

2023-2024 ANNUAL REPORT

BRINGING TOGETHER TECHNOLOGY, PEOPLE & IDEAS



PTAC



Alberta Upstream Petroleum
Research Fund

03 About AUPRF

04 Innovation As Investment

06 Environmental Research Projects

09 Project Profiles

09 Air

10 Ecological

11 Remediation Reclamation

12 Water

13 Well Closure

14 Technical Steering Committees

19 Financial Reporting

About Us

The Alberta Upstream Petroleum Research Fund (AUPRF) finances environmental research aimed at tackling significant challenges in air quality, ecosystems, land reclamation, water resources, and the closure of wells associated with conventional oil and natural gas operations. The AUPRF program is entirely funded on a voluntary basis by Alberta's oil and natural gas operators, while Petroleum Technology Alliance Canada (PTAC) serves as an impartial third-party administrator. Under the AUPRF program, industry collaborates with policymakers and regulators to identify and prioritize research requirements. The program is supported by the Canadian Association of Petroleum Producers (CAPP) and the Explorers and Producers Association of Canada (EPAC).

Projects under AUPRF must be relevant to operators in Alberta, however, the projects could be applicable to other jurisdictions and do not necessarily have to be conducted in Alberta.

This annual report to AUPRF funders is an addendum and expansion on PTAC's own annual report to stakeholders, which can be found on our website.

Vision

- Enhance environmental outcomes.
- Achieve cost-effective compliance with environmental regulations.
- Facilitate the development of informed environmental policies and regulations.
- Attain gains in business process efficiency.
- Accelerate the development and implementation of new technologies.

Purpose

AUPRF provides support for applied research that undergoes peer review, contributing to the expansion of knowledge, informed decision-making, and the resolution of high-priority issues affecting the industry's environmental footprint. The research projects within AUPRF are conducted by consultants, university researchers, operators and government scientists. The comprehensive and unbiased reports resulting from this research highlight areas for improvement and offer practical and cost-effective solutions.

Value to Industry

Over 15 years, AUPRF has invested more than \$36 million in industry funds, supporting over 500 environmental clean technology research projects worth more than \$190 million, resulting in over \$125 million in annual operating savings for oil and gas companies and contributing to the smart regulation of the sector.



INNOVATION AS INVESTMENT

Reducing environmental impacts in all phases of oil and gas production and improving business processes to find efficiencies are key focus areas for the conventional oil and natural gas sector. Knowing where our collective concerns are focused, the Alberta Upstream Petroleum Research Fund (AUPRF) is helping to meet some of these forward-looking challenges.

Our work in developing technology solutions to reduce environmental impacts is an investment in innovation. Like any other strategic investment, it needs to be weighed against operational considerations and the need to keep a reasonable return on those investments.

Any strategic investment must make informed projections about the future and base the investment on the challenges companies face in the present. In the case of the AUPRF program, these challenges mostly centre on meeting the regulatory requirements placed on producers across the conventional petroleum sector across the country. The AUPRF Oversight Committee, on whose behalf I am writing this message, represents industry, government, and regulatory authorities in a unique long-term collaboration.

Most of our work is funding research to meet future regulatory requirements which will be an obligation on the part of companies. Those future conditions need to be assessed now and funds made available to fill the knowledge gaps that industry/government/regulatory experts see emerging.

Our work covers the elements of air, land, and water; before, during, and after production.

Before production, we need to characterize the environment at and near our sites. The “Environmental DNA” project AUPRF is funding helps the sector to find better ways to locate and study species at risk, such as the Canadian Toad. Finding those elusive creatures can be difficult, and testing pond water samples to see if their DNA is in the water is a novel approach. This work is an example of sector-wide collaboration as it builds on a project partially sponsored by the Canadian Oil Sands Innovation Alliance (COSIA), which is now part of Pathways Alliance.

During production, fugitive emissions are a challenge. One AUPRF study that is nearing completion focuses on the assessment of methane released from stationary engines or methane slips. This project aims to help operators manage their engine fleets and reduce emissions. It will also inform government and regulators as they develop regulations, providing insight into what is feasible with current equipment and available technologies.

After production, operators work towards site closure. The AUPRF program has several remediation-focused projects underway that identify risk-based endpoints for hydrocarbon,



salinity, and metal impacts; this work aims to minimize time, cost, and environmental disturbance during remediation activities. We are also investigating the use of remote sensing technology to increase safety and efficiency in conducting environmental assessments for reclamation.

So, with all this work we are doing to invest over \$3 million in industry contributions annually over the last several years, plus funding from governments, plus the in-kind support from many producers and governments, we continue to ask ourselves, what are we missing?

INNOVATION AS INVESTMENT

The participation rate for the AUPRF program over the years has hovered around 60% to 65% from producers, and over 400 companies large and small.

Recall this message is about Innovation as Investment. This year, we are going to focus on increasing participation in the AUPRF program and improving engagement in the sector.

Over the years, the AUPRF program has supported the development of 89 technologies, which have directly contributed to operational cost savings of over \$125 million per year. The program has also contributed to methane emissions reductions in AB, BC, and SK, where governments have indicated the provinces have met their reduction targets years ahead of their deadlines.

We are justly proud of the history of achievement of the AUPRF program, and its sustaining collaboration between the industry, government, and regulators. We are also proud of the collegial spirit of our five technical committees and our oversight committee.

These productive working relationships further the development of effective and reasonably priced solutions for the sector.

Join us.



Scott Volk P.Eng, M.Sc.

*Director of Emissions & Innovation, Tourmaline Oil Corp
Chair - AUPRF Oversight Committee*

AUPRF OVERSIGHT COMMITTEE (AOC) (As of June 30, 2024)

Scott Volk (Chair)

Director of Emissions & Innovation
Tourmaline Oil Corp

James Agate (Vice Chair)

Manager - Corporate Liability
Canadian Natural Resources Limited

Alexandra Robertson*

Principal Engineer
Alberta Energy Regulator

Jason Brunet*

Director - Technical Science & External Innovation
Alberta Energy Regulator

Kellen Foreman

Director - Regulatory and Government Relations
Ovintiv

Mike Fulsom

Director - Provincial Operations
The Explorers and Producers Association of Canada

Scott Milligan*

Executive Director - Provincial Programs & Operations
Alberta Environment and Protected Areas

Sharla Howard

Senior Manager, Water Resources
Cenovus Energy

Susan McGillivray*

Manager - Reclamation, Remediation and Pesticides
Alberta Environment and Protected Areas

Tara Payment

Director - Alberta
Canadian Association of Petroleum Producers

*Non-Voting Members**

ENVIRONMENTAL RESEARCH PROJECTS

(As of March 31, 2024)

2023–2024 Projects Launched

AIR

- Pathways to Mitigating Methane Emissions from Inactive Oil and Gas Wells
- The Oxiperator for Methane Slip from Lean-Burn Gas Engines and Much More
- Verified Methane Reductions: Leveraging Measurement-Based Methane Inventories to Quantify Reductions Trends and Prove Methane Intensities
- Unlit Flares: Aerial Quantification of a non-Inventoried Emission Source in Western Canada
- Temporal variability in methane and air pollutant emissions from abandoned, inactive, and suspended oil and gas wells

ECOLOGICAL

- Novel molecular test to detect Canadian toad environmental DNA
- The effects of oil and gas development on the occupancy, reproduction status, and reproductive rates of prey species within caribou ranges
- Enhancing auto-recognition technologies and data management practices within the open environmental sensor platform, WildTrax
- Using Various Forms of Remote Sensing to Improve our Ability to Manage Risk of Incidental Take for Pileated Woodpeckers

REMEDIATION RECLAMATION

- The Alberta Background Soil Quality System Phase 3
- Evaluating Technology-based Assessments for Use in Reclamation Certification of Anthropogenic Footprints
- Conventional vs. Passive Management of Noxious Weeds for Final Reclamation of Industrial Sites in the Boreal Forest: A Risk Management-Based Approach
- Background Soil and Water Geodatabase for Southern Saskatchewan
- Re-Evaluation of F2 and F3 Petroleum Hydrocarbon Management Limits
- Regulatory Approval of Risk Assessment Tools
- Process Guide for Approaching Salt Contamination
- Evaluation of Soil Chloride Delineation Requirements

WATER

- Identifying Barriers to Water Recycling in Alberta Hydraulic Fracturing
- Alberta Water Tool – Open Access and Enhancements

WELL CLOSURE

- Understanding and Mitigating Leakage Pathways in Oil and Gas Well Cements
- Material Testing of Cement Alternative Products for Well Remediation & Closure (Phase 1, three additional materials)
- Testing Three Alternate Products for Sealing Impaired Wellbore Cement (Phase 2)
- Comparing Gas invasion into Oilwell Cement Slurry Versus Five Other Wellbore Sealing Products
- Longevity Testing of 5 Alternative Materials for Wellbore Remediation & Closure"
- Evaluation of Cements to Replace Class G Portland Cement
- Minimum Acceptable Emissions and Closure Guidelines for Leaking Abandoned Wells
- Towards Net-Zero Emissions: Mechanics, Processes and Materials to Support Risk-Based Well Decommissioning
- Controlled Methane Injection Pilot Demonstration of a Biocover Concept for Mitigating Leaking Oil and Gas Wells

ENVIRONMENTAL RESEARCH PROJECTS

(As of March 31, 2024)

2023–2024 Ongoing Projects

AIR

- NSERC FlareNet Strategic Research Network
- State of Science on Emission Rate Thresholds for Upstream Petroleum Industry Leaks Corresponding to a Range of ppm Concentration Thresholds
- Quantification of Methane Emission in Stationary Engine Exhaust and Best Management Practices for Mitigation

ECOLOGICAL

- EcoSeis Phase 2
- Using Various Forms of Remote Sensing to Improve our Ability to Manage Risk of Incidental Take for Pileated Woodpeckers

REMEDIATION RECLAMATION

- Finalization of Research and Preliminary Selenium Soil Quality Guideline Derivation
- Remote Sensing Tool
- Using Various Forms of Remote Sensing to Improve our Ability to Manage Risk of Incidental Take for Pileated Woodpeckers
- Expanded Correlations Between Hydrometer Data, Sieve Data, and Saturation Percentage Data
- Subsoil Salinity Tool Version 3.0 Technical Manual
- Evaluation of Reclamation Practices on Peatland Wellsites Stage 3, Phase 4B – Research Program
- Agronomic Receptors – Phase 3
- GRF Grassland Reclamation Forum Recovery Strategy Updates
- Development of a Chloride Water Quality Guideline Based on Hardness and Consideration for Cation Toxicity
- Soil and Groundwater Guideline Calculator

WELL CLOSURE

- Multi-Year Compositional, Isotopic and Microbial Investigation of Methane Migration Issues to Develop “Best-Practices” for Industry
- Investigate the potential for surface casing vent flow/groundwater migration issues
- Testing Alternate Products in Place of Cement for Well Decommissioning and Remediation
- Gas Migration Measurements for Inventory Accuracy and Well Abandonment
- Controlled Methane Injection Pilot Demonstration of a Biocover Concept for Mitigating Leaking Oil and Gas Wells

ENVIRONMENTAL RESEARCH PROJECTS

(As of March 31, 2024)

2023–2024 Completed Projects

AIR

- Methods for Estimating Emissions from Tanks
- NOx Abatement Technology & Exhaust Testing Showdown
- Evaluation of Current & Emerging Emission Quantification Tools: Arolytics
- Evaluation of Surface Casing Vent Flows at Inactive Wells: Database Analysis and Field Measurements in Alberta
- Systematic Third-Party Validation of Environmental and Economic Performance of Methane Reduction Technologies

REMEDIATION RECLAMATION

- Development of a Chloride Water Quality Guideline Based on Hardness and Consideration for Cation Toxicity
- Plant Uptake of Petroleum Hydrocarbons and Salt (NaCl) and Derivation of Soil-to-Plant Uptake Factors
- Evaluation of Reclamation Practices on Forested Upland and Peatland Well Sites
- Agronomic Receptor Evaluation for Direct Soil Contact
- Low Probability Receptor Demonstration Project
- Re-Evaluation of F2 and F3 Petroleum Hydrocarbon Management Limits
- Regulatory Approval of Risk Assessment Tools
- Soil and Groundwater Guideline Calculator
- Background Metals and Salinity Database and Analysis Tool
- Standardizing Risk Assessment Approaches Based on Residual Mass vs. Numerical Endpoints

WATER

- Alberta Water Tool – Open Access and Enhancements

WELL CLOSURE

- Development or Adaptation of an Existing Sensor Technology to Monitor Leaks in Temporary Surface Pipelines



Quantification of Methane Emission in Stationary Engine Exhaust and Best Management Practices for Mitigation

Frank Zahner, Accurata Inc

A methane slip field test program was undertaken that consists of field exhaust samples taken from 100 engines and 116 tests. The objective was to gather as-found methane slip field test measurements. The engine samples contain the most common four cycle, natural gas fired engines in Alberta's natural gas production industry. An additional sixteen Caterpillar G3600 series engine MSAPR tests from one producer provided additional test data from one operator and one engine type. The influence of certain variables on methane slip is presented and discussed.

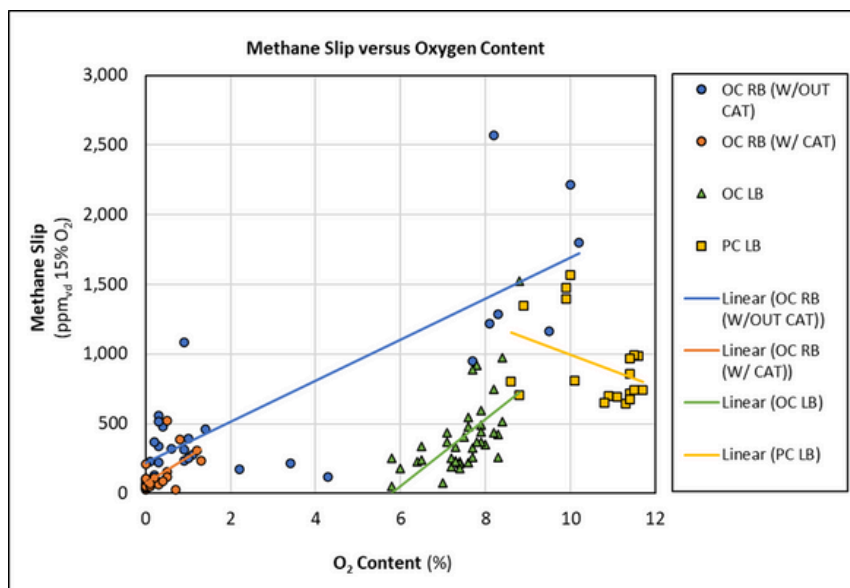
Four different engine combustion styles show characteristics that are mutually exclusive. The four combustion styles are rich burn without catalyst, rich burn with catalyst, open chamber lean burn and pre-chamber lean burn. Graphs of the data reveal possible correlation and identify relationships between the operating variables and methane slip. It was determined that open chamber rich burn engines with catalysts (OC RB w/cat) produce the least volume of methane slip. Open chamber lean burn (OC LB) and prechamber lean burn (PC LB) engines produced higher methane slip volume, respectively. Open chamber rich burn engines without a catalyst (OC RB W/OUT cat) produced about the same volume of methane slip as an open chamber lean burn engine without prechambers. The oxygen content in the air-fuel mixture is higher for lean burn engines and the following graph shows how methane slip varies with oxygen content.

The report includes a discussion of selected literature that we determined was most relevant. The report also discloses theory of engine combustion and discloses the cause of methane slip in the exhaust. The contribution of engine manufacturers' technology to the combustion characteristics is presented.

The following operating aspects reduce methane slip emissions.

- More adaptive control systems,
- higher exhaust temperature,
- higher fuel lower heating value (LHV),
- engine tuning as specified by the operating condition,
- lower excess oxygen (O₂%) for combustion,
- add ingestive crankcase evacuation systems, and
- newer engine model age.

The study identifies areas for additional study.



ECOLOGICAL

Novel molecular test to detect Canadian toad environmental DNA **Danielle Bourque & Stephen Symes, SLR Consulting (Canada) Ltd.**

Unexpected discoveries of the elusive Canadian toad can introduce costly delays to ongoing projects. To address this, SLR Ecologists, funded by PTAC's Alberta Upstream Petroleum Research Fund (AUPRF), have partnered with the University of Guelph to develop a novel molecular test to detect genetic traces of Canadian toads from the environment.

In Alberta, Canadian toads are classified as 'May Be At Risk,' which means their breeding ponds receive year-round protection. Wildlife sweeps required immediately before development can throw a significant wrench into construction plans leading to delays, costly translocations, or other mitigations. Early detection of this species is key to minimizing schedule interruptions.

These walnut- to baseball-sized toads don't make it easy, however. The traditional way of finding Canadian toads is through auditory surveys to listen for their unique breeding calls. Yet the calling period is restricted to a narrow one-month window in the spring, and auditory surveys are conducted at night, creating safety issues for personnel. Automated Recording Units (ARUs) are also used to record calling toads, but they require significant data processing and have limited spatial range.

That's where environmental DNA (eDNA), the unique genetic traces shed by all living things, comes in as an alternative approach to detection. Scientists can design molecular tests to detect these eDNA traces from non-invasive environmental samples, and SLR's Ecologists are currently developing such a test for the Canadian toad. By sampling eDNA from potential breeding ponds, we can infer the presence or absence of these toads without hearing or seeing them. This early-warning approach to Canadian toad detection will provide flexible survey scheduling, opportunities for mitigation, and ultimately reduce regulatory risk.



*SLR Ecologists sampling a wetland for Canadian toad environmental DNA (eDNA)
Credit - Megan Olson*



*Ecologists swabbing an egg mass to gather genetic samples for Canadian toad molecular test development
Credit - Megan Olson*

REMEDIATION RECLAMATION

Conventional vs. passive management of noxious weeds for final reclamation of industrial sites in the Boreal:

A risk management-based approach

Amanda Schoonmaker, NAIT &

Dean MacKenzie Vertex Resource Group Ltd.

Under the current weed management regime, sites may remain uncertified for years as attempts are made to control noxious weeds. Weed management thus often requires repeated entries and control efforts that set back desirable species, further increasing reclamation costs and prolonging time to certification (i.e., liability cost). Where efforts are focused on noxious weed species that are transitory and unlikely to persist over time or are known to drop out once a forest canopy or sustainable native plant community is established, the cost, time and continued impact on the site are difficult to justify. A weed management regime that is grounded in achieving forest as an end land use can reduce costs and negative environmental impacts while providing a quicker pathway to certification and liability closure.

This project is divided into two phases over six years. Phase 1 (Years 1-3) will involve a retrospective investigation using observational data. Phase 2 (Years 4-6) will include an experimental study comparing herbicide-based management with forest successional-based management. These two phases are designed to generate complementary evidence that supports alternative risk-management strategies for noxious weeds.

While changes to the regulatory framework may not be necessary, the findings could inform policy and practice, potentially leading to the development of a decision support tool that aligns with existing legislation. This approach offers a practical pathway to achieving desired outcomes in noxious weed management on reclaimed industrial sites in the Boreal region.



Birch yr 2



Birch yr 4



GR and Thistle



Thistle

Identifying Barriers to Water Recycling in Alberta Hydraulic Fracturing Steven Herman, WaterSMART Solutions Ltd.

The project was executed to identify barriers that limit rates of produced and flowback water recycling in Alberta's hydraulic fracturing industry and compare these barriers to British Columbia, where recycling rates are higher. The project was also intended to provide recommendations to address these barriers and better align with the Government of Alberta's Water Conservation Policy for Upstream Oil and Gas Operations, as it articulates a preference for alternatives to high-quality non-saline (HQNS) water. The project involved 20 interviews with hydraulic fracturing operators located within the Western Canada Sedimentary Basin, exploring the themes of alternative water sourcing, use, and recycling. Operators identified barriers, including technical and logistical challenges for the reuse of produced and flowback water (e.g., water chemistry compatibility), concerns about broader environmental and health risks, and regulatory implications related to water storage, transportation, and disposal.

Despite the barriers identified, operators expressed interest in increasing produced and flowback water recycling rates in Alberta. The interviewees also provided specific recommendations to address the barriers, such as economic incentives to facilitate necessary capital expenses, increased regulatory collaboration between industry and policymakers, and engagement with technology providers to accelerate the development of water recycling solutions. These recommendations are consistent with the goals of industry organizations (e.g., CAPP and PTAC) and the Government of Alberta to reduce HQNS water use by increasing recycling rates, benefiting both the industry and the environment.



WELL CLOSURE

Testing Alternate Products in Place of Cement for Well Decommissioning and Remediation

Jonathan Heseltine, InnoTech Alberta

Leakage from wellbores is a worldwide issue affecting all types and ages of oil & gas wells. Historically, Portland cement has been sealing annular spaces, well remediation, and permanent plugging of wells at the end of their lifespans. Evidence suggests that Alternative Barrier Materials (ABM) and new placement technologies offer advantages for some applications. A Joint-Industry-Project “Testing Alternate Products in Place of Cement for Well Decommissioning and Remediation” aims to evaluate several of these materials in the lab and field to demonstrate their capabilities and determine suitable applications and operational practices. Examples of these materials include resins and other polymers, chemical and biomineralized precipitates, and metal alloys which are.

Research and development efforts to ensure and improve wellbore integrity have demonstrated strong collaboration between stakeholder groups as the benefits apply to operators, landowners, and all Albertans. This project has received financial support from AUPRF, the Clean Resource Innovation Network (CRIN), the Net Zero Technology Centre (NZTC), and Alberta Innovates. InnoTech Alberta has developed a multi-component lab testing protocol to evaluate placement, sealability, environmental durability, toxicity, and mechanical properties. Upon successful lab evaluation, Frontier Project Solutions is coordinating field trials with engineering support and wellbores provided by six major operating companies. The technical work focuses on improving practical outcomes during well remediation and ensuring that wells are permanently plugged. The resulting impacts include reduced greenhouse gas emissions from leaking wells, accelerated land reclamation, protection of groundwater, and reduced costs. Additional work is already underway for future phases, to include lab testing of additional materials and further field trials. Well remediation and closure is a global challenge, since hydrocarbon producing wells have been drilled throughout the world. With such practical well integrity projects, Alberta becomes one of the world’s leaders in safely and responsibly producing oil and gas.



TECHNICAL STEERING COMMITTEES

(As of March 31, 2024)

AIR RESEARCH PLANNING COMMITTEE (ARPC)

The ARPC is a technical committee that supports the AUPRF Program. The goal of ARPC is to help the industry expand its credible and relevant information to address knowledge gaps on high-priority methane and other emissions. They aim to initiate dependable research projects, both fundamental and applied, on existing and emerging environmental issues to support the development of new technologies and industry best practices. By doing so, ARPC supports the industry's desire for shared research development and provides an opportunity to understand and manage these matters in a safe and effective manner.

Andrea Zabloski
Andrew Cattran
Carolyn Ussher
Don McCrimmon
Filiz Onder
Gerald Palanca
Graham Noble
Jacob Bayda
Koray Onder
Marie Johnson
Peter Kos
Randy Dobko
Sean Hiebert
Sean Smith
Yaomin Jin

Canadian Natural Resources Limited
NuVista Energy Ltd.
Alberta Energy Regulator
Canadian Association of Petroleum Producers
Pembina Pipeline Corporation
Alberta Energy Regulator
Government of Saskatchewan
Government of Saskatchewan
TC Energy
Environment and Climate Change Canada
BC Ministry of Environment and Climate Change Strategy
Alberta Environment and Protected Areas
Cenovus Energy
Environment and Climate Change Canada
BC Ministry of Energy, Mines and Low Carbon Innovation



TECHNICAL STEERING COMMITTEES

(As of March 31, 2024)

ECOLOGICAL RESEARCH PLANNING COMMITTEE (ERPC)

As we continue to explore solutions for resource access issues, the ERPC is dedicated to supporting the AUPRF Program. ERPC is committed to developing credible and relevant information to address knowledge gaps related to high-priority environmental challenges, such as woodland caribou, habitat relationship for listed species, and the health and size of species at risk. By supporting the industry's desire for shared research development, ERPC is supporting the effectiveness of managing these matters.

Agnes Wajda-Plytta
Ben Hale
Carol Engstrom
Devon Versnick-Brown
Jeremy Reid
Krista Phillips
Lindsay Clothier
Mark Boulton
Shane Patterson
Sherry Becker
Tara Bernat

Alberta Energy Regulator
Cenovus Energy
Independent
Canadian Natural Resources Limited
Canadian Natural Resources Limited
Canadian Association of Petroleum Producers
Canada's Oil Sands Innovation Alliance
Suncor Energy
Alberta Environment and Protected Areas
Imperial Oil
Ovintiv



TECHNICAL STEERING COMMITTEES

(As of March 31, 2024)

REMEDIATION RECLAMATION RESEARCH COMMITTEE (RRRC)

The RRRC is a crucial technical committee that supports the AUPRF Program. They work towards the development of credible and relevant information that addresses knowledge gaps related to soil contaminants and vegetation. Specifically, they focus on assessing and managing exploration and production sites as related to geo-environmental protection, soil and groundwater remediation and reclamation. Their work is essential for ensuring that these high-priority issues are managed in a cost-effective manner.

*Brett Reynolds
Deanna Cottrell
Devin Scheck
Jason Desilets
Jeff Mills
Jonas Fenn
Lance Miller
Lisa Warren
Lori Neufeld
Nadia Cruickshank
Paul Hartzheim
Rick Rohl
Sara Blacklaws
Shawn Glessing
Sheldon Exner
Sonia Glubish
Steve Kullman
Tyrel Hemsley*

*Shell Canada
Shell Canada
BC Energy Regulator
Cenovus Energy
Orphan Well Association
Whitecap Resources
Canadian Association of Petroleum Producers
Cenovus Energy
Imperial Oil
Alberta Energy Regulator
Canadian Association of Petroleum Producers
ARC Resources
Alberta Energy Regulator
Cenovus Energy
Veren
Canadian Natural Resources Limited
Canadian Natural Resources Limited
Alberta Environment and Protected Areas*



TECHNICAL STEERING COMMITTEES

(As of March 31, 2024)

WATER INNOVATION PLANNING COMMITTEE (WIPC)

WIPC is an important AUPRF technical committee. Their work is dedicated to providing credible and relevant information that addresses knowledge gaps related to water issues in upstream oil and natural gas development. They focus on identifying key challenges for the energy sector in managing water across the spectrum, including sourcing, storage, transport, treatment, recycling/reuse, and disposal. By working towards the development of shared research, WIPC supports work to help manage high-priority environmental matters related to water.

Anil Gupta
Deanna Cottrell
Geoff Webb
Guillaume Lafond
Jarred Anstett
Julia Fletcher
Matt Mclean
Michael Bevan
Natasha Rowden
Paul Martin
Rodney Guest
Sarah Belak
Scott Hillier
Susan Satterthwaite
Tara Payment

Alberta Environment and Protected Areas
Shell Canada
Canadian Natural Resources Limited
Ovintiv
Murphy Oil Corp.
Shell Canada
Cenovus Energy
Alberta Energy Regulator
MEG Energy
ConocoPhillips
Suncor Energy
Tourmaline Oil
Cenovus Energy
Alberta Environment and Protected Areas
Canadian Association of Petroleum Producers



TECHNICAL STEERING COMMITTEES

(As of March 31, 2024)

WELL CLOSURE RESEARCH COMMITTEE (WCRC)

WCRC focuses on helping to deliver on reducing methane emissions from operations and closed wells. The challenge of emissions migration through the well infrastructure is of concern to many Oil and Gas producing jurisdictions. This committee works diligently to find new cost effective mitigation technology solutions.

*Andrew Robinson
Ben Fraser
Charity Callahan
Claudette Panei
Dave Samuelson
Deanna Côté
Leah Davies
Mitch Kosior
Rajan Varughese
Richard Wong
Ryan McDowell
Shanna Nolan
Shawn Forster
Wade Hartzell*

*Alberta Energy Regulator
Imperial Oil
Rev Energy
Canadian Association of Petroleum Producers
Cenovus Energy
Shell Canada
Imperial Oil
Crescent Point Energy
Alberta Energy Regulator
Cenovus Energy
Crescent Point Energy
Shell Canada
Cenovus Energy
Canadian Natural Resources Limited*



FINANCIAL REPORTING

(As of March 31, 2024)

This financial report shows the revenues and expenses since the 2019/2020 fiscal year. Expenses in a given year do not equal revenues due to the timing of multi-year projects and some leveraged funding being managed directly by Petroleum Technology Alliance Canada (PTAC).

| | | 2023/2024 | | 2022/2023 | | 2021/2022** | | 2020/2021 | | 2019/2020 | |
|----------------------|------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-------------|---------------------|----------------------|---------------------|---------------------|
| | | AUPRF | Leveraged* | AUPRF | Leveraged* | AUPRF | Leveraged | AUPRF | Leveraged* | AUPRF | Leveraged* |
| Air Emissions | ARPC | \$ 974,514 | \$ 5,031,840 | \$ 1,297,892 | \$ 870,000 | \$ 758,652 | \$ - | \$ 562,781 | \$ 8,389,021 | \$ 1,914,307 | \$ 1,400,000 |
| Ecological | ERPC | \$ 336,039 | \$ 287,746 | \$ 760,833 | \$ 3,386,854 | \$ 60,692 | \$ - | \$ 45,022 | \$ 207,500 | \$ 249,692 | \$ 875,800 |
| Reclamation | RRRC | \$ 571,267 | \$ 983,500 | \$ 1,342,647 | \$ 66,500 | \$ 333,807 | \$ - | \$ 247,624 | \$ 927,300 | \$ 1,040,384 | \$ 393,025 |
| Water | WIPC | \$ 168,020 | \$ - | \$ 223,775 | \$ - | \$ 30,346 | \$ - | \$ 22,511 | \$ - | \$ 499,384 | \$ - |
| Wells | WCRC | \$ 2,228,451 | \$ 1,417,000 | \$ 850,343 | \$ 2,100,000 | \$ 333,807 | \$ - | \$ 247,624 | \$ 1,199,000 | \$ 457,769 | \$ 157,000 |
| | | \$ 4,278,290 | \$ 7,720,086 | \$ 4,475,490 | \$ 6,423,354 | \$ 1,517,303 | \$ - | \$ 1,125,562 | \$ 10,722,821 | \$ 4,161,536 | \$ 2,825,825 |
| | % of Well Levy Contributions | 60% | | 60% | | 0% | | 59% | | 65% | |
| | Revenue | \$ 4,278,290 | | \$ 4,475,490 | | \$ 1,517,303 | | \$ 1,125,562 | | \$ 4,161,536 | |
| | Expense | \$ 4,351,971 | | \$ 4,452,786 | | \$ 1,536,514 | | \$ 1,158,600 | | \$ 4,210,845 | |

* Includes funds PTAC leveraged from TIER, CanERIC, SK MER, CRIN, NZTC, and other.

** No well levy collection.



THANK YOU

PTAC



Alberta Upstream Petroleum
Research Fund

CONTACT US

PTAC
Suite 400, Chevron Plaza
500 - 5 Avenue SW
Calgary, Alberta T2P 3L5

Phone: 403.218.7700
Email: info@ptac.org