Support for Maintenance Contract and Equipment Replacement for the Multi-Collector Inductively Coupled Plasma Mass Spectrometer in the University of Wyoming High-Precision Isotope Laboratory

PI: Professor Kenneth WW Sims, Department of Geology & Geophysics

Amount Requested: \$62,344



UW undergraduate student, Shauna Bladt, preparing Yellowstone Travertine samples in the clean lab for isotope analyses on the Multi-Collector Inductively Coupled Plasma Mass Spectrometer in the University of Wyoming High-Precision Isotope Laboratory for her McNair's Scholar Senior Thesis. Shauna went on to graduate school to study geology at the University of Arizona.

Overview:

This proposal requests funding of \$62,344 to help maintain a regionally unique, world-class, state-of-the-art Multi-Collector Inductively Coupled Plasma Mass Spectrometer (MC-ICPMS). This instrument provides isotope measurements for a wide range of elements across the periodic table, for a multitude of users and students from UW and across the globe.

The MC-ICPMS Revolution:

Isotopic measurements provide natural sciences with a quantitative tracer of chemical processes and sources. Improvements in the precision of isotope measurements open new avenues of scientific inquiry and significantly enhance our understanding of natural processes. MC-ICPMS marries the outstanding ionization efficiency of the inductively coupled plasma source (ICP), the superior peak shapes of a magnetic-sector mass spectrometer (MS), and the ability to simultaneously measure several isotopes using a multiple collector array (MC) to achieve the most precise isotopic measurements yet made for many elements.

The initial intent of MC-ICPMS was to improve on measurements typically made by thermal ionization mass spectrometry (TIMS) (e.g., Pb, Sr, Nd, U, Th, Pu, Os, Hf). In this regard, MC-ICPMS has exceeded expectations. The MC-ICPMS method significantly reduces analysis time and dramatically increases the precision of isotopic measurements for elements with high first ionization potential – Th, Hf, W, and Pb. These advances in sample throughput and measurement precision have revolutionized our understanding of geological processes on all timescales, from determining the timing of Earth's core formation to establishing surficial weathering rates. These refinements have also greatly improved our ability to trace chemical sources, which has important applications in environmental and life sciences.

MC-ICPMS has also opened the exploration of the periodic table, leading to the discovery of small but significant natural isotopic variations in several elements, which were previously difficult or even impossible to analyze. In this regard, MC-ICPMS has revolutionized isotope chemistry by giving rise to the new sub-discipline of "non-traditional" stable isotope chemistry. Researchers are now studying mass-dependent and mass-independent variations in the isotopic compositions of many elements (ranging from Li to U), in addition to the "traditional" H, C, N, O, and S. These additional stable isotope systems have allowed researchers to place new constraints on many processes, including solar-system formation, the oxidation history of the planet, the formation of natural resources, and vital effects such as bio-mineralization.

The University of Wyoming High Precision Isotope Laboratory:

The University of Wyoming High Precision Isotope Laboratory is a world-class isotope research facility with a Class 1000 clean lab and a state-of-the-art NEPTUNE Plus MC-ICPMS. No other isotope laboratory in the Rocky Mountain Region (including Colorado, Montana, Nebraska, Kansas, Utah, North and South Dakotas, and Idaho) currently has a **multi-collector**, **magnetic sector** Inductively Coupled Plasma Mass Spectrometer. Thus, our MC-ICPMS distinguishes UW locally and globally in isotope geology.

The UW MC-ICPMS was purchased through a Major Research Instrumentation Grant for \$875k in 2009 when I moved here from Woods Hole Oceanographic Institute, where I was a tenured Research Scientist from 1995-2009. UW's MC-ICPMS routinely measures radiogenic isotopes of Sr, Nd, Hf and Pb, non-traditional stable isotopes of Fe, U, Ca, and Mg, which are only possible on a state-of-the-art MC-ICPMS, and various short-lived U- and Th- decay series

radionuclides that are in extremely low concentrations picograms/gram (some measurements are made on as little as 10^8 atoms of analyte) and have isotope ratios as large as 10^6 .

Over one hundred peer-reviewed publications (including in Nature and Science) have resulted from measurements made on the UW MC-ICPMS. This instrumentation has provided data for faculty and student users from the U. of Wyoming, Colorado State U., CU Boulder, U. of Nebraska, Harvard U., U of Michigan, U. of South Carolina, U. of Iowa, Montana State U, Woods Hole Oceanographic Institution, Columbia U, U. of Missouri, NM State, U. of Oregon, Cal State LA, Oxford U., UK; U. of Lausanne, Switzerland; U. at Heidelberg, Germany; Instituto Geofísico Escuela Politécnica Nacional, Ecuador; and the Korean Polar Research Institute, South Korea.

This instrument has also been used as a teaching tool for *Geochemistry* (Geol 4490), *Isotope Geology* (Geol 5050), and Dave Williams' *Biogeochemistry* (BOT 4780/5780). In addition, six undergraduate students have completed McNair's or Honor's College Capstone projects using the MC-ICPMS. Fourteen PhD and seven MSc students have obtained data central to their dissertations and these using this machine.

As such, this instrument supports CEPS Tier 1 Engineering Initiative goals of 1) Excellence in Undergraduate Education and 2) World-Class Research and Graduate Education.

Requested Funding Support:

Service Contract Assistance

The annual budget for the University of Wyoming High Precision Isotope Laboratory is $\sim \$130,000/\text{year}$, including a $\sim \$80,000/\text{year}$ service contract and laboratory consumables such as clean acids, ion chromatography resins, high-purity Ar for plasma generation, and instrument consumables such as secondary electron multipliers and high-resolution slits degraded by the ion beam, etc. Because the instrument has been continuously on a service contract since its purchase, it is a well-maintained, well-tuned, and highly functional MC-ICPMS.

The daily user fee for the UW MC-ICPMS is \$1,250/day. All users, including my research group, pay this cost. However, I have provided a reduced fee for UW colleagues and students who had no grant monies and could not afford this cost.

Until COVID, I maintained a zero balance from user fees at the end of each year. However, since COVID, I have had to spend summer salary monies and request funds from REDD and my department to help pay for the service contract. Therefore, with this grant request, I am asking \$40,064 to cover 50% of this years' service contract (see attached quote). I will cover the remaining part of the service contract through other sources, namely user fees and my existing NSF grants (current and pending).

Replacing the Desolvating Nebulizer

I am also requesting \$22,280 to replace our nonfunctioning desolvating nebulizer (see attached quote). This equipment is expensive enough that I cannot legally purchase it with NSF grant monies as it will be used on many different projects over the next several years.

The attached quote is for a Teledyne Cetac Aridus3 desolvating nebulizer. The Aridus3 is a sample introductory system that removes the solvent from samples (in our case, samples are dissolved in dilute nitric acid) prior to introducing them into Ar plasma on the MC-ICPMS. The primary benefit of a desolvating nebulizer is to 1) increase analyte sensitivity by up to 10 times relative to the standard sample introductory system, and 2) reduce solvent-based interferences, thereby enabling us to achieve more precise results for samples with low analyte concentrations.

Budget

This request is for \$40,064 to support 50% of the annual service contract for the Neptune Plus Multi-Collector Inductively Coupled Plasma Mass Spectrometer (MC-ICPMS) and \$22,280 to replace our nonfunctioning, fifteen-year-old desolvating nebulizer, for a total request of \$62,344.

I will cover the remaining part of the service contract through other sources, namely user fees and my existing NSF grants (current and pending).

Quotes for these two items are attached below.

1400 Northpoint Pkwy Suite 10 West Palm Beach, FL 33407-1976

SERVICE PLAN QUOTATION				
QUOTATION Number:	22288923 / 1			
Coverage Start Date:	November 15, 2025			
Coverage End Date:	November 14, 2026			
Quotation Expires:	November 15, 2025			

KEN SIMS UNIVERSITY OF WYOMING 16TH AND GIBBON STREET LARAMIE WY 82071-3663

Phone: 307-766-3306

Fax:

KSIMS7@UWYO.EDU Email:

Dear KEN SIMS.

Thank you for being a valued Thermo Fisher Scientific customer. The current coverage for your instrumentation will expire in the coming months.

The following details a Service Plan that will help you gain the greatest value from your technology investment.

Some key benefits of purchasing a Service Plan for your instrument may include:

- 50% faster onsite response time with 30-40% reduced downtime compared to billable customers
- 35% remote resolution of issues with exclusive access to enhanced technical support with digital remote support tools Priority access to more than 2,000 field service professionals with an average of 18 years' experience

I ask that you please review the following proposal. If you wish to purchase the Service Plan, please forward the following via email (preferred) or fax to my attention:

- A signed copy of the proposalA copy of the respective Purchase Order
 - Ensuring the PO reflects Thermo Electron North America LLC as the vendor/supplier
 - Referencing this proposal number on the PO

Please review the Equipment Location Summary at the end of the proposal to ensure accuracy. For any guestions or revisions, please contact me.

On behalf of our team, thank you for choosing Thermo Fisher to be your preferred service provider.

Sincerely,

JESSICA REBHOLZ, SR. TERRITORY MANAGER Tel #: 205-234-9816

Email: JESS.REBHOLZ@THERMOFISHER.COM

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Phone: 307-766-3306

Fax: Email:

II: KSIMS7@UWYO.EDU

Customer agrees to make full payment within thirty days of invoice. Alternative payments are available at an additional finance fee. Prices shown on this sheet are exclusive of all state, local, use, excise and/or other taxes.

Material		Description		Serial Number	Prid	ce
0746560	Coverage:	NEPTUNE PLUS BUNDLE 7, DUAL RPQ N UNITY ESSENTIAL SUPPORT PLAN-APG	UCLEAR - MASS SP	SN01116N	80,128.00	USD
			ce Plan Suk ce Plan Tot		80,128.00 80,128.00	USD USD

Thermo Fisher Scientific looks forward to providing service on those instruments specified above subject to the terms and conditions stated on the attached document. As an authorized representative of the Buyer, your signature below creates an Agreement to buy the services listed above and your acceptance of the Terms and Conditions on the following pages as the sole and exclusive terms for your purchase. If you have questions, please contact me.

Please be advised that our legal department's contract review policy does not allow for the review or acceptance of customer terms for Service Plan engagements below \$20,000. The rationale for this policy is to expedite the sales process and reduce the possibility of accepting onerous terms for low dollar value contracts. We are willing to entertain in good faith proposed edits to our standard terms if you are inclined to propose reasonable changes. As alternative to the exchange and review of edited commercial terms, we may agree to have neither party sign any terms and rely on the terms applied under the relevant version of the Uniform Commercial Code.

ACCEPTANCE OF SERVICE PLAN

UNIVERSITY OF WYOMING		Thermo Electron North America, LLC			
Signature	Date	Signature	Date		
PO Number		_			

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UNITY LAB SERVICES ESSENTIAL SERVICE PLAN

Plan Features:

- Field Service Engineer labor, travel, and parts required for Corrective Maintenance visits with a targeted response time of 3 business days
- Priority status for technical support inquiries with a targeted immediate response time. A certified service engineer will conduct diagnosis and Corrective Maintenance procedures using the latest digital remote support tools
 One (1) scheduled annual standard Preventive Maintenance visit (standard PM kit included)
- Access to Unity Lab Services Online Knowledge Base
- ~ 10% discount on spare parts (not covered by corrective maintenance), accessories, and consumables for the instruments covered under this contract and during the effective period of this contract (please ask for the discount when contacting your local Thermo Fisher Scientific parts ordering department)
- Software and firmware updates upon request and in conjunction with a scheduled Preventive Maintenance or Corrective Maintenance visit (updates are defined as changes of the existing software version that are intended to improve its performance)
- ~ 10% discount off list price for the training classes purchased during the contract validity period. May not be available in all locations or used in conjunction with any other discounts or promotions (please check availability with your local Thermo Fisher sales representative or customer service team)

Optional Add-on Services:

- ~ Purchase of an Operational Qualification (OQ) with this contract includes an Instrument Requalification (RQ) in conjunction with a scheduled Corrective Maintenance. Scope of RQ testing is defined in the Unity Lab Services Re-Qualification Testing Matrix
- Purchase of an additional Preventive Maintenance with this contract available at a reduced price

(For details on plan exclusion please refer to www.unitylabservices.com/contractexclusions)

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TERMS AND CONDITIONS OF SALE FOR PRODUCTS AND SERVICES

GENERAL. Thermo Electron North America LLC. ("Seller") hereby offers for sale to the buyer named on the face hereof ("Buyer") the products ("Products") and/or annual support plans ("Support Plan(s)") and billable services ("Technical Support") (Support Plans and Technical Support may be referred to collectively as "Services"] as listed on the face hereof on the express condition that Buyer agrees to accept and be bound by the terms and conditions set forth herein ("Agreement"). Any new or different provisions contained in any document is sued by Buyer in response to this offer are expressly rejected; and if Buyer's response is deemed to be an offer, this document is a rejection of Buyer's offer and a counter offer by Seller and shall not constitute acceptance of this Agreement. This is the final, complete and exclusive statement of the contract between Seller and Buyer with respect to Buyer's purchase of Products and Services specified herein, which terms may not be altered in any way by Buyer's purchase order terms. No waiver, consent, modification, amendment or change of the terms contained herein shall be binding upon Seller unless agreed in writing and signed by Seller. Seller's failure to object to acceptance in writing by an authorized representative of Seller.

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TAXES AND OTHER CHARGES. Prices for the Products and Services exclude all sales, use, value added and other taxes and quite imposed with taxes and duties must be paid by Buyer. If Buyer claims any exemption, Buyer must provide a valid, signed certificate or letter of exemption for each respective jurisdiction.

4. TERMS OF PAYMENT. Seller may invoice Buyer immediately for the single lump sum amount equal to the total charges for the initial Term of a Support Plan, upon shipment of Products or upon completion of Technical Support for the price and all other charges payable by Buyer in accordance with the terms on the face hereof. If no payment terms are stated on the face hereof, payment shall be net thirty (30) days from the date of invoice. International Technical Support may retire payment in advance. Buyer will grant a security interest in the Products soil under this Agreement until payment of the full purchase price to Seller in accordance with Article 9-103 of Uniform Commercial Code-Secured Transactions. If Buyer fails to pay any amounts when due, Buyer shall pay Seller interest thereon at the greater of a periodic rate of one and one-half percent (1.5%) per month or the highest rate stipulated by applicable law, together with all costs and expenses (including without limitation reasonable altorneys' fees and disbursements and court costs) incurred by Seller in collecting such overdue amounts or otherwise enforcing Seller's rights hereunder. Seller reserves the right to require from Buyer full or partial payment in advance, or other security that its satisfactory by time that Seller believes in good faith that Buyer's financial condition does not justify the terms of payment specified. All payments shall be made in U.S. Dollars unless otherwise specified in Seller's invoice.

5.4 PRODUCT DELIVERY. All Products will be shipped to the destination specified by Buyer's (FCA (INCOTERMS 2010) at OEM shipping point or Seller's distribution facility, as applicable, which will be approximate or payment shall be m

cnarges, and insure the shipment or accept the risk if the item is lost or damaged in shipment. In addition, Seller reserves the right to charge the Buyer the list price for missing components or subassemblies when incomplete items are returned to Seller. Authorized returns of any unused items which are free from material defects to Seller, in its sole discretion, may be subject to a twenty percent (20%) restocking charge. Requests by Buyer to delay, postpone or suspend on-site Services, due to no fault of Seller, shall be subject to Seller's ability to recall its service representatives and to cancel and/or reschedule of any of their travel arrangements; and provided that, Buyer pays any and all additional costs (including, Travel Time and expenses) incurred by Seller as a result of the Services being postponed or suspended by Buyer. Cancellation of scheduled Services may be subject to a cancellation fee of twenty percent (20%) if Seller is notified less than 7 business days prior to the scheduled date of service.

6. DELIVERY OF SERVICES. Except as otherwise stated on the face hereof, all Services will be provided by Seller or its agent between the hours of 8:00 a.m. and 5:00 p.m. local standard time, Monday through Friday, excluding Seller's bnidiays, either at Seller's principal offices or, at Seller's option, at Buyer's installation address. If Seller advises Buyer that Services should be performed at Seller's facility, Buyer will properly package the Products to prevent damage, clearly mark the RMA number or the outer packaging, and ship it, via postage/frieight prepaid, back to Buyer's installation address stated on the quotation, or to such other address as Buyer requests. In the event Buyer requires expedited delivery, such delivery will be made at Buyer's expense. If Seller advises Buyer that Services should be performed at Buyer's site, Buyer will use its best efforts to provide Seller with all requested diagnostic information for any products requiring Services; and subject to compliance with Buyer'

thereof, as the case may be. All risk of loss or damage to Buyer's products being transported for Services shall remain with Buyer during shipment to and from the Buyer's site and during Seller's 8.

WARRANTIES. Seller's sole obligation with respect to the Services is to provide the quoted Services in a workmanlike manner and if Buyer provides notice of defect in Service within innety (90) days of completion of such Services, Seller will, at its sole option, either reperform the Services without charge to Buyer or grant Buyer a credit for the amount paid by Buyer with respect to such Service. Seller warrants that the Products will operate or perform substantially in conformance with Seller's published specifications and be free from defects in material and workmanship, when subjected to normal, proper and intended usage by properly trained personnel, for the period of time set forth in the Product accumentation, published specifications or package inserts, the Warranty Period Seller seption of package inserts (the "Warranty Period"). If a Warranty Period Seller seption of package inserts, the Warranty Period Seller's option, defective Product so as to cause the same to operate in substantial conformance with Seller's published specifications; provided that Buyer (a) promptly notifies Seller in writing upon the discovery of any covered defect in the Product model and serial number (if applicable) and details of the warranty claim; and (b) after Seller's review, Seller will provide Buyer with an RNA number and services draw, which may include biohazard decontamination procedures and other Products procedures and other Products procedures and other Products and Seller with an RNA number and services will be made in accordance with the Delivery clause of this Agreement. Except for new consumable items manufactured and sold by Seller. Shipment to Buyer of repaired or replacement Products or Seller with a service or services and other products in Seller and the product that Seller may have provided that Seller may ha

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malfunctions if the fault is not with the equipment. If Seller determines that Products for which Buyer requested warranty services are not covered by this warranty, Buyer will pay or reimburse Seller for all costs of investigating and responding to such request at Seller's then prevailing time and materials rates. If Seller provides Services or replacement parts that are not covered by this warranty, Buyer shall pay Seller therefor at Seller's then prevailing time and materials rates. ANY INSTALLATION, MAINTENANCE, REPAIR, SERVICE, RELOCATION OR ALTERATION TO OR OF, OR OTHER TAMPERING WITH, THE PRODUCTS PERFORMED BY ANY PERSON OR ENTITY OTHER THAN SELLER WITHOUT SELLER'S PRIOR WRITTEN APPROVAL, OR ANY USE OF REPLACEMENT PARTS NOT SUPPLIED BY SELLER, SHALL IMMEDIATELY VOID AND CANCEL ALL WARRANTIES WITH RESPECT TO THE AFFECTED PRODUCTS AND/OR SERVICES. THE OBLIGATIONS CREATED BY THIS WARRANTY STATEMENT FOR SELLER TO REPAIR OR REPLACE A DEFECTIVE PRODUCT OR TO REPERFORM OR CREDIT THE PRICE OF DEFECTIVE SERVICES SHALL BE THE SOLE REMEDY OF BUYER FOR SUCH DEFECTIVE PRODUCTS OR SERVICES UNDER THIS AGREEMENT. EXCEPT AS EXPRESSLY PROVIDED IN THIS WARRANTY STATEMENT, SELLER DISCLAIMS ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, ORAL OR WRITTEN, WITH RESPECT TO THE PRODUCTS, INCLUDING WITHOUT LIMITATION ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR NONINFRINGEMENT. SELLER DOES NOT WARRANT THAT THE PRODUCTS OR SERVICES ARE ERROR-FREE OR WILL ACCOMPLISH ANY PARTICULAR RESULT. RESULT.

RESULT.

9. INDEMNIFICATION.

9.1 By Seller. Seller will indemnify, defend and save Buyer, its officers, directors, and employees from and against any and all damages, liabilities, actions, causes of action, suits, claims, demands, losses, costs and expenses (including without limitation reasonable attorneys' fees) ("Indemnified Items") asserted by another party against Buyer for (i) bodily injury to or death of persons or damage to tangible property to the extent caused by the negligence or willful misconduct of Seller, its employees, agents or representatives or contractors in connection with the performance of Services at Buyer's premises under this Agreement; and (ii) claims that a Product infringes my U.S. patent, copyright or trade secret; provided, however, Seller's liability under this Section does not extend to any such Indemnified Items caused by either (u) the negligence or willful misconduct of Buyer, its employees, agents or representatives or contractors, (v) by any third party, (w) use of a Product in combination with equipment or software not supplied by Seller where the Product alone would not be infringing, (x) Seller's compliance with Buyer's designs, specifications or instructions, (y) use of the Product in an application or environment for which it was not designed, or (2) modifications of the Product by anyone other than Seller without Seller's prior written approval. Buyer will promptly notify Seller in writing of any claim covered by Seller's indemnification obligations hereunder. Seller may assume exclusive control of the defense of such claim or, at the option of the Seller, to settle the same. Buyer agrees to cooperate reasonably with Seller in connection with the performance by Seller of its obligations in this Section.

Notwithstanding the above, Seller's infringement related indemnification obligations shall be extinguished and relieved if Seller, at its discretion and at its own expense (a) procures for Buyer the right, at no additional expense to Buyer, to continue using the Prod

CLAIMS DESCRIBED HEREIN.

9.2 By Buyer. Buyer will indemnify, defend with competent and experienced counsel and hold harmless Seller, its parent, subsidiaries, affiliates and divisions, and their respective officers, directors, shareholders and employees, from and against any and all damages, liabilities, actions, causes of action, suits, claims, demands, losses, costs and expenses (including without limitation reasonable attorneys' fees and disbursements and court costs) to the extent arising from or in connection with (i) the negligence or willful misconduct of Buyer, its agents, employees, representatives or contractors; (ii) use of a Product in combination with equipment or software not supplied by Seller where the Product alone would not be infringing; (iii) Seller's compliance with designs, specifications or instructions supplied to Seller by Buyer; (iv) use of a Product in an application or environment for which it was not designed; or (v) modifications of a Product by anyone other than Seller without Seller's

contractors; (ii) use of a Product in combination with equipment or software not supplied by Seller where the Product alone would not be infringing; (iii) Seller's compliance with designs, specifications or instructions supplied to Seller by Buyer; (iv) use of a Product in an application or environment for which it was not designed; or (v) modifications of a Product by anyone other than Seller without Seller's prior written approval.

10. SOFTWARE. With respect to any software products incorporated in or forming a part of the Products hereunder (i.e., firmware). Seller and Buyer intend and agree that such software products are being licensed and not sold, and that the word "Buyer' or similar or derivative words are understood and agreed to mean "licenses", and that the word "Buyer' or similar or derivative words are understood and agreed to mean "licenses", and that the word "Buyer' or similar or derivative words are understood and agreed to mean "licenses", and that the word "Buyer' or similar or derivative words are understood and agreed to mean "licenses", and that the word "Buyer' or similar or derivative words are understood and agreed to mean "licenses", and that the word "Buyer' or similar or derivative words are understood and agreed to mean "licenses", and that the word "Buyer' or similar or derivative words are understood and agreed to mean "licenses", and that the word "Buyer' or similar or derivative words are understood and agreed to mean "licenses", and that the word "Buyer' or similar or derivative provided hereunder. Sulver's own internal business purposes. This license employes and the sulver's advantage on the sulver's advantage to the sulver's own internal business purposes. This license employes buyer's advantage to the sulver's own internal business purposes. This license derivative provided in the appreciate buyer's advantage and the sulver's advantage to the sulver's advantage and t

3. SUPPORT PLAN TERMS AND CONDITIONS.
A. General. In the event Buyer purchases a Support Plan from Seller under this Agreement, Seller agrees to maintain and/or repair those Products or instruments identified on the face hereof as covered under a Support Plan ("Covered Equipment") in a manner consistent with the specifications and entitlements included in the purchased Support Plan as specified by Seller on the face hereof, which may include various levels of service at the Buyer's site(s) and/or Seller's Depot Repair locations and are purchased separate from the original Product Warranty above (the "Support Service(s)"). The Support Services will only be valid for Covered Equipment within the Region covered by the Plan (e.g. 48 contiguous U.S.), Monday through Friday (excluding Seller's holidays) during the hours of 8:00 a.m. to 5:00 p.m. local standard time ("Normal Hours") during the term of the Agreement. The Covered Equipment must be operated according to the manufacturer's supplied instructions, including without limitation the Operator's Manual(s) and any malfunction must be promptly reported to Seller. Support Service calls requested outside of Normal Hours or for any non-Covered Equipment or for services not included in the Support Plan will be billed at Seller's standard rates for Technical Support in effect at the time of Buyer's request. Seller reserves the exclusive right to determine the assignment of its employees in the performance of Support Services.

B. Term. (a) Unless terminated sooner by either Party, the term of the Support Plan shall commence on the date of invoice and end on the one year anniversary of such date (the "Initial Term"): provided, that the then-current Term shall automatically renew for additional one year periods (each such extension, a "Renewal Term", and, collectively with the Initial Term, the "Term") unless either party provides written notice of its intent not to renew at least thirty (30) days prior to the end of the then-current Term and such invoice shall reflect a

Buyer.

C. Pricing and Pricing Assumptions. Except as otherwise agreed in writing, the annual charge for each Renewal will be Thermo Fisher's standard support plan rates in effect at the start of the Renewal. All Support Plan pricing is based on the assumption that the Covered Equipment operates in accordance with product specifications as of the coverage start date; therefore, prior to the start of each Term and Renewal, Seller reserves the right to verify and correct the condition of the Covered Equipment and invoice Buyer at Seller's current billable rates for any Support Services deemed reasonably necessary to bring the Covered Equipment into good operating condition. Notwithstanding the above, Seller agrees to waive its right to bill the Buyer for bringing the Covered Equipment into good operating condition if there is no lapse between the end date of the current Support Plan Term and the beginning of any Renewal.

D. Parts and Consumables: The Support Plan level defines when and if the cost of parts is included under the Support Plan. Notwithstanding the foregoing, the cost for parts that are consumed in the normal and usual operation of the Covered Equipment including, but not limited to, sample preparation and analysis, consumables, paper, ink cartridges, ribbons, pens, lamps and/or data media are not covered under any Support Plan.

E. Key Operator: Buyer will designate a key operator of Covered Equipment who can describe instrument malfunctions to Seller's service representatives buyer's failure to designate a key operator or to have an authorized representative perform the routine maintenance specified in the Covered Equipment's instructions or Owner's Manual may result, at Seller's option, in Buyer being invoiced at Seller's standard Technical Support rates to provide such non-covered services.

E. Equipment Modification: Seller reserves the right to make any changes in the design or construction of Seller's Products without incurring any obligation to make any updates or changes

Equipment Modification: Seller reserves the right to make any changes in the design or construction of Seller's Products without incurring any obligation to make any updates or changes whatsoever in the Covered Equipment under the Support Plan. Buyer agrees to allow Seller, at its expense and option, to make retrofits or design changes which improve product reliability, but do not change its performance characteristics. Any Buyer requests to modify or add devices or accessories to Covered Equipment that are not manufactured by Seller are outside the scope of the Support Plans and covered Support Services.

Plans and covered Support Services.

G. Support Services Warrantly: Seller's sole obligation under any Support Plan is to provide the Support Services in a workmanlike manner in accordance with the entitlements of the Support Plan purchased by Buyer hereunder. SELLER MAKES NO OTHER WARRANTIES FOR SUPPORT SERVICES PROVIDED UNDER A SUPPORT PLAN, EXPRESS OR IMPLIED, AND DISCLAIMS ALL WARRANTIES INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ANY OTHER OBLIGATIONS OR LIABILITIES WHETHER IN CONTRACT, WARRANTY, NEGLIGENCE OR OTHERWISE.

H. Support Plan Exclusions: The following occurrences are not covered by any Support Plan purchased by Buyer from Seller under this Agreement:

(a) Covered Equipment malfunctions caused by any of the following abnormal conditions; and if Seller performs Support Services as a result thereof, Seller will invoice Buyer at Seller's standard billable rates for service, travel or move, labor and parts: (i) Shipping damage incurred en route to Buyer's site or any subsequent transport thereafter; (ii) Force Majeure events, including for example, floods, lightning, earthquake, tornado, hurricane or fire, bombing, terrorism, armed conflict, malicious mischief, sabotage or other such natural or manmade disasters; (iii) Physical abuse, misuse, sprinkler damage, electrical surge or abnormal power variation; (iv) Repairs, maintenance, or modifications made by anyone other than Seller's trained personnel or without Seller's supervision and/or approval; and (v) Relocation and reinstallation of Covered Equipment are not covered under the Support Plan; however, upon request Seller, will supervise the removing, crating, relocation and reinstallation or its products at Seller's standard billable rates for service, travel or move, labor and parts.

(b) Maintenance or replacement of media (i.e., floppy disks, printer supplies, etc.) whatever the reason for loss, failure or damage;

(c) Servicing of material or instruments manufactured by anyone

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Beta-site support; Service calls made to train operators; and/or

(d) Beta-site support;
(e) Service calls made to train operators; and/or
(f) Service calls made as a result of Buyer-dentified grass of responsibility, i.e. malfunctions related to Buyer's site conditions, utilities and/or facilities (power, water, temperature, humidity,
(f) Service calls made as a result of Buyer-dentified grass of responsibilities. Buyer will give Selter's personnel reasonable access to the Covered Equipment whenever Support Service is required. Buyer will cooperate with Selter's personnel reasonable access to the Covered Equipment whenever Support Services is required. Buyer will cooperate with Selter's personnel reasonable access to the Covered Equipment whenever Support Services is required. Buyer will cooperate with Selter's personnel reasonable control to the support Services. Buyer is scielly responsible for the procurement, installation, maintenance and flees associated with all third party communication equipment and media as needed for the task Support Services can be performed efficiently and without provides of the provident of on-site Services purchased hereunder; as applicable, Selter agrees to maintain and carry is albity instruance and the self-services and the services purchased hereunder; as applicable, Selter agrees to maintain and carry is albity instruance of the self-services and t

	BUYER	SELLER	
Bv:	DOTEIX	Bv:	
Print Name:		Print Name:	
Print Title:		Print Title:	
Date:		Date:	
			conditions of Sale for Products and Service to all future orders of Products and Services from Seller, whether or no
the Agreement is re	ferenced on Seller's	quote or Buyer's Purchase Orders, for	(write # of years) from later date of the parties' signature, or until either party provides written notice that this

Thermo Electron North America LLC 1400 Northpoint Pkwy Suite 10 West Palm Beach, FL 33407-1976

Equipment Location Summary

Material	Serial no.	Your Ref.	Description			
0746560	SN01116N		NEPTUNE PLUS BUNDLE 7, DUAL RPQ			
NUCL						
Our record location:		Actual location, if different:				
UNIVERSITY OF WY						
GEOLOGY/GEOPHYSICS						
16TH STREET & GIBBON						
LARAMIE WYUS						
82071-3663						
Your Service Contact:	1					
	·					
Please indicate char	ges as necessary and fax to: 8	77-867-8945				
. • • • • • • • • • • • • • • • • • • •						

Page 1 of 1

Federal ID No: 95-4888283

Quote No: 00074148-3

Rev: 00 Print Date:12/18/2024

Sold To:

University of Wyoming 1000 East University Avenue Laramie, WY 82071

United States

Sales Quotation

Bill To:

University of Wyoming 1000 East University Avenue Laramie, WY 82071 United States

Ship To:

University of Wyoming

1000 East University Avenue Laramie, WY 82071

United States

Customer Reference Customer Contact			Email			Delivery Terms	
Jacob Smith 402-321-5763 Gr	eg Stark		gsta	rk2@uw	yo.edu	Domestic ONLY-0	Origin - Prepaid
Quotation Valid Until Teledy	ne Contact	Tel	Teledyne Phone Payr		Paym	ent Terms	Payment Mode
1/31/2025 Smith,	Jacob				Web I	Payments	CCARD
SUBMIT ORDERS TO:					Nan	ned Destination	Creation Date
Teledyne CETAC Technologies, 14	4306 Industrial Rd, Omaha,	NE 68144. Ema	il: cetacsales@te	ledyne.cor	n		11/21/2024
Line Item Number	Description			U/M Qi	uantity	Unit Price	Amount
0 AR3-99-0001	ARIDUS 3 Deso \$22,280 is an es	Ivating Nebul stimate ONLY	izer System for 2025 pricir	ea ng based	1.00 I upon s	0 22,280.00 suspected cost inc	,
0 SP8027A	Lead time: 1 NEB. GAS KIT A	Days ARO ARIDUS II		ea	1.00	0.00	0.00
0 SP8204	Lead time: 5 C-FLOW 50 uL/I	Days ARO MIN PFA NEE	B FOR ARIDUS	ea S I, II, &	1.00 3	0.00	0.00
	Lead time: 15	Days ARO					

These items are controlled by the U.S. Government and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of, to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. government or as otherwise authorized by U.S. law and regulations.

Total Amount

22,280.00 USD

Seller's Offer, and any order issued by Buyer to Seller for the goods and/or services specified herein, is expressly limited to Seller's General Terms and Conditions of Sale, which can be found at www.teledyne.com/what-we-do/terms-and-conditions. Seller objects to any different or additional terms except, in connection with an order in furtherance of a government prime contract, those government contract clauses that are required by law to be incorporated herein.