Opportunity Title: USGS Mineral Resources and Geochemistry of Produced Water in Oil and Gas Basins
Opportunity Reference Code: DOI-USGS-2026-42

Organization U.S. Department of the Interior (DOI)

Reference Code DOI-USGS-2026-42

How to Apply ***To submit your application, scroll to the bottom of this opportunity and click APPLY.***

A complete application consists of:

- An application
- Transcript(s) – For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. Click here for detailed information about acceptable transcripts.
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional recommendations.

All documents must be in English or include an official English translation.

Connect with ORISE...on the GO! Download the new ORISE GO mobile app in the Apple App Store or Google Play Store to help you stay engaged, connected, and informed during your ORISE experience and beyond!"

Description

***Applications will be reviewed on a rolling-basis.**

USGS Office/Lab and Location: A research opportunity is currently available with the U.S. Geological Survey (USGS) located in Reston, Virginia.

The USGS mission is to monitor, analyze, and predict current and evolving dynamics of complex human and natural Earth-system interactions and to deliver actionable intelligence at scales and timeframes relevant to decision makers. As the Nation's largest water, earth, and biological science and civilian mapping agency, USGS collects, monitors, analyzes, and provides science about natural resource conditions, issues, and problems.

Research Project: Produced waters are the largest waste stream associated with the petroleum industry in the United States, generating in excess of 1 trillion gallons of water per year in the domestic U.S. Recently, USGS scientists have developed techniques to characterize and map the mineral (e.g., lithium) content of these waters for potential use by private industry.

These projects would aim to prepare and analyze recently collected produced waters for geochemical and isotope analysis in USGS laboratories in collaboration with USGS scientists. You would have the opportunity to gain experience in the preparation of produced water sampling apparatus to be used in a field campaign in Fall 2026.

Opportunity Title: USGS Mineral Resources and Geochemistry of Produced Water in Oil and Gas Basins
Opportunity Reference Code: DOI-USGS-2026-42

In this research learning opportunity you would have the opportunity to:

- Prepare produced water samples from NY, AL & MS for sulfur and oxygen isotope analysis
- Gain experience from BRInE laboratory managers and analyst with the development of a sulfide distillation apparatus to characterize sulfur species for fingerprinting produced waters
- Document and split samples for sending off to external laboratories for further analysis.
- Gain experience from the USGS field sampling team with the preparation of sampling kits for a campaign in North Dakota
- Develop analytical chemistry skills and an understanding of the importance of isotope geochemistry in geological studies
- Understand how to develop and maintain a scientific notebook.
- Participate in the development of laboratory apparatus and standard operating procedures (SOP) in an active laboratory environment
- Collaborate with USGS team members to organize a field campaign with the logistics of sampling and testing of field apparatus.

Learning Objectives: You will receive structured mentorship through regular meetings with the Lead Scientist during the initial weeks to support onboarding and familiarity with relevant literature. The BRInE laboratory manager and analyst will provide guidance on maintaining a laboratory notebook and understanding standard operating procedures. You will also gain hands-on experience preparing sampling kits and testing field equipment, building foundational skills in laboratory and field readiness.

Mentor: The mentor for this opportunity is Andrew Masterson (amasterson@usgs.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: June 15, 2026. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for 10 weeks, but may be renewed upon recommendation of DOI and is contingent on the availability of funds.

Level of Participation: The appointment is full time.

Participant Stipend: Stipend rates may vary based on numerous factors, including opportunity, location, education, and experience. If you are interviewed, you can inquire about the exact stipend rate at that time and if selected, your appointment offer will include the monthly stipend rate.

Citizenship Requirements: This opportunity is available to U.S. citizens, Lawful Permanent Residents (LPR), and foreign nationals. Non-U.S. citizen applicants should refer to the Guidelines for Non-U.S. Citizens Details page of the program website for information about the valid immigration statuses that are acceptable for program participation.

ORISE Information: This program, administered by ORAU through its

Opportunity Title: USGS Mineral Resources and Geochemistry of Produced Water in Oil and Gas Basins
Opportunity Reference Code: DOI-USGS-2026-42

contract with the U.S. Department of Energy (DOE) to manage the Oak Ridge Institute for Science and Education (ORISE), was established through an interagency agreement between DOE and USGS. Participants do not become employees of USGS, DOE or the program administrator, and there are no employment-related benefits. Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE.

Questions: If you have questions about the application process please email USGS@orau.org and include the reference code for this opportunity.

Qualifications The qualified candidate should be currently pursuing or have received a bachelor's or master's degree in the one of the relevant fields. Degree must have been received within the past four years, or anticipated to be received by 6/1/2029.

Point of Contact Rachel

Eligibility Requirements

- **Degree:** Bachelor's Degree or Master's Degree received within the last 48 months or anticipated to be received by 6/1/2029 12:00:00 AM.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12)
  - **Communications and Graphics Design** (2)
  - **Computer, Information, and Data Sciences** (17)
  - **Earth and Geosciences** (21)
  - **Engineering** (28)
  - **Environmental and Marine Sciences** (14)
  - **Life Health and Medical Sciences** (51)
  - **Mathematics and Statistics** (11)
  - **Physics** (16)
  - **Science & Engineering-related** (1)