 W • Observation window over the sample, useful during initial adjustment • Internal memory for automatic sequence of 10 drying programs and 100 drying processes carried out	1	Unit

	• The last value measured remains on the display until it is replaced by a new measurement • Sample description for up to 99 samples, 2 digits, freely programmable, and is printed in the measuring protocol • Date and time display as standard • 50 sample plates included **Specification:** • Weighing Range: 60g • Readability: 0.001g/0.01% • Moisture Display: 0-100% • Temperature Range:50-200^{o}C DryingModes: Standard drying, Drying in levels, Gentle o drying, Pre-heat level, can be switched on • Switch Off criteria: When the set time has expire (1min-4h) • When the weight loss per unit of time falls • below the target value (30sec) • Calibration: External • Weight: 4.2kg • Power: 220VAC • Temperature accuracy bath: ±1 °C		
	HOT PLATE WITH MAGNETIC STIRRER • Stirring position: 1 • Stirring quantity (H_2O): 10L • Speed range: 100-1500 rpm • Heating Temp Range: 50-500 °C • Plate Material: Ceramic • Plate Dimension: 180x180mm • Speed Control: scale 0-6	2	Units
	FUME HOOD, STANDARD BY-PASS • 32mm thick chemtop phenolic resin top; metal epoxy coated exterior casing; fiberglass front panel; 6mm thick tempered glass sash sliding on fiberglass guides; 1-gooseneck water faucet and fiberglass cupsink complete with traps and drain fitting; 1-vapor and explosion proof bulb, 100 watts; 1-blower switch and light switch; 1-electrical outlet 220V; 1-wooden base cabinet epoxy coated with 2-swing doors and vinyl base. • 1-US motor blower with fiberglass housing; ¾ HP; single phase, 220V; with impeller fan made of polypropylene	1	Unit

	• 2 pieces of fiberglass ducting, 8” diameter, 8 feet length (good for 1-storey building) • 2 pieces fiberglass elbow, 8” diameter • 1-piece fiberglass weather capacity		
	ANALYTICAL BALANCE • Weighing Capacity: 220g • Reproducibility: 0.2mg • Stabilization Time: 3 sec • Gross Weight: 6 kg • Calibration: External • Weighing Space:174W x 162D x 227H mm • Readout (Readability): 0.1mg • Linearity: ±0.3mg • Weighing Plate Dimensions: 91mm Dia. • Power Supply: 110 V – 230 VAC	1	Unit
	ASHING, FURNACE **FEATURES:** • 1100 °C maximum operating temperatures • Controller, with single ramp to set-point & process timer • Large floor area allows for large numbers of samples • Ideal for ashing foods, plastics, coal & other hydrocarbon materials • Designed to comply with ISO 1171:2010, ASTM D3174-04:2010 and ASTM D4422 • Wire elements are protected from chemical & mechanical damage by a hard-wearing alumina-based liner • 4-sided heating (2 sides, roof & hearth) • Air inlet & tall chimney give airflow of 4 to 5 changes per minute • Low chamber height holds airflow close to samples for optimum combustion • Powerful elements with graded winding compensate for heat loss due to high airflow • Preheating of air before it enters the chamber gives excellent uniformity **Specifications:** Max temp (°C) :1100 Heat-up time (mins): 155 Max continuous operating temp (°C): 1000 Volume (litres): 3 Max power (W): 2100 Holding power (W): 1270 Thermocouple type: K Weight (kg): 22	1	Unit

2	**SUPPLY AND INSTALLATION OF MICROWAVE DIGESTION SYSTEM AND DUMAS NITROGEN ANALYZER:**	**1**	**lot**
	MICROWAVE DIGESTION SYSTEM **Microwave cavity:** 316 stainless steel housing with multi-layer PTFE coating Largest microwave cavity: 43 x 40 x 41H cm (approx. 70, 5 liters). **Inlet/outlet ports:** Large flange with 36mm ID plus additional ports on the side walls. **Chassis:** Protected against acids and solvents with polymer coating. **Door:** Completely made 18/8 stainless steel door. Self-resealing pressure responsive door. Multiple independent safety interlocks to prevent microwave emission in case of improper closure or misalignment. Four independent door safety interlocks to prevent microwave emission in case of improper closure or misalignment. With backlit logo that indicates the digestion process status during all the run. **Exhaust System** Built-in, located at the rear of the cavity and separated from electrons to prevent corrosion. **Video Camera LC00512** Built-in with PTFE Teflon foil protection. **Microwave Emission** Dual magnetron system with rotating diffuser for homogenous microwave distribution in the cavity. Two 950 Watt rated magnetron protection from reflected microwave power. Continuous and PID-controlled microwave emission at all power levels.	1	Unit

	Emission and Safety Norms EN61010-1:2001; EN61010-2-010:2003; UL61010-1:2004 CAN/CSA-C22.2 No 61010-1:2004; CAN/CSA-C22.2 No 61010-2-010:2004 IEC 61010-2-010:2003; EN61326-1:2006 **Standard methods compliance** Control terminal 660, touch screen, 6,5" TFT display 640x480 VGA resolution with 64K colors 5 USB ports, 1 RS232 port, 1 LAN port, 2 video ports 21 CFR Part 11 fully compliant **Operating software:** Icon-driven multilanguage (Chinese, English, French, German, Italian, Japanese, Polish, Portoguese, Russian, Spanish and Turkish) software allowing the user to edit, save and run a virtually unlimited number of methods Multiple-level access by password, such as User, Administrator, Service The terminal display the view of the camera locates into the cavity of the system. The software has dedicated pages to the sample information, such as sample amount , reagents mixture. The software display a dedicated page for the individual temperatures of each vessel during all the microwave program **Software application suitable for this unit.** Web-based application for external devices, including application Library, tutorial videos, spare parts and consumables and remote control of the system Application suitable for external devices, including a database, user manual etc. **Operator Manual in English** Weight: ca. 84 kg Power supply: 230 V/60Hz, 3,5 KWatt **1 Maxi-44 High throughout rotor cpl with 44 pressure reactors** 1 MAXI-44 rotor body for 100ml vessels pn AEX00600		

	44 Vessel 100ml complete pn AEX00060 Vessel volume: up to 100ml Maximum pressure: 35 bar (ca. 500 psi) Maximum temperature: 300˚C 1 Support for easy vessels handling 1 Rack for MAXI 44 vessels (set of 3) 1 Easy Temp 2 direct contactless temperature control in all vessels for MAXI 44 **Inclusive** 1-unit UPS Training at delivering site.		
	DUMAS NITROGEN ANALYZER **Features** Method analysis: Dumas method/Combustion Detector: Innovative auto-calibrating TCD (no reference gas required) Sample weight: up to 1g Leak Test: Automatic by ZONE Autosampler capacity: up to 4 discs, 30 positions each Reproducibility (RSD): < 0.5% for EDTA standards approx. 100mg (9.57%N) Recovery: > 99.5% Detection range: 0.1 – 200mg N Detection limit: 0.003mgN absolute Combustion Temperature: 1030 ˚C / 1886 ˚F Helium (He): purity 99.999% (grade 5.0) Oxygen (O2): purity 99.999% (grade 5.0) Compressed air or Nitrogen (N2): Purity 99.6 % (oil and water free) Helium (He) pressure: 2 bar	1	Unit

	Oxygen (O2) pressure: 2.5 bar Compressed air or Nitrogen (N2) pressure: 3 bar Monitoring: Cloud-enabled instrument Interfaces: USB, RS232 Power: 1400 W Power supply: 230V / 50-60 Hz Weight: 54kg / 119lb Preinstalled methods selectable in an instant. Controllable form PC with DUMAsoft software Powerful,clear and detailed reporting software Data storable in multiple formats for LIMS or PC Flash determination of nitrogen & protein content Automated analysis of preloaded samples (117 positions) Totally unsupervised operation Results produces 24/7/365 Unmatched LOD, 0.003 mg N RSD less than 0.5% with EDTA standard Conforms to good laboratory practice standard Leak tests (zone or total) ensure optimum performance Inclusions: Start-up kit (2000 sample analyses) DUMASOFT software RS232 cable for balance USB cable for PC, 5m Cleaning kit for metallic ash collector		

	UPS (1 unit) Consumables at least 2000 samples Closing device tin foil cup Oxygen gas purity 99.99% (grade 5.0)/medical grade Helium gas purity 99.99% (grade 5.0) Compressed air purity 99.6% (oil and water free) 2-stage regulator for Helium and Oxygen Gas Gas line Tubing for Helium, Oxygen and Compressed air Preferably inclusive distributorship or at least authorized distributor with local after sales support and parts availability for at least 5 years from the last production of equipment Local after sales support and service engineer should be trained at the manufacturers site Training at the delivering site on the use, validation of results, method development, troubleshooting and maintenance of the Dumas Instrument for two (2) laboratory operators.		
3	**SUPPLY OF VARIOUS LABORATORY APPRARATUSES (GLASSWARES AND HARDWARES):**	**1**	**lot**
	ERLYNMEYER FLASK (50ml)	24	pcs
	ERLYNMEYER FLASK (500ml)	24	pcs
	BEAKER (50mL)	24	pcs
	BEAKER (100ml)	24	pcs
	BEAKER (1000ml)	10	pcs
	BEAKER (500ml)	24	pcs
	GLASS FUNNEL (65mm)	24	pcs
	PIPETTE (1-10ml)	16	pcs
	PIPETTE (1-5ml)	16	pcs
	TEST TUBE (16X125MM)	24	pcs
	BURETTE (50ML)	12	pcs
	GRADUATED CYLINDER (1L)	6	pcs

	GRADUATED CYLINDER (500ML)	6	pcs
	GRADUATED CYLINDER (250ML)	6	pcs
	GRADUATED CYLINDER (100ML)	12	pcs
	GRADUATED CYLINDER (10ML)	12	pcs

Note:

Procurement of items for the said project shall be done by LOT and not by Line Items as stated in the Bidding Documents.

Approved:

BELEN S. DELA PEŇA, Ph.D.
BAC Chairperson