CROWDPLAT

BUREAU OF RECLAMATION

DESIGNING A DUAL-TRACK PFAS INNOVATION CHALLENGE FOR USBR

Challenge Design • Environmental Innovation • PFAS Sampling & Detection

Overview

The U.S. Bureau of Reclamation (USBR) sought a modern, high-impact challenge design to accelerate innovation in PFAS sampling and detection. CrowdPlat and Freelancer partnered to architect a dual-track prize competition—one focused on PFAS sampling technologies and the other on PFAS detection methods—aligned with new EPA regulations and USBR's mission to protect public health and water systems.

Challenge

USBR needed a robust challenge structure that could:

- Attract a wide, diverse pool of innovators
- Ensure solutions addressed scientific, regulatory, and operational realities
- Maintain FAR-compliant processes
- Define clear, measurable success metrics
- Support two parallel technical problem spaces under one unified program

Our Approach to Challenge Design Client Overview

CrowdPlat built a **comprehensive challenge design framework**, spanning objectives definition, evaluation architecture, SME integration, branding, and technical setup—forming the foundation for a rigorous, compliant, and innovation-driving competition.

1. Objectives Refinement & Requirements Definition

CrowdPlat worked closely with USBR stakeholders and PFAS SMEs to:

- Clarify challenge goals, outcomes, and impact expectations
- Translate regulatory constraints into practical challenge parameters
- Define success metrics for PFAS sensitivity, feasibility, cost, scalability, & environmental safety

- Prepare a consolidated challenge plan with milestones, communication protocols, and decision gates

This ensured the challenge targeted solutions that were both scientifically viable and operationally relevant.

2. Dual-Track Challenge Architecture

CrowdPlat designed a structure that ran sampling and detection competitions concurrently, with:

- Unified branding and background content
- Distinct submission templates for each track
- Track-specific evaluation criteria and scoring rubrics
- Competition rules, eligibility criteria, and legal frameworks aligned to FAR

This design allowed USBR to solicit innovations tailored to the unique complexities of each domain while maintaining administrative efficiency.

3. Evaluation Framework & Judging Rubrics

CrowdPlat and SMEs collaborated to create rigorous, science-aligned scoring criteria:

- PFAS Sampling Criteria: feasibility, absorption minimization, deployment practicality
- PFAS Detection Criteria: sensitivity (single-digit ppt), innovation beyond LC-MS, accuracy
- Cross-cutting criteria: scalability, cost-effectiveness, clarity, environmental impact

These rubrics ensured consistency and objectivity in evaluation.

4. Expert Integration into the Challenge Design

CrowdPlat secured three nationally recognized PFAS experts:

- Dr. Rainer Lohmann – sampling techniques and PFAS transport
- Dr. Debora Rodrigues – cost-effective, scalable water-treatment innovations
- Dr. Jamie DeWitt – toxicology, regulatory alignment, public-health impact

Their contributions shaped:

- Technical requirements
- Solution eligibility criteria
- Scientific validity checks
- Challenge language and expectations

Their involvement boosted credibility and ensured environmental, toxicological, and engineering rigor.

CROWDPLAT

BUREAU OF RECLAMATION

5. Branding, Platform Setup & Compliance

CrowdPlat and Freelancer jointly designed:

- A fully branded challenge presence with a custom URL
- Secure submission pathways with identity checks and KYC compliance
- Clear participation agreements aligning with IP, confidentiality, and FAR requirements
- Tailored communication templates, Q&A guidance, and support channels

This made the challenge professional, accessible, and transparent for all participants.

6. Outreach Strategy Integrated Into Design

To ensure broad reach from diverse talent, the challenge design included:

- Outreach pathways to environmental labs, universities, and STEM institutions
- Inclusion strategy targeting underrepresented groups and early-career innovators
- Messaging aligned to scientific communities
- Media, press, and targeted digital promotion concepts

By embedding the outreach strategy into the design itself, CrowdPlat ensured the challenge would attract top-tier, multidisciplinary ideas.

Outcome

CrowdPlat delivered a complete, FAR-compliant challenge design, providing USBR with:

- A scientifically grounded dual-track competition architecture
- Clear objectives, rules, scoring, and governance
- Expert-validated challenge statements
- Ready-to-launch branding and platform setup
- A blueprint that maximized participation, diversity, and innovation quality

This design positioned USBR to rapidly surface breakthrough PFAS solutions while ensuring fairness, compliance, and scientific rigor.