



114 Members

PTAC Member Organizations
As of March 9, 1999

Producers

Alberta Energy Company Ltd.
Amoco Canada Petroleum Co. Ltd.
Anderson Exploration Ltd.
Barrington Petroleum Ltd.
Chevron Canada Resources
Crestar Energy Inc.
Gascan Resources Ltd.
Gulf Canada Resources Ltd.
Husky Oil Operations Ltd.
Imperial Oil Resources Ltd.
Maxx Petroleum Ltd.
Mobil Oil Canada Ltd.
Murphy Oil Company Ltd.
Northstar Energy Corporation
Numac Energy Inc.
Ocelot Energy Inc.
PanCanadian Petroleum Ltd.
Petro-Canada Resources
Poco Petroleum Ltd.
PrimeWest Energy Inc.
Ranger Oil Limited
Renaissance Energy Ltd.
Rigel Oil & Gas Ltd.
Suncor Energy Inc.
Talisman Energy Inc.
Union Pacific Resources Inc.
Wascana Energy Inc.

Service and Supply

Adams Pearson Associates Inc.
Advanced Geotechnology Inc.
Air Liquide Canada Inc.
Alpine Environmental Solutions Inc.
Baker Hughes - Centrifuge
Benhope Energy Inc.
Brine-Add Fluids Ltd.
Business Development Bank of Canada
Concrete Environmental Solutions Inc.
Canwell Enviro-Industries Ltd.
Ceramic Protection Corporation
Chriscor Production Enhancement Tech.
Computalog Ltd.
Computer Modelling Group Ltd.
D.E. Towson & Associates Inc.
Diversity Corporation
EBA Engineering Consultants Ltd.
Environet Laboratories
Epic Consulting Services Ltd.
ESG International
Foothills Diamond Coring Ltd.
Fraumaster Limited
Gris Gun Manufacturing Inc.
HSP Canada
Hycal Energy Research Laboratories Ltd.
Hycal Environmental Sciences Ltd.
Insight Information
IPSCO Inc.
KBL Land Use Consulting Ltd.
KPMG High Technology Practice Group
Lloyd Energy Inc.
M.J. Blair Corporation
MACTRONIC Ltd.
Malibu Engineering Ltd.
Matrix Solutions Inc.
Max-Contacts
Maxxim Analytics Inc.
McNally Land Services Ltd.
Membrane Technology and Research
Mercury Electric Corporation
New Paradigm Engineering Ltd.
NEWALTA Corporation
Noetic Engineering Inc.
NOWSCO Well Service Ltd.
Ogilvie & Company Ltd.
Oil Technology (Overseas) Inc.
Omnicon Consultants Inc.
Opsco '92
Petro Studies Consultants Inc.
Petrozyme Technologies Inc.
ProAlta Machine & Manufacturing Ltd.
Promore Engineering Inc.
Prudential Steel Ltd.
Radarscan Inc.
REDA Services (Div. of Camco)
Ryan Energy Technologies Inc.
Schlumberger of Canada
Sidekick Tools Inc.
Terra Nova Industries
Travis Chemicals (Stanchem Inc.)
United Oil & Gas Consulting Ltd.
Variperm Canada Ltd.
Vik International Inc.

Research Providers

Alberta Sulphur Research Ltd.
Centre For Engineering Technologies Inc.
Natural Resources Canada (CANMET)
Petroleum Recovery Institute
Saskatchewan Research Council
TIPM Laboratory

Learning Institutions

University of Alberta
University of Calgary

Government

Alberta Department of Energy

Individuals

George Bier
Richard Bolt
Wayne Burnside
Roland duBerger
Bob Lockert
Al Logan
Richard Luhnig
Roy Mathew
Tom McCann
Bob Parlicous
Ken Puit
Duncan Robertson
Murray Todd
Ken Wilson

Founding Supporter:

Canadian Business Networks Coalition (CBNC)

PTAC

PETROLEUM TECHNOLOGY ALLIANCE CANADA

**An Association that Facilitates
Collaborative Research and
Technology Development in the
Conventional Oil and Gas Industry**

R&D



PTAC

1998 Key Accomplishments

- Record Number of R&D Projects Launched
- Increased Membership
- Conducted Successful Workshops and Technology Information Sessions
- Improved Cooperation with Members and other Organizations
- Recognized as a Central Focus for R&D Initiatives

R&D Projects Launched

PTAC facilitated the launch of 21 projects during 1998 worth \$4.3 million. Further information on these projects can be obtained by reading our 1998 newsletters, which are available from PTAC or can be found on our website (www.ptac.org). 15 additional projects arising from our 1998 and early 1999 Workshops are expected to launch in 1999, including:

Environmental

- Fugitive Emissions
- Hydrophobic Soils
- Native Plant Development
- Evaluation of Past Revegetation Mitigation Efforts
- Monitoring and Detection Limits of Odour Causing Compounds

Conventional Heavy Oil

- Field Test of Rodless Drive Systems for Progressive Cavity Pumps
- Alternative Artificial Lift Systems for Heavy Oil Applications
- Low Fuel Pressure Heating Systems for Field Tanks
- Heavy Oil Annular Gas Compression Systems
- Understanding and Managing Sand Production
- PCP Run Life Improvement

Inactive Well

Management/Abandonment

- Low Rate Cement Pumping Unit
- Cement Selection for Squeeze Applications
- Logging Tool Specific to Gas Detection
- Gas Source Identification Process

1998

Achievements

PTAC experienced steady growth in 1998.

Message from the Board of Directors

PTAC continued to grow and expand services in 1998. We added 32 new members, hosted 16 Technology Information Sessions, sponsored 8 workshops, issued 21 Requests for Proposals (RFPs), and facilitated the launch of a record 21 R&D projects valued at \$4.3 million.

The Environmental and Conventional Heavy Oil Technical Subcommittees were the most active groups. Through a variety of workshops they initiated 9 and 5 projects respectively. PTAC successfully collaborated with the Canadian Association of Petroleum Producers (CAPP) on environmental R&D for the first time in 1998.

PTAC's reputation as a matchmaker for oil and gas industry research and technology development grew significantly during 1998. New R&D initiatives are now referred to PTAC on a regular basis for consideration by industry at our Technology Information Sessions and workshops.

In December 1998 we moved to a new and expanded office location at PanCanadian Petroleum Ltd. As a result, we have access to a greater selection of in-house meeting venues, which has improved our services to members and the industry.

Outlook for 1999

PTAC will continue to provide a structure that brings stakeholders together to identify industry problems and define research projects to deal with them.

The current environment of low product prices is placing significant pressure on cash flow within the oil and gas industry. Continued improvements will be required to manage costs, increase production efficiencies and comply with growing regulatory requirements. In short, the conventional oil and gas industry will be challenged to do more with less. Innovation, collaboration and effective R&D will be keys to success. Where appropriate, PTAC will assist in identifying R&D work that can be performed internally by project participants.

Environment, Heavy Oil, Well Completions and Reservoir Recovery R&D have been identified as priorities and will be the focus of several workshops in 1999. We will continue to work towards the launch of 5 Environmental, 6 Heavy Oil and 4 Inactive Well/Abandonment projects that were initiated in 1998. We have set a goal of launching at least 15 projects with a combined value of \$3.0 million in 1999, while maintaining our budget at 1998 levels.

On behalf of the Board, we would like to thank PTAC staff and all volunteers on committees, workshops and projects for their dedication and efforts. Our vision of applying leading-edge technology developed through collaboration is becoming a reality.

Eric Lloyd
Eric Lloyd, President of PTAC

Larry Bell
Larry Bell, Chairman of PTAC

Technical Subcommittees

PTAC now has 10 Technical Subcommittees (TS) and over 1700 contacts in the following areas:

Natural Gas Production, Processing and Transportation

Drilling

Oil Production and Transportation

Well Completion, Stimulation and Workover

Reservoir Recovery/Geoscience

Conventional Heavy Oil

Environmental

Inactive Well Management/Abandonment

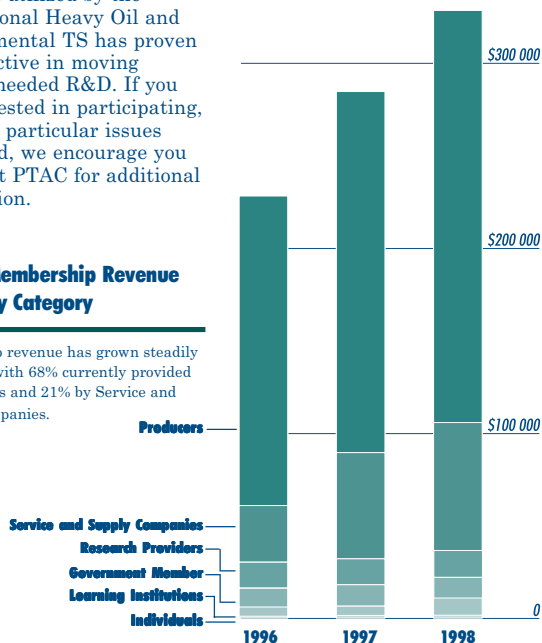
Telecommunications and Data Management

Basic Research

We need interested senior technical people to assist in identifying important issues that require R&D. The approach utilized by the Conventional Heavy Oil and Environmental TS has proven very effective in moving forward needed R&D. If you are interested in participating, or seeing particular issues addressed, we encourage you to contact PTAC for additional information.

Annual Membership Revenue Growth by Category

Membership revenue has grown steadily since 1996 with 68% currently provided by Producers and 21% by Service and Supply Companies.



PTAC Speaks out on Government R&D Policy, Incentives and Funding

During 1998, PTAC provided feedback to government on several important issues including:

- Panel on Energy Research and Development (PERD) federal R&D funding priorities for the oil and gas industry
- Alberta Science and Research Authority (ASRA) R&D incentive proposals
- Alberta funding for high priority Environmental R&D projects for the oil and gas industry
- ADOE model study for funding energy related R&D
- CO₂ Enhanced Oil Recovery (EOR)
- Coordination of University Research for Synergy and Effectiveness (COURSE)

PTAC will continue to provide input to government on matters that are related to oil and gas R&D, in cooperation with members and associations.

Technology Information Sessions

PTAC hosted 16 sessions attended by a total of over 300 participants in 1998. These sessions provide our members with the opportunity to obtain funding and technical input for proposed R&D; learn about new R&D initiatives and emerging technology; and, transfer and market new technology in the conventional oil and gas industry.

Problem and Opportunity Definition Workshops

PTAC sponsors workshops to provide an opportunity for people to clearly define R&D issues and identify the direction that is believed will yield possible solutions. Potential suppliers of R&D have the opportunity to hear first hand about such issues and to contribute their expertise and ideas for solutions. PTAC funds the workshops, ensures the necessary facilitation is provided and provides the necessary administrative support and coordination to launch projects. We widely distribute Request for Proposals (RFPs) with Expressions of Interest for each priority issue from workshops. Once we have identified those who will consider supporting the R&D, proposals are then solicited from potential suppliers. PTAC brings together the interested organizations in a structured way that leads to new R&D, while protecting proprietary interests.

PTAC sponsored workshops in Environmental, Conventional Heavy Oil, Completions and Workovers and Inactive Well Management/Abandonment in 1998. As a result, 21 RFPs were formally issued in 1998 and 7 more followed in early 1999.

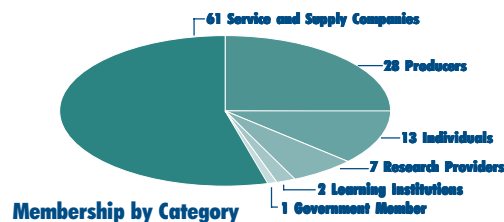
PTAC needs the involvement of industry personnel in 1999 to plan workshops in areas such as Environmental, Reservoir, Completion, Stimulation and Workovers, and in other technical subcommittee areas. Mini workshops that focus on one particular issue are an effective way to initiate collaborative R&D projects. We encourage you to contact PTAC if you have ideas for such workshops.

Association and Regulator Working Relationships

PTAC believes that working with industry associations and regulators to jointly sponsor events and distribute information is an important component of the overall approach to collaborative R&D.

The successful launch of the 1998 Environmental R&D projects resulted from the cooperation and support of the Canadian Association of Petroleum Producers (CAPP), Environment Canada, Alberta Energy and Utilities Board (AEUB), Alberta Environmental Protection (AEP), Alberta Department of Energy (ADOE) and Petroleum Services Association of Canada (PSAC).

PTAC wishes to build new relationships where there is mutual interest and continue to strengthen existing relationships wherever possible.



Membership by Category

The number of PTAC members increased to 112 by year end 1998.

Our current members produce approximately 60% of Canadian Conventional Oil and Gas. PTAC signed up our 114th member in March 1999, continuing our pattern of steady membership growth.

PTAC Board Members

As of December 31, 1998

Larry Bell, Chairman, PTAC,
Crestar Energy Inc.

Eric Lloyd, President, PTAC,
Petroleum Technology Alliance
Canada

Alan Archibald,
Chairman Elect of PTAC,
Anderson Exploration Ltd.

JoAnne Butler,
Amoco Canada Petroleum Ltd.

Neil McCrank,
Alberta Energy and
Utilities Board

Roger Bailey,
Alberta Department of Energy

Denis Gaudet,
Fracmaster Ltd.

Bob Hill,
Canadian Energy Pipeline
Association (CEPA)

Patrick Jamieson,
C-FER Technologies Inc.

Rich Kerr,
Wascana Energy Inc.

Pat McLellan,
Advanced Geotechnology Inc.

Frank McIntyre,
Husky Oil Operations Ltd.

Bruce Peachey,
New Paradigm Engineering Ltd.

Ken Putt,
K.W. Putt Consulting Services

Bruce Stewart,
Natural Resources Canada
(CANMET)

Bill Svrcek,
University of Calgary

Murray Todd,
Todd Resources

Auditor's Report to the Directors

We have audited the financial statements of PTAC Petroleum Technology Alliance Canada for the year ended December 31, 1998 and have reported thereon without reservation under date of February 26, 1999. The accompanying summarized balance sheet and summarized statements of revenues, expenses and surplus have been prepared from the audited financial statements.

In our opinion, the accompanying summarized balance sheet and statements of revenues, expenses and surplus fairly summarize the information as to the financial position of PTAC Petroleum Technology Alliance Canada and the results of its operations contained in the audited financial statements.

KPMG, Chartered Accountants
Calgary, Canada,
February 26, 1999

Summarized Balance Sheet

As at December 31, 1998, with comparative figures for 1997

Assets	1998	1997
Cash	\$ 29,938	\$ 53,114
Marketable securities	62,237	53,488
Accounts receivable	75,040	47,963
	167,215	154,565
Capital assets	27,147	31,372
	\$194,362	\$185,937
Liabilities and Surplus		
Accounts payable, accrued liabilities	\$ 6,240	\$ 9,167
Deferred revenue	168,692	157,175
	174,932	166,342
Surplus	19,430	19,595
	\$194,362	\$185,937

Summarized Statements of Revenues

Expenses and Surplus for the year ended December 31, 1998,
with comparative figures for 1997.

Revenues	1998	1997
Membership	\$297,088	\$227,616
Other	38,238	35,576
	\$335,326	\$263,192
Expenses		
Operating	\$335,491	\$266,567
Excess (short) of revenues over expenses	(165)	(3,375)
Surplus, beginning of period	19,595	22,970
Surplus, end of period	\$ 19,430	\$ 19,595

The complete audited financial statements of PTAC for the year ended December 31, 1998 are available from PTAC offices upon request.

PTAC

AN ASSOCIATION THAT FACILITATES
COLLABORATIVE RESEARCH AND
TECHNOLOGY DEVELOPMENT IN THE
CONVENTIONAL OIL AND GAS INDUSTRY

For further information please contact:

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PTAC

MAIL POSTE

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