



Purchasing Services Office
801 Leroy Place
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Letter of Addendum

TO: All Offerors

FROM: Kimela Miller

DATE: October 29, 2021

RE: RFP Number: 2209025C – Amendment #2
Commodity: Drill, construct, core and log a stratigraphic well

Please check the NM Tech website often for updates on this RFP.

Q1) Perforating/Slickline/Wireline Services – Page 11

A2) Required Type of Perforating Gun;

- Gun size: **4-in OD**
- Perforating deg Phase: **90**
- # of shots for the interval (Shot per ft): **4 SPF**
- Min Req Perforating Hole Size (If Any): **N/A**
- Min Req Perforating length (If Any): **4 - 12 inches**
- What is the Rock Type (If Known For the Perforation Modelling): **sandstone**
- What is the anticipated Porosity (If Known For the Perforation Modelling): **0.0 - 0.1 fraction**
- What is the anticipated Interval Hz Permeability (If Known For the Perforation Modelling): **2-30 mD**
- What is the anticipated interval Ver Permeability (If Known For the Perforation Modelling): **2-30 mD**
- What is the Slickline required work of scope? **The slickline was designed for the perforating service. If your perforation service will not require the slickline or is already covered in your proposal, please skip this item.**

Q2) A question regarding sampling under the section named DUCTILITY - page 21, 3rd paragraph (third item in table on that page) (copied below).

Description of Problem:

We are having a difficult time estimating the total number of plugs and tests needed to perform this work. The quantity 37 is indicated, but we wonder whether this is the number of tests or number of intervals to be tested.

Here are the quantities requested:

- Brushy Basin 6 confining unit
- Salt Wash 4
- Bluff 4
- Summerville 9 potential confining unit
- Todilto 2 important confining unit
- Entrada 6
- Chinle 6 lower sealing lithology

Based on the description of work "(obtain entire strength-strain curve and brittle-to-ductile transition); use multiple confining pressures; sampling and testing conditions should address anisotropy as appropriate (e.g., for confining zones; using sets of samples at three orientations – horizontal, vertical, and 45 deg.);" this wouldn't be possible for the Todilto with only two samples requested. We then wondered whether these are intervals or tests and whether the tests are to be run single-stage (one plug per confining pressure) or multi-stage (one plug; multiple confining pressures). We understand that the UCS testing requested in the RFP under "**Rock Strength**" (Pg. 21 4th paragraph/section may be used to define the full stress/strain envelope.

Specifically:

- Brushy Basin 6 confining unit
→ is this anticipated to be horz/vert/45 deg + 3 add'l vertical plugs?
- Salt Wash 4
→ is this anticipated to be 4 vertical plugs?
- Bluff 4
→ is this anticipated to be 4 vertical plugs?
- Summerville 9 potential confining unit
→ is this anticipated to be horz/vert/45 deg + 6 add'l vertical plugs?
- Todilto 2 important confining unit
→ is this anticipated to be 2 vertical plugs (*understand this fm may be comprised of gypsum/anhydrite?*)
- Entrada 6
→ is this anticipated to be horz/vert/45 deg + 3 add'l vertical plugs?
- Chinle 6 lower sealing lithology
→ is this anticipated to be horz/vert/45 deg + 3 add'l vertical plugs?

Any context and clarification will be much appreciated!"

"We are requesting triaxial or similar testing to meet the required data on "ductility" by the UIC rule. We repeat the description of the testing requested:

- "Triaxial testing loaded to beyond failure to observe residual strength (obtain entire strength-strain curve and brittle-to-ductile transition); use multiple confining pressures; sampling and testing conditions should address anisotropy as appropriate (e.g., for confining zones; using sets of samples at

three different orientations - horizontal, vertical, and 45°); tests should evaluate static and dynamic elastic properties; should include measurement of ultrasonic velocities."

Please note the following:

- The estimate of 37 samples is for the number of plugs for the triaxial or similar testing. This estimate was not meant to be exact or restrictive and depends on the actual extent of recovered core and core heterogeneity. A price per plug for a particular test would be helpful, as we would expect the possibility of core plug testing beyond the 37 quoted if necessary.
- The formation names and numbers of the estimated plugs for triaxial or similar testing is based on the prior knowledge of the formations and assumptions on the number of plugs needed for testing, given that some formations may be anisotropic and heterogeneous, and others less so.

The vendor should propose a plan that allows flexibility to tailor the number of sample plugs after core retrieval and a core review by the CarbonSAFE team (for fractures and lithofacies), as samples for testing will depend on recovery, quality, and heterogeneity of the core.

The requested UCS testing will help define stress/strain envelopes and in assessing anisotropy. The triaxial testing will help assess presence or absence of ductile behavior over a stress regime relevant to the CarbonSAFE goals."

All Offerors are required to confirm the receipt of this amendment in their response. All other terms and conditions of the RFP remain unchanged.

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