Sole Source Application and Determination Form

A sole source determination is not effective until the sole source application for determination has been posted on the Purchasing website for thirty (30) calendar days without protest and is subsequently approved in writing by the Vice President of Administration and Finance.

1. Name of Department: Petroleum Recovery Research Center
   Contact Name: Sai Wang
   Phone: 575-835-5838
   Email: sai.wang@nmt.edu

2. Name of Prospective Vendor:
   Contact Name: Anton Paar
   Phone: +1-310-775-2196
   Email: masih.rezaee@anton-paar.com
   Estimated Cost: $33,277.5
   Duration (for Services or Professional Services – limited to four years):

3. Purpose/need for purchase and detailed list of items of tangible property, services, or professional services:

This purchase is required to support the Chevron-selected research project, “Laboratory Evaluation of Asphaltene Deposition (LEAD) and Inhibitor Performance under HPHT High-Shear Mixing”. The experimental methodology specified in this project is based on a pressure-rated rheometer cell compatible with an MCR rheometer system. The following Anton Paar equipment is required:

One (1) PRESSURE CELL CC33.2/PR150/SS/XL Complete System, Item No. 24076. The system includes:
• magnetic coupling;
• pressure head XL rated to 150 bar;
• measuring cup for pressure cell XL rated to 150 bar and 200°C;
• measuring system B-CC33.2/PR/TI;
• one top gas connection;
• one bottom sample inlet; and
• accessory set for the pressure cell.

One (1) C-ETD 200/XL for XX2 Electrical Temperature Device, Item No. 47770. The device provides a temperature range of -20°C to 200°C and is designed for use with the applicable Anton Paar MCR rheometer configuration.

4. Detailed explanation of criteria developed for this purchase:

The technical criteria for this purchase were developed directly from the experimental requirements and scope of work in the Chevron-selected LEAD project. The required equipment must:
• be compatible with the MCR rheometer platform used for the proposed experimental methodology;
• provide a pressure-rated test environment suitable for HPHT asphaltene deposition experiments;
• provide controlled temperature operation at the temperatures required for the proposed experiments;
• support high-shear rotational testing for evaluating asphaltene deposition under dynamic conditions;
• provide appropriate pressure-cell geometry and metallic wetted/deposition surfaces for direct evaluation of asphaltene attachment and deposition;
Based on these criteria, the required configuration is the Anton Paar CC33.2/PR150/SS/XL pressure-cell system together with the C-ETD 200/XL electrical temperature device. The quoted pressure cell provides a 150-bar pressure head and measuring cup rated for operation up to 200°C, while the C-ETD 200/XL provides temperature control from -20°C to 200°C. These specifications meet the pressure, temperature, rheological, and experimental-configuration requirements of the proposed research.

5. Provide a detailed, sufficient explanation of the reasons, qualifications or unique capabilities of the prospective vendor that make that prospective vendor the one source for providing the items of tangible property, services, or professional services:

Anton Paar USA, Inc. is the required source for this procurement because the requested components are manufacturer-specific compatible components on upgrading the existing Anton Paar MCR rheometer platform at PRRC-NMT and are designed as an integrated pressure and temperature-control system for that platform. Purchasing a nominally similar pressure vessel, temperature chamber, or rheometer accessory from another manufacturer would not establish that it is mechanically and operationally compatible with the specified MCR rheometer platform. Such substitution could require custom adapters, modifications, engineering validation, or redesign of the experimental method and could affect pressure/temperature operating limits, measurement geometry, experimental reproducibility, and comparability of the resulting data. Using another manufacturer would create compatibility issues and require system adaptation/redesign, additional piping or modifications, additional cost, and project delays.

Accordingly, Anton Paar is the appropriate sole source for the manufacturer-specific components required to implement the MCR-based experimental configuration described in the Chevron-selected project in which the Anton Paar quote/vendor was included in the proposal package and approved by the funding agency.

6. Provide a detailed, sufficient explanation of how the items of tangible property, services, or professional services is/are unique and how this uniqueness is substantially related to the intended purpose of the department/grant:

The selected project specifically proposes a pressure-rated rheometer-cell methodology compatible with an MCR rheometer system. The CC33.2/PR150/SS/XL provides the specialized high-pressure

experimental environment required for this methodology, including pressure containment up to 150 bar, operation up to 200°C, a magnetic coupling, measuring geometry, and gas/sample connections. The C-ETD 200/XL provides the corresponding controlled-temperature environment.

7. Please provide a narrative description department's due diligence in determining a basis for the procurement. Include:
    a. method used to research and review other available sources (i.e. list of potential vendors from Purchasing, internet, state pricing agreements, purchasing cooperatives)
    b. list of vendors contacted, the date and method of contact (i.e. email, phone call)
    c. documentation explaining why:
        i. those vendors cannot provide the required items of tangible property, services, or professional services
        ii. other similar items of tangible property, services, or professional services cannot meet the intended purpose of department/grant:

The department evaluated the procurement based on the specific technical requirements established in the Chevron-selected research proposal, including MCR rheometer compatibility, HPHT operation, controlled rotational/shear testing, pressure containment, temperature control, appropriate measuring geometry, and the ability to implement the proposed asphaltene deposition methodology.

Vendors contacted, date, and method of contact:
Anton Paar USA, Inc.
Contact: Masih Rezaee
Method: Vendor quotation
Quotation No.: 820299681
Quotation Date: July 24, 2026

The required pressure cell and temperature-control components are specifically configured for integration with the Anton Paar MCR rheometer platform identified for the proposed experimental methodology. A third-party pressure cell or temperature-control device would need to demonstrate mechanical, measurement-geometry, pressure, temperature, and operational compatibility with this platform. A stand-alone pressure vessel or nominally similar HPHT device therefore is not an equivalent substitute merely because it has comparable pressure or temperature ratings.
Use of a non-integrated alternative could require custom fabrication, adapters, engineering modifications, additional safety and pressure validation, or redesign of the experimental procedure. These changes could alter the measurement geometry and experimental conditions and therefore affect reproducibility and comparability of the deposition measurements.
Based on the technical review and the requirement for manufacturer-specific compatibility with the selected MCR-based experimental platform, the department determined that procurement of the specified components directly from Anton Paar USA, Inc. is necessary to meet the technical requirements and intended purpose of the Chevron-selected project.

I certify I have performed thorough and diligent research and analysis to determine that Anton Paar USA, Inc. is the only source capable of providing the required **PRESSURE CELL CC33.2/PR150/SS/XL COMPLETE SYSTEM and C-ETD 200/XL FOR XX2 ELECTRICAL TEMPERATURE DEVICE**. I understand that violations of the New Mexico Procurement Code (Chapter 13, Article 1 NMSA 1978) can carry severe penalties. I affirm that the information provided in this Sole Source Determination is true and accurate to the best of my knowledge and belief.

Name, Title: Dr. Sai Wang, Assistant Professor

AdobeSign/Date

09/14/2026

Review: Purchasing Services (Name, Title): Meradeth Montoya
Associate Director of Purchasing

AdobeSign/Date

Meradeth Montoya
9.15.2026

Website Posting Date: 09/16/2026

Posting Expiration Date: 10/16/2026

Protested (Yes/No):

Approval: Delilah A. Walsh
Vice President of Administration and Finance

AdobeSign/Date

15-Sep-2026

Version: July 2025