



ACPA NEWS

The Newsletter of the Association of the Chemical Profession of Alberta

VOLUME 3 NUMBER 1

From the Editors

It was the intention of all involved to ensure that this Newsletter was published before Christmas however, since Kay Simpson is no longer in Canada the task has fallen on rather green people (Robert Swingle and Trevor Satchwill) and has taken longer than anticipated to get it out.

This issue contains the minutes of the last general meeting, our POARA application, and a guest article from Lorne Goodwin regarding the proposed replacement for Freon for the Oil and Grease analysis.

All contributions from members to the newsletter will be welcome in the future. Please sent them to Robert Swingle at Chemex Labs 2021 - 41 Avenue N.E. Calgary, Alberta T2E 6P2 or fax them to 403-2919468. If you prefer electronic mail, please address them to the internet at chemex@internode.net. It would be nice if you could send any lengthy material on disk in PC format using either Word Perfect or Microsoft Word.

From the President Arthur Bolo-Kamara

Since the last newsletter, the ACPA has changed and significant progress has occurred in some areas. The Board was not completely replaced, but there

were some new faces (see the AGM minutes). Two prominent founding members of the association are no longer with the organization. Dr. Terry Fields moved to Ontario and Dr. Kay Simpson moved to Australia. Kay and Terry were very involved in the activities of the association and I personally miss their constant consultation and input to every aspect of the activities of the Association. The Board and members of the Association wish Kay and Terry the best in all their endeavors. As you might recall, Kay was the founder and Editor of the ACPA newsletter and her departure created an almost panic situation. Finding a professional chemist with newspaper skills was not easy. However, Dr. Bob Swingle and Trevor Satchwill willing accepted the positions of Editors. Please support the new editors by proving letters, articles and commentaries in time for publication.

Our application to POARA (Professions and Occupational Associations Registration Act) was submitted September 9, 1994. An acknowledgment and receipt was received on December 2, 1994. The next step is to send a copy of our application to stakeholders for review and comment by numerous organizations followed by additional public comment through newspaper advertisements. A draft stakeholder letter has been reviewed by the Board and a final draft was sent to POARA for approval. To speed the processing of our application, the

newspaper advertisements will be placed at the same time the letters are sent. This will ensure all comments are received within the three months response period.

I would like to encourage you to attend the next AGM, scheduled for June 10, 1995 in Red Deer. There are important issues on our profession and other related matters to be discussed. All Board positions are open for nomination, and elections will be held at this meeting. Special committee positions are also available.

I look forward to seeing you at the AGM, June 10, 1995 in Red Deer, Alberta.

Please do not hesitate to contact me or any Board member, if you have questions, issues or comments.

REGISTRAR'S REPORT

Laurier Schramm

As of February, 1995 we have received 141 applications to join the association. The society has accepted 128 members and rejected two application. There is still a fairly even distribution of members from northern and southern Alberta. There remain a lot more chemists out there. Please encourage your colleague chemists to join ACPA!

We have already begun to lose track of the addresses for some of our members and applicants.

Please remember to advise us when your address changes. If you know the whereabouts of any of the following colleagues please let me know.

Earl D. Helwig
John H. Machin
Dr. Shradha Singh
Ross P. Thurston

MISCELLANEOUS ITEMS

Call for Nominations

There are ten positions on the Board of the Directors of the ACPA. All come up for election each year. A nominating committee is to be struck some time ahead of the AGM to solicit nominations for the various positions. The elections themselves are by mail ballot. The nominating committee this year is Frank Bachelor and Murray Fetzko. They are asking for nominations of members in good standing for the following positions:

President
Vice-President
Secretary
Treasurer
6 Directors-at-Large

To nominate someone, all you have to do is to secure the person's agreement to serve and forward his or her name to one of the members of the nominating committee. Their phone numbers are listed in the Officers and Directors section of the newsletter. If you would like to be nominated, please contact the committee directly. Ballots will be mailed out and the election results announced at the AGM.

The deadline for nominations is the end of April.

Annual General Meeting

The 1995 AGM must be held before the end of June 1995. As before, the meeting will be held in Red Deer and is scheduled for Saturday, June 10. It will consist of the business meeting, a guest speaker, cocktails and dinner.

Agenda for 1995 ACPA Annual General Meeting

Red Deer College
Margaret Parsons Theater
June 10, 1995
Business Meeting: 2:15 pm
Talk: 3:15 pm
Cocktails: 4:30 pm
Dinner: 5:00 pm

Dinner cost this year will \$16.50.
Please pre-pay for the meal and RSVP by May 31 to:

ACPA Treasurer
Box 22320 Banker's Hall
Calgary, Alberta
T2P 4J1

A map to Red Deer College and the location of the meeting room is enclosed.

Important Dates

- Deadline for nominations April 30
- AGM June 10, 2:15 pm in Red Deer

Membership Fees

Please, don't forget to pay your membership fee! The 1995 membership cards will go out with this issue of the ACPA NEWS to paid up members. Thereafter the cards will be sent out with the receipt.

New Members

Please photocopy the application form on the back of the newsletter and give to anyone interested in joining the ACPA.

Addresses

We have looked at the mailing list and note that some addresses are incorrect. Please send all address changes to our post box so we can keep in contact with you.

The address of the ACPA is:

ACPA
Box 22320 Banker's Hall
Calgary, Alberta
T2P 4J1

Thanks to CIC

The ACPA would like to thank the Calgary section of the CIC for donating \$750 to cover POARA registration fee. The support of the CIC in furthering both the ACPA and the chemical profession in Alberta has been and continues to be invaluable.

Science Fairs

The ACPA will be sponsoring awards at the Calgary Youth Science Fair and the Edmonton Regional Science Fair. The intent is to encourage interest in chemistry and to raise public awareness of both the ACPA and the chemical profession in general. The winners will be published in the next issue of the ACPA NEWS.

The Plan

As a passing thought for all you Government and Industry managers in the midst of planning for your new year here is an old one regarding Plans in general (author unknown.)

In the beginning was

The Plan

*And then came the **Assumptions***

*And the **Assumptions** were without form.*

*And **The Plan** was completely without **Substance***

And the darkness was on the face of the workers

And they spoke to their supervisor, saying:

“It’s a crock of shit and it stinks”

And the supervisor went to their section managers and said:

“It is a pail of dung and none may abide the odor thereof”

And the section managers went to their managers and said to them:

“It is a container of excrement and it is very strong such that none here may abide by it.”

And the managers went to their general managers and said to them:

“It contains that, which aids plan growth, and it is very strong.”

And the general manager went to the vice president and said to him:

“it promotes growth and it is very powerful.”

And the vice president went to the president and said to him:

*“This powerful new **Plan** will actively promote the growth and efficiency of the department and this area in particular.”*

*And the president looked upon **The Plan** and saw that it was good.*

*And **The Plan** became **Policy**.*

ACPA Officers and Directors

NAME	POSITION	LOCATION
Arthur Bollo-Kamara	President	Edmonton
Dieb Birkholz	Vice-President	Edmonton
Murray Fetzko	Secretary	Edmonton
Jennie Wolter	Treasurer	Calgary
Laurier Schramm	Registrar	Calgary
Trevor Satchwill	Dir-at-large	Calgary
Kay Simpson	Dir-at-large	Edmonton
Andy Schmidt	Dir-at-large	Red Deer
Paul Fee	Dir-at-large	Calgary
Frank Bachelor	Past President	Calgary

OIL & GREASE ANALYSIS FREON REPLACEMENT

Lorne Goodwin
Research Scientist
Alberta Environmental Centre
January 6 1995

Since the signing of the Montreal Protocol, fluorochlorocarbons (Freons) are slowly being phased out in efforts to eliminate their effect as stratospheric Ozone Depleting Substances (ODS). This activity is being monitored closely by chemists in Alberta (and elsewhere) because of the many uses these compounds have as refrigerants, chemical solvents, propellants and many other applications. One specific use for CFC-113 (1,1,2-trichloro-1,2,2-trifluoroethane) has been as the solvent of choice for liquid/liquid extraction of environmental water samples to characterize what is fondly referred to by many (mostly engineers) as oil and grease (O&G). As is common knowledge to most, the quantitation of data from this routine regulatory screening test is very solvent dependent. The selection of a replacement for CFC-113 currently used in the Standard Methodology has many potential implications for regulators, industries, municipal wastewater plants, environmental laboratories, and instrument manufacturers.

North American Standard Methods have been developed by such organizations as the AWWA (American Waterworks Association), WPCF (Water Pollution Control Federation), APHA (American Public Health Association), ASTM (American Society of Testing Materials), and the US-EPA (Environmental Protection Agency). Currently, a study is being carried out by Environment Canada and their status was reported at the Oil & Grease Analysis Workshop, September 20-21, 1994 at the Canada Centre for Inland Waters, in Burlington, Ontario.

Many solvents have been used in the past such as petroleum ether, hexane, dichloromethane, and Freon (CFC-113) with either partition gravimetry and/or IR determination. An excellent review of the historical perspective of O&G Standard Methods was presented at the Burlington Workshop by Dr. Om. P. Bhargava of Omtex Inc. It is not my intention in this summary to cover in great depth the scientific issues covered at this workshop, but to briefly touch on the choices now available and sensitize readers to the most probable methods currently being shortlisted for Freon replacement for O&G analysis.

Several larger environmental laboratories have reported over 20 test id's for characterization of oils, greases, and hydrocarbons in general (including total petroleum hydrocarbons (TPH)) and the analytical methodology is quite diverse. Any new method will hopefully allow continued consistency with the existing databases for monitoring and regulatory purposes, allow for the same or better sensitivity (detection limits) and permit an economic procedure that will not obsolete existing instrumentation currently in use in environmental laboratories. As well, newer techniques such as solid phase extraction (SPE) are available from commercial sources and new solvents have been developed. Since Freon has become very expensive and in short supply, many laboratories are taking the "green" approach and voluntarily phasing out their Freon use. Hexane has been used for gravimetric procedures, but this solvent cannot be used with IR determination without evaporation and reconstitution in a solvent containing no C-H bonds. Much effort is being made to provide perchloroethylene containing different stabilizers that would allow this solvent to be safely employed with the IR detection method. In general, the IR methods give better detection limits than the gravimetric methods. As well, the Freon-gravimetric procedure gives different values for similar standards when compared with the Freon-IR method currently in place.

A summary of recently published O&G methods is as follows: (taken from Bhargava 1994)

AWWA 12TH EDN.	1965	GRAV	HEXANE OR ETHER
ASTM D 1178-60	1967	GRAV	CHLOROFORM
AWWA 13TH EDN.	1971	GRAV	FREON, HEXANE, OR ETHER
EPA 413.2	1974	IR	CFC-113
AWWA 14TH EDN.	1975	GRAV/IR	CFC-113
EPA 00556	1976	GRAV	CFC-113
EPA 413.2/418.1	1978	IR/Si Gel	CFC-113
ASTM D-4281	1983	GRAV	CFC-113
AWWA 16TH EDN.	1985-89	GRAV/IR/Si Gel	CFC-113
ASTM D-3921	1985-90	IR/Si Gel	CFC-113
ASTM D-4281	1989-92	GRAV/Si Gel	CFC 113
ASTM D-3328	1990	GC:FID/FPD	DIRECT INJECTION
EPA 413.3	1991	GRAV	HEXANE/MTBE (80:20)
AWWA 18TH EDN	1992	GRAV/IR/Si Gel	CFC-113 or HEX:MTBE
EPA 1664	1994	GRAV	HEXANE

An analysis summary was carried out at the Alberta Environmental Centre to summarize the options presently available requiring investigation.

1. LIQUID/LIQUID EXTRACTION (LLE)

OIL & GREASE-LLE	- GRAVIMETRIC	- FREON	
			- HEXANE
			- HEXANE:MTBE (80:20)

