EXPRESSION OF INTEREST

ADVANCING PETROLEUM HYDROCARBON F2 AND F3 MANAGEMENT LIMITS

ISSUED BY:

PTAC PETROLEUM TECHNOLOGY ALLIANCE CANADA

ALBERTA UPSTREAM PETROLEUM RESEARCH FUND (AUPRF)

REMEDIATION & RECLAMATION RESEARCH COMMITTEE (RRRC)

EOI ID: 26-RRRC-EOI-02

EOI Issue Date: October 5, 2026

EOI Response Deadline: October 23, 2026, 5PM MT

PETROLEUM TECHNOLOGY ALLIANCE CANADA

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EXPRESSION OF INTEREST

Advancing Petroleum Hydrocarbon F2 and F3 Management Limits

1. Invitation

Petroleum Technology Alliance Canada (PTAC), through the Alberta Upstream Petroleum Research Fund (AUPRF) Remediation & Reclamation Research Committee (RRRC), invites Expressions of Interest (EOIs) from qualified research organizations, consultants, academic institutions, laboratories and multidisciplinary teams interested in supporting future research related to **petroleum hydrocarbon (PHC) F2 and F3 management limits within Alberta**.

The RRRC is seeking expertise to help address scientific and technical questions associated with the current management-limit framework and to identify research that could strengthen the evidence base supporting future management-limit decisions.

Significant research has previously been undertaken to evaluate petroleum hydrocarbon management limits, particularly for remote forested sites in Alberta's Green Area. The committee is interested in building upon that work by addressing remaining technical uncertainties and evaluating where additional evidence could meaningfully improve the framework.

This EOI represents the **first stage of a planned multi-stage procurement process**. At this stage, PTAC does not request a detailed proposal, methodology or cost estimate. The intent is to:

- identify organizations with the appropriate expertise and capabilities;
- identify potential multidisciplinary research teams;
- communicate the research opportunity and existing knowledge base;
- gather preliminary perspectives on priority research areas;
- invite qualified prospective proponents to a subsequent technical clarification session; and
- use that process to support development of a focused Request for Proposals (RFP).

Respondents are encouraged to consider the management-limit framework **holistically** and identify where research would provide the greatest scientific, regulatory and practical value.

2. About the Alberta Upstream Petroleum Research Fund

The Alberta Upstream Petroleum Research Fund (AUPRF) is an industry-funded research program administered by PTAC. AUPRF supports collaborative research addressing environmental and operational challenges relevant to Alberta's upstream oil and gas sector. Research priorities are developed with participation from industry, government, regulators and technical experts. The Remediation & Reclamation Research Committee identifies and advances research intended to improve the scientific and technical foundation supporting remediation, reclamation and contaminated-site management in Alberta. Through this EOI, the RRRC is seeking to build upon previous collaborative work related to petroleum hydrocarbon management limits and identify the most valuable next phase of research.

3. Background

Petroleum hydrocarbon management limits provide upper-bound conditions within contaminated-site assessment and management frameworks. They complement pathway-specific environmental criteria by considering circumstances where increasing petroleum hydrocarbon concentrations may result in physical, environmental, technological or exposure-related concerns that are not adequately addressed by an individual pathway-specific guideline alone.

Previous work related to PHC management limits has considered factors such as:

1) mobile free-phase formation;
2) worker exposure to petroleum hydrocarbon vapours in trenches;
3) fire and explosion hazards;
4) effects on buried infrastructure;
5) aesthetic considerations;
6) technological feasibility;
7) hydrophobicity; and
8) upward migration of hydrocarbons into the root zone.

A significant body of technical work has been completed over time by organizations including the Canadian Council of Ministers of the Environment (CCME), Environment and Climate Change Canada (ECCC), PTAC and other research organizations.

More recent technical work has re-examined aspects of the F2 and F3 management-limit framework in the context of the guidelines for remote forested sites in the Green Area and has highlighted areas where additional scientific evidence, field validation or updated methodologies may be beneficial. **The RRRC sees an opportunity to build upon this substantial body of work rather than reproduce it.**

4. Research Opportunity

The overarching opportunity is to strengthen the scientific evidence supporting Alberta's F2 and F3 petroleum hydrocarbon management limits. While the initial application is focused on upstream oil and gas sites in Alberta's Green Area, research findings should improve the broader understanding of the factors and assumptions that underpin the management-limit framework.

The committee has identified several areas where additional evidence is required before modifications to existing management limits can be considered. Respondents are encouraged to develop research projects that directly address one or more of the following priority areas:

- Free-phase petroleum hydrocarbon formation and NAPL behaviour, including factors influencing NAPL occurrence, stability, mobility, residual saturation, and the relationship between petroleum hydrocarbon concentrations and free-phase development.

- Worker exposure to petroleum hydrocarbon vapours in trenches and excavations, including validation of exposure assumptions and representative field conditions.
- Fire and explosion hazards associated with various F2 and F3 hydrocarbon compositions, including the relationship between hydrocarbon composition, soil vapours, lower explosive limits (LEL), and ignition potential.
- Long-term effects of petroleum hydrocarbons on buried infrastructure and construction materials, including material degradation, permeation, diffusion, realistic subsurface exposure conditions, and factors influencing infrastructure exposure to petroleum hydrocarbons.
- Technological factors that influence the practicality of remediation and management, including biodegradation potential and treatment limitations at elevated F2 and F3 concentrations.
- Aesthetic impacts, including odour, visible soil impacts, potable water quality concerns, and the petroleum hydrocarbon constituents responsible for these effects.
- The contribution of co-occurring compounds, including BTEX and PAHs, to potential adverse effects and their implications for management-limit development.

These priority areas are intended to address evidence gaps and uncertainties identified through previous reviews of Alberta's F2 and F3 petroleum hydrocarbon management limits and related supporting documentation. Research may include field studies, laboratory investigations, modelling approaches, synthesis of existing datasets, or a combination of these methods.

The objective is not to pre-determine whether management limits should be increased, decreased, or maintained. Rather, respondents should focus on generating scientifically defensible evidence that can be used to evaluate existing management-limit assumptions, address identified data gaps, and support future policy and regulatory decision-making.

5. Initial Geographic and Regulatory Context

The focus of this initiative is expected to be upstream oil and gas sites within Alberta's Green Area. The Green Area provides a useful starting point because land use, foreseeable activities and receptor scenarios can differ materially from developed, agricultural or urban settings.

Certain management-limit considerations, for example, intrinsic flammability characteristics, may have broader relevance independent of land use. Others, such as foreseeable excavation, worker exposure, infrastructure and human contact, may vary significantly depending on the land-use context.

Respondents are welcome to identify broader applications or implications where relevant. However, the initial research program should remain sufficiently focused to generate practical and defensible outcomes.

A separate policy discussion is underway regarding geographic eligibility for application of remote criteria. **That issue is outside the scope of this EOI at this time.**

6. Integrated Management-Limit Assessment

The central objective of this initiative is to avoid examining individual research questions in isolation. Management limits represent an **integrated framework**, and research into one factor may have limited practical value if another factor continues to determine the final applicable concentration.

The committee therefore encourages respondents to consider questions such as:

- What currently controls the management limit for the relevant fraction, soil type and scenario?
- Where is the scientific evidence strongest and weakest?
- If a particular assumption were revised, would another consideration become limiting?
- What research has the greatest potential to materially affect the overall framework?
- Which questions can be resolved through literature review or existing datasets?
- Which questions require new laboratory or field research?
- Are there opportunities to sequence research so that lower-cost questions are addressed before undertaking more extensive studies?
- Are there dependencies among research themes that should influence project design?

The committee is particularly interested in **efficient research prioritization** that directs resources toward questions capable of producing meaningful environmental, operational or regulatory value.

7. Existing Knowledge and Avoidance of Duplication

Respondents will be expected to build upon the substantial body of work already completed.
The following publicly available materials are considered relevant starting points. This list is intended to assist prospective respondents and should not be considered exhaustive.

Key Reference Materials

Canadian Council of Ministers of the Environment (CCME). (2008).
Canada-wide Standard for Petroleum Hydrocarbons (PHC) in Soil. Winnipeg, MB: CCME.
Contaminated Sites Approved Professionals Society (CSAP). (2012).
Review of Petroleum Hydrocarbon Trench Vapour Models Referenced by Alberta Tier 1 Guidance.
Millennium EMS Solutions Ltd. (2013).
Proposed Management Limits for F2 and F3 Petroleum Hydrocarbons at Remote Alberta Green Zone Sites. Prepared for Petroleum Technology Alliance Canada.
Millennium EMS Solutions Ltd. (2013).
Proposed Exclusion Depths for the Ecological Direct Contact Exposure Pathway at Remote Alberta Green Zone Sites. Prepared for Petroleum Technology Alliance Canada.
Alberta Innovates Technology Futures (AITF), Drozdowski, B., Fraught, B., & Degenhardt, D. (2013).
Residual Saturation, Fire/Explosion Hazard and Hydrophobicity: Methodology and Results. Prepared for the PTAC Green Zone Subsoil Guideline Project.

Alberta Environment and Sustainable Resource Development (ESRD). (2014).
Subsoil Petroleum Hydrocarbon Guidelines for Remote Forested Sites in the Green Area.
Petroleum Technology Alliance Canada (PTAC). (2022).
Re-evaluation of F2 and F3 Petroleum Hydrocarbon Management Limits. Draft technical report.
Environment and Climate Change Canada. (2022).
Supplemental Guidance on Implementation of the Canada-wide Standard for Petroleum Hydrocarbons in Soil at Federal Contaminated Sites. Federal Contaminated Sites Action Plan.
Virginia Department of Environmental Quality (VDEQ). (2023).
Petroleum hydrocarbon trench vapour model relevant to worker exposure assessment.

Additional reference material may be identified through the EOI and subsequent technical clarification process.

Respondents are encouraged to identify other peer-reviewed studies, jurisdictional approaches, datasets or technical information that could contribute to the work.

8. Guiding Principles

The following principles are expected to guide development of the future research program:

Build on Existing Science
Research should begin with a clear understanding of previous work and avoid unnecessary duplication.

Address Material Evidence Gaps
New primary research should be undertaken where meaningful uncertainty remains and where additional evidence has the potential to improve the framework.

Remain Outcome-Neutral
The research should not begin from the assumption that management limits must increase, decrease or be eliminated.

Use Representative Conditions
Laboratory, modelling and field research should reflect realistic petroleum mixtures, environmental conditions and foreseeable activities wherever practical.

Consider the Framework Holistically
Individual research areas should be evaluated in the context of the overall management-limit framework.

Prioritize Practical Value
Research should be designed with consideration for how results could ultimately be interpreted and applied in contaminated-site assessment and management.

Maintain Scientific Defensibility
Methods, assumptions, datasets and conclusions should be transparent, reproducible and supported by appropriate scientific evidence.

Encourage Collaboration
Multidisciplinary teams and partnerships between consulting organizations, academic researchers, laboratories and other specialists are encouraged where they strengthen the proposed approach.

9. Who Should Respond

PTAC welcomes EOIs from:

- environmental consulting firms;
- research institutions;
- universities;
- laboratories;
- engineering and scientific organizations;
- specialized technical firms; and
- multidisciplinary partnerships or consortia.

Organizations do not need to possess expertise in every research theme to respond.
Respondents may identify specific themes for which they have particular expertise and may identify potential collaborators or complementary expertise required to address other components.

10. Desired Qualifications and Capabilities

Depending on the research themes ultimately advanced, relevant expertise may include:

- petroleum hydrocarbon chemistry;
- contaminated-site assessment and remediation;
- environmental risk assessment;
- petroleum hydrocarbon fate and transport;
- soil science;
- hydrogeology;
- NAPL/LNAPL assessment;
- vapour transport and modelling;
- occupational exposure assessment;
- fire and explosion science;
- laboratory flammability testing;
- polymer/material science;
- biodegradation and bioremediation;
- environmental toxicology;
- BTEX and PAH chemistry;
- vegetation and root-zone science;
- field study design;
- environmental modelling;
- statistical analysis;
- development or evaluation of environmental guidelines; and
- experience translating scientific research into practical guidance.

Experience working with Alberta petroleum hydrocarbon guidance and upstream oil and gas contaminated sites will be considered an asset.

11. Expression of Interest Requirements

At this stage, PTAC is seeking a **concise response** rather than a detailed technical proposal.
Respondents should provide an EOI of no more than **5 pages**, excluding brief team biographies or project examples, addressing the following:

Organization and Contact Information

- Organization name;
- Primary contact;
- Email and telephone number;
- Partner organizations, if applicable.

Relevant Experience

Provide a concise description of experience relevant to petroleum hydrocarbon management limits and the research themes identified in this EOI.
Respondents may identify up to **five relevant projects or research initiatives**.

Proposed Expertise

Identify:

- anticipated technical lead(s);
- relevant areas of expertise;
- potential project partners or collaborators; and
- specialized laboratory, field, modelling or analytical capabilities available to the team.

Formal commitments from all potential partners are not required at the EOI stage.

Areas of Interest

Identify the research themes for which the respondent is interested in potentially submitting a future proposal.
Respondents may express interest in:

- an individual research theme;
- multiple research themes; or
- an integrated program addressing several themes.

Preliminary Technical Perspective

Without developing a full methodology, respondents are invited to briefly identify:

- the research gaps they consider most important;
- areas where existing information may already be sufficient;
- research they believe would provide the greatest value;
- significant technical dependencies or sequencing considerations;
- innovative approaches that the committee should consider; and
- additional reference material or existing datasets that could inform the work.

Intent to Participate
Confirm whether the respondent intends to participate in the subsequent technical clarification session and consider submitting a proposal in response to the future RFP.

12. Review of Expressions of Interest

PTAC and the RRRC will review responses to identify organizations with relevant capabilities and a genuine interest in participating in the subsequent competitive procurement process.
Considerations may include:

- demonstrated relevant experience;
- strength and relevance of technical expertise;
- understanding of the research opportunity;
- multidisciplinary capability;
- experience with comparable research;
- access to appropriate laboratory, modelling or field capabilities;
- quality of preliminary technical observations; and
- ability to contribute to the future research program.

PTAC reserves the right to limit participation in the subsequent technical clarification session.
Submission of an EOI does not guarantee invitation to the clarification session, receipt of a future RFP, shortlisting or contract award.

13. Technical Clarification Session

Following review of the EOIs, PTAC anticipates inviting qualified prospective proponents to participate in a **Technical Clarification Session**. The session is intended specifically for organizations that are genuinely interested in participating in the subsequent RFP process. It is **not intended as a general public workshop or information session**.

The objectives will be to:

- provide additional context regarding the management-limit framework;
- explain how the individual management-limit considerations interact;
- review the research gaps and potential areas of investigation;
- discuss the existing knowledge base;
- clarify the committee's objectives;
- answer questions from prospective proponents; and
- ensure prospective proponents begin the formal RFP process with a consistent understanding of the research opportunity.

PTAC may limit the number of representatives from each organization to support a focused and productive discussion. All participants will receive access to the same core information.
Following the session, PTAC and the RRRC will refine the scope and requirements of the formal RFP.

14. Preliminary Schedule

Activity	Target Timing
EOI issued	October 5, 2026
Deadline for EOI responses	October 23, 2026, 5PM MT
Technical Clarification Session	Week of November 2, 2026
Formal RFP issued	End of November 2026
RFP evaluation / shortlisted presentations	January-March 2027
Project award and contracting	March 2027

Dates are preliminary and may be adjusted by PTAC.

15. Budget

PTAC is **not requesting cost information at the EOI stage**.
The available project funding or funding range may be communicated as part of the formal RFP once the scope of work has been refined. Information received through the EOI process may be used to help inform project structure, sequencing and allocation of available research funding.

16. Communications and Procurement Integrity

To maintain a fair, consistent and transparent process, **all communications regarding this EOI and the anticipated RFP must be directed through PTAC**.

Prospective respondents should not contact individual RRRC members or participating organizations seeking additional information regarding the opportunity.
Questions should be submitted to:
Petroleum Technology Alliance Canada
Email: INFO@PTAC.org

Where a question or response is considered relevant to multiple prospective proponents, PTAC may distribute the information to all participants to ensure consistent access to information.

17. Submission Instructions

EOIs should be submitted electronically no later than:
5:00 PM Mountain Time on October 23, 2026
to:
INFO@PTAC.org
Subject line:
26-RRRC-EOI-02 [Name of Proponent Organization]

Respondents will receive confirmation of receipt.

18. Important Notice

This EOI is intended to support research planning and the development of a future competitive procurement process. It is not a Request for Proposals, tender, offer or commitment to enter into a contract.

PTAC is under no obligation to:

- proceed with the anticipated research;
- issue a subsequent RFP;
- invite any respondent to participate in the next stage;
- adopt any recommendation provided through an EOI;
- select any respondent for future work; or
- reimburse any costs associated with preparing or submitting an EOI or participating in the clarification process.

PTAC may modify the research scope, procurement approach, schedule or process based on information received through this EOI and subsequent committee deliberations.