

2003-2004

ANNUAL REPORT



CAEAL

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President's Report

I am pleased to report that 2003 was a challenging but very productive year for the Board of CAEAL, and for me as President. I am very encouraged by our achievement of substantial progress with the active involvement of our Board and senior management team.



As the year began, our immediate challenge was the renewal of our partnership with the Standards Council of Canada (SCC). This was partly due to some new international requirements for accrediting bodies: the forthcoming replacement of the ISO/IEC Guide 58 with the ISO/IEC 17011 standard introduces new requirements that are at odds with our agreement with the SCC. Some uncertainties about the acceptability of the two organizations' roles were thereby raised, since it seemed

likely that the SCC would have to review all files before finalizing any accreditation decisions — rather than relying on CAEAL's recommendations. Among other changes, this was adding to the upward pressure on SCC's costs to our member laboratories, and the Board expressed CAEAL's concern to the SCC about the value of services provided.

Following some lively discussions about these issues during the 2003 AGM, CAEAL launched a dialogue with the SCC to explore adjusting our Partnership Agreement to more effectively address the various demands and challenges of our accreditation program. This ongoing dialogue brought in the other service delivery partners — the National Research Council of Canada (NRC) and the Bureau de Normalization du

“Over 2003-2004, we consolidated CAEAL's position as one of the world's largest accredited providers of Proficiency Testing for environmental laboratories.”

Québec (BNQ). A key focus was the cost to laboratories of becoming accredited under the SCC's Program for the Accreditation of Laboratories/Canada (PALCAN) partnership systems, in the context of a better understanding of the SCC financial situation. Another priority was to examine PALCAN's accreditation decision processes, and associated decision structures.

At the AGM in 2003, our members asked to be kept regularly informed. We have been doing this since, with

periodic President's messages and other means, including briefings for the Board of the Canadian Council of Independent Laboratories (CCIL).

As mentioned in my newsletters to the membership, the SCC became more open and transparent about its costs. While we all wish that these costs were lower, we were pleased to gain a clearer understanding of their structure and basic determinants. Their impact is a particular burden for smaller labs — some of which have asked for some relief. Unfortunately, there is no easy solution. It would not be appropriate for

smaller CAEAL member labs to be subsidized by larger organizations. This may be an area for advocacy by the private sector laboratory industry with the federal government.

As a direct result of these consultative processes, and with substantial involvement from the SCC's other delivery partners, the SCC issued a document proposing new accreditation approval processes and structures. This was the subject of deliberations by the CAEAL membership at the AGM on June 18, 2004, in Vancouver B.C.

During that meeting, a motion to renew the SCC/CAEAL partnership agreement was voted down: 67 percent of members voted against the motion, 31 percent voted in favour,

and 2 percent abstained. The decision was thereby made not to authorize the Board to negotiate a renewal of the SCC/CAEAL partnership agreement. Since the current partnership remains in place until January 1st, 2005, no changes will be experienced by members at least until that date.

CAEAL's own finances posed an additional challenge for fiscal year 2003-2004. At the AGM of May 2003, our members approved a budget that had forecast an operational deficit of \$76,000. Various circumstances made things get worse before they got better, however, especially during the first half of the year. An under-subscription to our training programs, unbudgeted expenses associated with adjusting to the implementation of Ontario's Safe Drinking Water Act (SDWA),

and the bankruptcy of one major member, all made for a punishing combination. With my full support, that of Louise Morin, and from all of our staff, the Board took some decisive action to address this financial adversity. It called for paring down our costs, implementing a surcharge on Ontario members, and making changes to our pre-payment/invoicing practices. It effectively led CAEAL to a modest bottom-line surplus at the end of the fiscal year — a remarkable accomplishment.

On the program delivery side, CAEAL experienced solid growth in 2003-2004. Our Proficiency Testing program continued to expand. The Environmental Health Services Water Laboratory of Yukon, in Whitehorse, became the 200th

laboratory in the SCC/CAEAL accreditation stream. We also had great success with site assessments: 50 new labs applied for assessments, making this our record year! Similarly, despite the summer hiccup, training programs continued to grow.

Over 2003-2004, we consolidated CAEAL's position as one of the world's largest accredited providers of Proficiency Testing for environmental laboratories. We also increased our accredited parameters by about one third (now approaching 200).

CAEAL has, over the years, used laboratory performance data to illustrate the value of accreditation and Proficiency Testing programs. Two published studies comparing

the performance of accredited and non-accredited laboratories had previously attested to such an advantage. This past year CAEAL again demonstrated, through two new studies, that continued participation in Proficiency Testing clearly leads to the continual improvement of quality in a laboratory's data.¹

It was also an important year in the evolution of our relationship with Ontario's Ministry of the Environment (MOE). As noted, our costs and workload rose considerably due to the new CAEAL/SCC/MOE agreement that resulted from Ontario's new Safe Drinking Water Act. By the end of the 2003 fiscal year, we

were well into the first year of its implementation, and everything appeared to be working fine.

The year 2003-2004 also increased to four the number of South American laboratories that are now part of the accreditation program offered jointly by the Pan American Health Organization (PAHO), SCC and CAEAL. Also at the international level, CAEAL continued as a stakeholder member of the International Laboratory Accreditation Cooperation (ILAC). This has involved taking a leadership role in discussions concerning ISO 9000. CAEAL staff also represented the SCC in the ISO discussions on changes to ISO/IEC 17025, and participated in international evaluations for both the Asia Pacific Laboratory Accreditation

Cooperation (APLAC) and the U.S. National Cooperation for Laboratory Accreditation (NACLA).

In sum, 2003-2004 turned out to be an eventful but successful year for CAEAL. This report highlights the progress we have made on a number of important fronts. I am proud of our accomplishments despite sometimes trying circumstances, and hope that we have paved the way for smoother sailing in the future.

[signature?]

Mr. Russ Calow
President

¹ See Section 6 of this report — Proficiency Testing Program

Board of Directors

President

Mr. Russ Calow
SGS Lakefield Research Ltd.,
Lakefield

Mr. Murray Hartwell
PSC Analytical Services Inc.,
Bedford

Vice-President

Dr. Chris Pharo
Environment Canada,
North Vancouver

Mr. James Doull
Environment Canada, Moncton

Dr. John Fenwick
Maxxam Analytics Inc., Lachine

Treasurer

Dr. John Lawrence
Environment Canada, Burlington

Ms. Jacinthe LeClerc
Environment Canada, Montreal

Executive Director and Secretary

Dr. Rick Wilson
CAEAL, Ottawa

Mr. Pat Paladino
Standards Council of Canada,
Ottawa

Mr. Erv Callin
Enviro-Test Laboratories,
Edmonton

Dr. Peter Toft
Pan American Health Organization,
Qualicum Beach

Mr. Steve Clarkson
Health Canada, Ottawa

Dr. Wo Yuen
Saskatchewan Research Council,
Saskatoon

Corporate Profile

The Canadian Association for Environmental Analytical Laboratories is a non-profit organization dedicated to improving the quality of environmental data. We provide member laboratories with accreditation assessment and re-assessment, as well as Proficiency Testing services, and the SCC provides accreditation. Our member laboratories' commitment to generating the highest quality of data is demonstrated by their voluntary participation in rigorous Proficiency Testing and accreditation programs. Our members also strive for scientific and management excellence by applying the principles of Competence, Consistency, Credibility and Communication.

CAEAL's Quality System is based on these three international standards:

- ISO/IEC Guide 58 — General Criteria for the Operation and Mutual Recognition of Laboratory Accreditation Systems,
- ISO/IEC Guide 43 — Proficiency Testing by Interlaboratory Comparison, and
- ILAC Guide 13 — Guidelines for the Requirements for the Competence of Providers of Proficiency Testing Schemes.

These standards contain all of the requirements necessary for CAEAL to be recognized as an agency that delivers competent laboratory assessments and Proficiency Testing services. We document all activities that may not conform to requirements, and take corrective action. In support of continuous improvement, CAEAL

CAEAL regards accreditation, Proficiency Testing and high quality information as vital to improving environmental quality and public health and safety.

has well-understood methods of determining opportunities for improvement and taking preventive action.

The system for receiving, tracking and responding to member requests and feedback is fully transparent at CAEAL, and our Quality System is also under constant scrutiny — as all good quality systems must be.

Our staff conducts an internal audit each year, after which the Board of Directors conducts a management review of the entire system. The SCC examines our Quality System every year for conformance to Guide 58, in support of external recognition, as well as every other year for conformance to ILAC Guide 13.

CAEAL regards accreditation, Proficiency Testing and high quality information as vital to improving environmental quality and public health and safety. Along with our technical and professional expertise for serving members and stakeholders, we believe in modelling the most rigorous standards of fair and ethical conduct. Through our world-class accreditation service, we also endeavour to provide leadership, advocating for improved public

health and safety while providing a significant global competitive advantage to our members.

We believe that CAEAL makes a unique contribution to solving international problems and challenges regarding public health and safety. We aspire to be the world's largest accredited provider of Proficiency Testing within 5 years, both in the array of fields tested and the number of parameters we offer, and a respected provider of accreditation services across Canada and internationally. We also look ahead in the coming years to presenting CAEAL to the world through a state-of-the-art and user-friendly website, while generating \$10m in revenue with a 10% return on investment, and a staff of 20.

Financial Report

CAEAL's funding derives from four main areas of activity:

- the Site Assessments program;
- the Proficiency Testing program;
- the Training program; and
- annual membership and administration dues.

Funding from the Site Assessments program is based mainly on the number of appendices that are assessed.² Funding from the Proficiency Testing program results from the sale of samples that are used by laboratories for testing.³

Financial Results for the Period
To reflect CAEAL's operations accurately, our operations statement presents expenses incurred accord-

ing to activity, rather than by the nature of those expenses. An operating expense summary with additional details on the nature of expenses incurred per activity has been provided in the notes to the financial statements found in this report (see Section 4).

Total operating revenues recognized for the year ending March 31, 2004, were \$2.9 million (2003: \$2.5 million). This includes Proficiency Testing contributions of \$1.7 million (2003: \$1.4 million); Site Assessments' contributions of \$0.856 million (2003: \$0.718 million); members'

² Every laboratory visit has added to its final report one appendix for each test method that CAEAL undertakes about that lab. As assessments turn on these test methods, the number of these appendices has come to be seen as a reliable indicator of CAEAL's scrutiny of a lab, and a gauge of the detail of our examination: the greater the number of appendices, the more thorough the examination conducted. (See also Section 5 below, on Participation in the SCC/CAEAL Accreditation Program, regarding the way labs within the accreditation stream vary in terms of these appendices.)

³ That is, this funding results from the sale of bottles of samples sold for testing purposes to our member laboratories.

There is a need to continue to be vigilant in our efforts to enhance efficiencies, reduce costs, and evolve the products and services that will continue to address our members' needs.

contributions; Training revenues; project revenues; and investment income.

CAEAL uses the deferral method of revenue recognition, which means that revenues are recognized in the same period in which the expense is incurred.

Our total expenditures were \$2.8 million (2003: \$2.5 million). The increase of \$0.3 million was in line with our operating goals and budget and is mainly related to the Proficiency Testing program direct costs and additional salaries associated with an increase in staff level.

Fiscal year 2004 was a successful one for CAEAL. Our budgeted deficit for the year was \$75,000 and we are pleased to report an excess of revenue over expenses of \$12,524 (2003: \$40,000 excess). This resulted primarily from improved communication between staff, the board of directors, and the membership, along with greater than anticipated growth especially in the Site Assessments program — with the unplanned addition of twelve Ontario Drinking Water laboratories. Our Proficiency Testing program also experienced bigger than anticipated growth, and careful expense-cutting by various departments contributed to our surplus. Our financial success came despite the multiple bankruptcy filings by member laboratories.

The trend in growth both for the Site Assessments program and the Proficiency Testing program continues at a steady pace. Our ability to manage the growth efficiently would not be possible without the contribution made by volunteers. Although CAEAL's audited financial statements do not recognize the economic value of services provided to CAEAL by volunteers, we would like to highlight the considerable value of these services. Based on assumptions made by management and the Board of Directors, we calculate the estimated value of volunteer activity as just over \$450,000 — the equivalent of 7.6 full-time, year-round positions. Volunteers have extended



Figure 1:
CAEAL Revenues by area of activity

- Site Assessments — \$856,593
- Training — \$106,797
- Projects — \$91,450
- Memberships — \$121,680
- Interest — \$4,358
- Proficiency Testing — \$1,703,054



Figure 2:
CAEAL Expenditures by area of activity

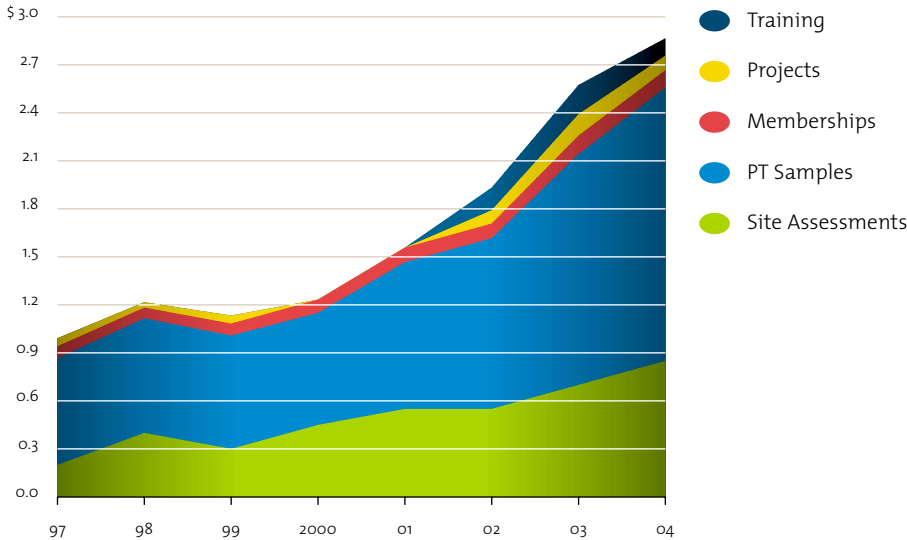
- Site Assessments — \$53,975
- Training — \$67,988
- Projects — \$78,805
- Salaries & Consulting — \$818,173
- Operating Expenses — \$373,583
- Proficiency Testing — \$938,884

the value of CAEAL personnel by 38% over the last year. In addition, as a result of their participation in voluntary activities, CAEAL volunteer assessors contributed just over \$41,000 in non-reimbursed expenses to the association.

Although some hard work has gone into maintaining the association’s fiscal health, this does not mean that we can rest on our laurels. There is a need to continue to be vigilant in our efforts to enhance

efficiencies, reduce costs, and evolve the products and services that will continue to address our members’ needs.

Figure 3: CAEAL 1997-2004 Revenue Growth (millions of dollars)



Auditors' Report

To the Members of
Canadian Association for Environmental Analytical Laboratories (Inc.)

We have audited the statement of financial position of the Canadian Association for Environmental Analytical Laboratories (Inc.) as at March 31, 2004 and the statements of operations, changes in net assets and cash flows for the year then ended. These financial statements are the responsibility of the Association's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the Association as at March 31, 2004 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles. As required by the Canada Corporations Act, we report that, in our opinion, these principles have been applied on a basis consistent with that of the preceding year.

Chartered Accountants

Ottawa, Canada
May 14, 2004

Operations

Year ended March 31, 2004

	2004	2003
	\$	\$
Revenue		
Evaluations	2,559,647	2,157,632
Interest income	4,357	4,274
Memberships	121,680	118,222
Projects	91,450	120,890
Training	106,797	160,458
	2,883,931	2,561,476
Expenses		
Advertising	38,260	32,051
Amortization of capital assets	17,558	16,299
Awards	608	2,461
Bad debts	26,975	14,148
Copying and printing	22,761	26,592
Evaluations	1,524,458	1,400,346
Insurance	23,748	17,031
Office and telecommunications	62,734	67,579
Postage and shipping	29,320	16,064
Professional fees	27,708	11,603
Projects	78,805	64,966
Rent and rentals	66,675	57,786
Salaries, benefits and consulting fees	818,172	663,783
Training	76,388	58,301
Travel and meetings	57,237	72,436
	2,871,407	2,521,446
Excess of revenue over expenses	12,524	40,030

The accompanying notes are an integral part of the financial statements.

These financial statements do not reflect the substantial value of services contributed by volunteers.

Changes in Net Assets

Year ended March 31, 2004

			2004	2003
	Invested in capital assets	Unrestricted	Total	Total
	\$	\$	\$	\$
Balance, beginning of year	54,070	559,314	613,384	573,354
Excess (deficiency) of revenue over expenses	(17,558)	30,082	12,524	40,030
Investment in capital assets	15,945	(15,945)		
Balance, end of year	52,457	573,451	625,908	613,384

The accompanying notes are an integral part of the financial statements.

These financial statements do not reflect the substantial value of services contributed by volunteers.

Cash Flows

Year ended March 31, 2004

	2004	2003
	\$	\$
OPERATING ACTIVITIES		
Excess of revenue over expenses	12,524	40,030
Non-cash items		
Amortization of capital assets	17,558	16,299
Changes in working capital items (Note 3)	20,083	20,735
Cash flows from operating activities	50,165	77,064
INVESTING ACTIVITIES		
Investments in mutual funds	(4,322)	(4,249)
Acquisition of capital assets	(15,945)	(30,745)
Cash flows used in investing activities	(20,267)	(34,994)
Net increase in cash	29,898	42,070
Cash, beginning of year	153,600	111,530
Cash, end of year	183,498	153,600

The accompanying notes are an integral part of the financial statements.

These financial statements do not reflect the substantial value of services contributed by volunteers.

Financial Position

March 31, 2004

	2004	2003
	\$	\$
ASSETS		
Current assets		
Cash	183,498	153,600
Investments (Note 4)	251,227	246,905
Accounts receivable	889,046	692,970
Prepaid expenses	45,685	28,774
	1,369,456	1,122,249
Capital assets (Note 5)	52,457	54,070
	1,421,913	1,176,319
LIABILITIES		
Current liabilities		
Accounts payable and accrued liabilities	529,710	366,635
Deferred revenue	266,295	196,300
	796,005	562,935
NET ASSETS		
Invested in capital assets	52,457	54,070
Unrestricted	573,451	559,314
	625,908	613,384
	1,421,913	1,176,319

The accompanying notes are an integral part of the financial statements.

These financial statements do not reflect the substantial value of services contributed by volunteers.

On behalf of the Board

Director

Director

Notes to Financial Statements

March 31, 2004

1 – GOVERNING STATUTES AND NATURE OF OPERATIONS

The Canadian Association for Environmental Analytical Laboratories (Inc.), is a non-profit organization, incorporated without share capital under the Canada Corporations Act, to raise the level of competency, consistency, capability and communication within environmental testing laboratories in Canada. Under the provisions of the Income Tax Act, it is exempt from income tax.

2 – ACCOUNTING POLICIES

Accounting estimates

The preparation of financial statements in accordance with Canadian generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts recorded in the financial statements and notes to financial statements. These estimates are based on management's best knowledge of current events and actions that the Association may undertake in the future. Actual results may differ from these estimates.

Amortization

Capital assets are recorded at cost and amortized over their estimated useful lives according to the following methods, annual rate and period:

	Methods	Rate and period
Office equipment and furniture	Diminishing balance	20%
Computer equipment	Straight-line	4 years

Revenue recognition

The Association follows the deferral method of accounting for contributions. Under this method, contributions restricted for future periods are deferred and are recognized as revenue in the year in which the related expenses are incurred. Unrestricted contributions are recognized as revenue when received if the amount to be received can be reasonably estimated and collection is reasonably assured.

Donated services

The work of the Association is assisted by the contribution of time and expenses by volunteers, the value of which is not recognized in these financial statements.

Investments

Mutual fund investments are recorded at cost plus reinvested revenue.

Notes to Financial Statements

March 31, 2004

3 – INFORMATION INCLUDED IN THE STATEMENT OF CASH FLOWS

The changes in working capital items are detailed as follows:

	2004	2003
	\$	\$
Accounts receivable	(196,076)	60,437
Prepaid expenses	(16,911)	(9,539)
Accounts payable and accrued liabilities	163,075	(1,004)
Deferred revenue	69,995	(29,159)
	20,083	20,735

4 – INVESTMENTS

	2004		
	Units	Cost	Market
		\$	\$
Talvest Money Market Fund	25,123	251,227	251,227

	2003		
	Units	Cost	Market
		\$	\$
Talvest Money Market Fund	24,690	246,905	246,905

5 – CAPITAL ASSETS

	2004		
	Cost	Accumulated amortization	Net
	\$	\$	\$
Office equipment and furniture	38,929	18,275	20,654
Computer equipment	125,309	93,506	31,803
	164,238	111,781	52,457

	2003		
	Cost	Accumulated amortization	Net
	\$	\$	\$
Office equipment and furniture	33,388	14,296	19,092
Computer equipment	114,905	79,927	34,978
	148,293	94,223	54,070

6 – FAIR VALUE OF FINANCIAL INSTRUMENTS

Short-term financial instruments – Given that they will mature shortly, the fair value of the short-term financial assets and liabilities approximates their carrying amounts.

7 – COMMITMENTS

The Association has entered into long-term lease agreements expiring on September 16, 2008 which require lease payments of \$61,929 for the rental of premises and office equipment. Minimum lease payments for the next four years are \$24,129 in 2005, \$12,600 in 2006, \$12,600 in 2007 and \$12,600 in 2008.

Supplementary Information

Year ended March 31, 2004

	2004		2003					
	Proficiency Testing	Site Assessments	Training	International Activities	Administration	Inter-Program Revenue Expenses	Total	Total
	\$	\$	\$	\$	\$	\$	\$	\$
Revenues								
Evaluations	1,644,309	848,292		67,046			2,559,647	2,157,632
Interest income					4,357		4,357	4,274
Memberships					121,680		121,680	118,222
Projects				91,450			91,450	120,890
Training			106,797				106,797	160,458
Administration and general allocation					384,551	(384,551)		
	1,644,309	848,292	106,797	158,496	510,588	(384,551)	2,883,931	2,561,476
Expenses								
Advertising					38,260		38,260	32,051
Amortization of capital assets					17,558		17,558	16,299
Awards					608		608	2,461
Bad debts					26,975		26,975	14,148
Copying and printing					22,761		22,761	26,592
Evaluations	911,400	580,963		32,095			1,524,458	1,400,346
Insurance					23,748		23,748	17,031
Office and telecommunications	6,034	22,916	4,651	4,243	24,890		62,734	67,579
Postage and shipping					29,320		29,320	16,064
Professional fees					27,708		27,708	11,603
Projects				78,805			78,805	64,966
Rent and rentals					66,675		66,675	57,786
Salaries, benefits and consulting fees	122,746	285,009	60,339	19,024	331,054		818,172	663,783
Training			76,388				76,388	58,301
Travel and meetings	8,263	4,055	178	4,328	40,413		57,237	72,436
Administration and general allocation	84,839	205,928	40,124	10,836	42,824	(384,551)		
	1,133,282	1,098,871	181,680	149,331	692,794	(384,551)	2,871,407	2,521,446
Excess (deficiency) of revenues over	511,027	(250,579)	(74,883)	9,165	(182,206)		12,524	40,030

SCC/CAEAL Accreditation Program

The SCC/CAEAL accreditation program for environmental laboratories is delivered in partnership with the SCC. The Accreditation Partnership Agreement determines that CAEAL both conducts site assessments and operates a supporting Proficiency Testing program. Accreditation is only granted by the SCC upon satisfactory participation in both the site assessment program and in Proficiency Testing where this last is offered as part of the accreditation. In cases where Proficiency Testing is not offered, accreditation may be recommended based strictly on a site visit.

CAEAL trains employees of member labs to act as volunteers (or ‘assessors’) for the association. They are a valuable resource for CAEAL, as

they conduct the laboratory assessments against criteria listed in CAN-P-4D (ISO/IEC 17025) – *General Requirements for the Competence of Testing and Calibration Laboratories* — culminating in a report of corrective actions that are required to gain conformance to the standard. Pending the satisfactory implementation such corrections, a recommendation is made to accredit or re-accredit a laboratory. Laboratories undergoing reassessments have three months to undertake these implementations, while new laboratories are given six months. A laboratory’s response to the corrections is then reviewed by CAEAL staff, the Lead Assessor, and Advisory Panel members. The Advisory Panel then recommends to the CAEAL Board of Directors whether to grant

or maintain a lab's accreditation. If the Board is satisfied that the appropriate corrections have been made, the recommendation to grant or maintain accreditation is forwarded to the SCC's Director of Conformity Assessment for accreditation.

Program Participation

The accreditation program had a total of 209 laboratories participating by March 31, 2004. This figure includes

labs in the stream of accreditation that remained unaccredited; that is, application to the program, undergoing corrective procedures, etc. While 158 of the total were already fully accredited, the 51 remaining labs were also at some point in the accreditation stream or process.

Here are some additional features of the 209-laboratory total:

- 63% are private sector companies (131 labs);

- 37% belong to the public sector (78 labs); and
- 24% (or 51) are licensed under Ontario's Safe Drinking Water Act.

Location of laboratories:

- 44% are in Ontario (91 labs);
- 38% are from western and northern Canada (79 labs);
- 15% are in provinces east of Ontario (32 labs); and
- 3% are in various international locations (7 labs).



Figure 4: Laboratories in the SCC/CAEAL accreditation stream

- Western & Northern Canada — 79 labs
- East of Ontario — 31 labs
- Various International Locations — 7 labs
- Ontario — 91 labs

The laboratories within the SCC/CAEAL accreditation stream vary according to appendices as follows:

- 30% of the total (62 labs) were designated by CAEAL as ‘small,’ since their assessments included fewer than six appendices;
- each lab has an average of 23 appendices, since a total of 4,700 appendices exist for the 209 participating laboratories;

- 72% of appendices are from the private sector labs; and
- 28% of appendices are from the public sector labs.

Applications for Accreditation

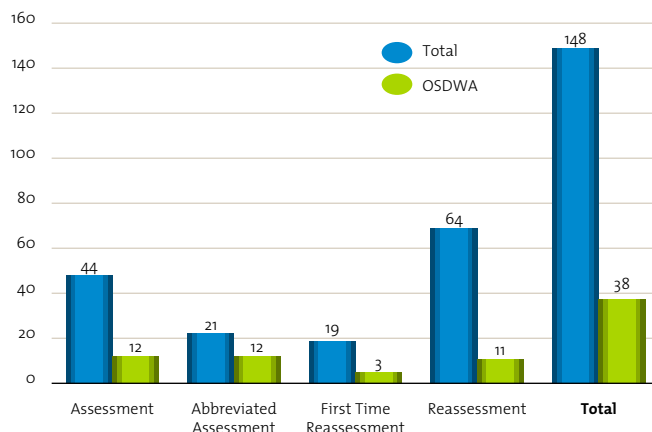
CAEAL responds to the applications we receive for site visits with several kinds of laboratory assessments. These are known by different names: *Assessment*: A site visit conducted on a laboratory applying for

accreditation for the first time.

Abbreviated Assessment: A site visit to assess new appendices between regularly scheduled reassessments. The quality management system is not assessed during these assessments — only the technical requirements of the new test methods.

First-Time Reassessment: Site visit carried out one year after an initial assessment.

Figure 5: Site Visit Applications (number of visits)



Verification visits are designed to confirm that laboratories have implemented required actions, or that any changes that have been undertaken do not impair or compromise a lab’s ability to render competent results.

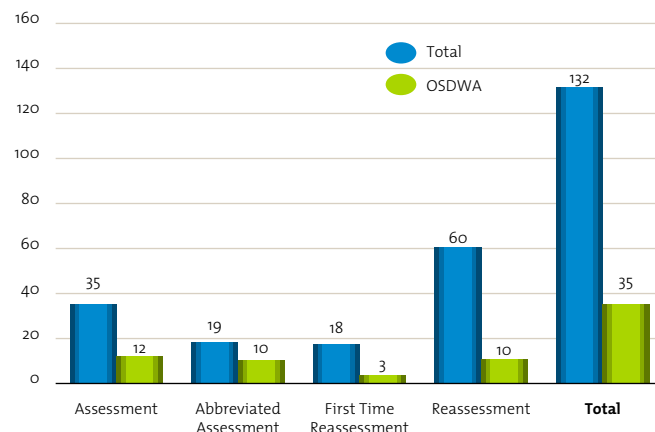
Reassessment: Site visits occurring once every two years after the first-time reassessment.

CAEAL received 148 applications in the 2003-04 fiscal year, including 38 (or 26%) from laboratories currently licensed under the OSDWA. There were 44 applications for first time assessments, including 12 from laboratories seeking recognition under the OSDWA.

Site Visits

Although 148 applications were received in the 2003-04 fiscal year, 10 of those site visits were actually conducted in the preceding fiscal year, and 6 others withdrew from the process. As a result, a total of 132 site visits were actually performed in 2003-04 — of which 35 (or 27%) were laboratories licensed under the OSDWA (see Figure 6, below).

Figure 6: 2003-2004 Site Visit Assessments Conducted



Aside from regularly scheduled site assessments, CAEAL also carried out 8 verification visits. These are designed to confirm that laboratories have implemented required actions, or that any changes that have been undertaken do not impair or compromise a lab’s ability to render competent results.

Profile of New Laboratories

In 2003-04, CAEAL carried out 35 assessments on new laboratories. Most new laboratories were in Alberta, Ontario and Nova Scotia, a reflection of these provinces’ regulations requiring accreditation. Of the 16 laboratories that applied for accreditation in Ontario, 12 are licensed under the

OSDWA. Twenty-three of the 35 new laboratories are considered “small” laboratories (i.e., ≤ 5 appendices).

Assessors

At the beginning of the 2003-04 fiscal year, CAEAL had a pool of 99 volunteer assessors. To meet demands of program growth, we

Table 1: Breakdown of New Laboratories in 2003-04 by Province

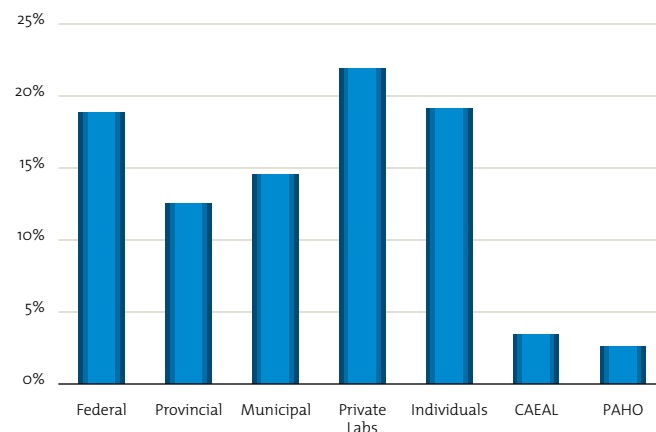
Location	New Laboratories in 2003-04
Yukon	–
British Columbia	1
Alberta	10
Saskatchewan	2
Ontario	16
Nova Scotia	5
International	1
Total	35

organized three IRCA-certified Lead Auditor/Auditor ISO 9000:2000 courses for the year. As of March 31, 2004, our pool included 152 volunteer assessors from various sectors (see Figure 3). Only 120 of them are eligible to perform assessments of licensed laboratories in the province of Ontario.

In 2003-04, 31 volunteer assessors and 4 staff were used to assess laboratories licensed under the OSDWA. Some of these volunteers and staff performed multiple assessments in order to meet the assessor requirements set out in the MOE/SCC/CAEAL Agreement for the Accreditation of Drinking-Water Testing Laboratories.

On the assumption that each site visit requires an average of two volunteer assessors, and that each volunteer is generally able to do two assessments per year, it is estimated that one volunteer assessor is required for each site visit that is scheduled. Only 30 volunteer assessors are drawn from the 51 laboratories accredited and licensed under

Figure 7: Sources of CAEAL Volunteer Assessors



the OSDWA — 19 from the public sector (including 7 volunteers from the Ontario MOE) and 11 from the private sector. Since CAEAL cannot use the 7 MOE assessors to audit the Ontario drinking water laboratories, only 23 are available from the 51 labs, so assessment of the licensed laboratories relies on the continued participation of volunteers working at laboratories that

are not licensed or out-of-province volunteer assessors.

Turnaround Time

In 2003-04, it took an average of 191 days from the date of a site visit until the SCC either granted a laboratory’s accreditation (for the first time), or until it was officially maintained (after the first time). A large portion of this time was taken up by

laboratories responding to corrective actions: labs typically consume the full amount of time allotted to address the required corrective actions — viz., six months for new laboratories, and three months for reassessments. Table 2 below shows a breakdown of the major steps in the accreditation process, and the average time taken to complete each

Table 2: Average Amount of Time for Major Steps in the Accreditation Process

Step in the Accreditation Process	Average Amount of Time (in days)
Staff Review of Laboratory Responses to Assessment Reports	53
Advisory Panel/Lead Assessor Review	23
Board of Directors Approval	12
SCC Accreditation Granted/Maintained	8

step. (Note: these averages are based on a different number of laboratories in each instance, as laboratories are at different stages in the process).

Suspensions and Withdrawals

Accreditation may be suspended, subsequent to being granted, if a laboratory:

- fails to successfully analyze two successive sets of Proficiency Testing (PT) samples for a specific test (parameter);
- does not submit a satisfactory Corrective Action Report in response to a PT failure; or
- fails to pass the first ‘live’ round of new PT test groups/parameters that are introduced into the CAEAL PT Program, following the pilot studies.

A PT failure subsequent to suspension may result in withdrawal of accreditation for the parameter.

In the 2003-04 fiscal year, there were 404 suspensions and 145 withdrawals of accredited parameters based on PT study results, as shown in Table 3.

Table 3: Number of Accredited Parameters that were Suspended or Withdrawn

Study	No. of Suspensions		No. of Withdrawals	
	All Labs	OSDWA Licensed	All Labs	OSDWA Licensed
March 2003	107	*	49	*
June 2003	118	*	22	*
October 2003	111	7	44	5
January 2004	68	1	30	3
Total	404	8	145	8

* The SCC/CAEAL/MOE Agreement was effective August 1, 2003, so no statistics on the OSDWA-licensed laboratories were available for the first two studies of the 2003-04 fiscal year.

Proficiency Testing Program

The CAEAL PT Program is accredited to ISO/IEC Guide 43 by the SCC. In 2003-04, the Program offered 39 test groups, comprising 196 parameters. Samples for each test group are generally provided to member labs twice each year. The test groups are split between March/October rounds (inorganics and microbiology) and January/June rounds (organics).

The scoring system and other details are provided in the Program Description, which is available via: www.caeal.ca.

New Test Groups

Four new test groups were created as pilot rounds in 2003-04:

- C02A High range metals (March 2004: Shipped 41)
- C31A PHC/BTEX in soil (January 2004: Shipped 78)
- C31B PHC in soil (January 2004: Shipped 46)
- C32 Residual chlorine (March 2004: Shipped 41)

A preliminary evaluation was made of the C31A and C31B pilot round data. The 2S (acceptable deviation) values for F1 (C6-C10) were on the same order as the consensus mean

values. For F1 to F4, the 2S values were approximately one half of the consensus mean values. The data were also separated into CCME: unmodified, and CCME: modified. Preliminary evaluation suggests that no statistically significant difference exists in consensus means or standard deviations between the two treatments.

These test groups became official (non-pilot) in 2003/2004:

- C22 OP Pesticides (January 2004: Shipped 58)
- C23 OCI Pesticides (January 2004: Shipped 37)
- C24 Aryloxy Acid Pesticides (January 2004: Shipped 36)
- C25 Phenolic Compounds (January 2004: Shipped 42)
- C26 Diquat/Paraquat (January 2004: Shipped 12)*
- C27 Glyphosate (January 2004: Shipped 15)**
- C29 Aldicarb (January 2004: Shipped 22)
- C30 NTA (January 2004: Shipped 9)*

Participation

Participation in the CAEAL PT program has increased continuously since 1995. This is due both to an increased number of participating labs (~ 360 by 2004) and to an increased number of test groups.

* These test groups were subsequently dropped from the PT program due to lack of participation.

** C27 will be reviewed after the June 2004 round, to assess the validity of continuing to include it in the PT program.

Table 4: Participation in the CAEAL Proficiency Testing program, effective April 2004.

Group No.	Group	Sample sets	Group No.	Group	Sample sets
C-01A	Major Ions	270	C-14	CN (SAD)	53
C-01B	NH ₃ , o-PO ₄ , DOC	146	C-15	pH	221
C-01C	Bromide/Nitrite	90	C-16	BTEX/THM	105
C-02A	Metals Full	186	C-17	Metals in Soil	96
C-02B	Metals High	44	C-18	PAH in Soil	51
C-03	TKN & TP	138	C-19	Mercury	89
C-04A	TSS	203	C-20	Asbestos	57
C-04B	BOD	156	C-21	Metals in Air	25
C-04C	Turbidity	94	C-22	OP Pesticides	60
C-04D	COD	83	C-23	OCI Pesticides	38
C-05	Coliforms	197	C-24	Aryloxy Acids	37
C-06	OCP/PCB	67	C-25	Phenolics	45
C-07	PAH	63	C-27	Glyphosate	17
C-08	PCB in Oil	58	C-28	Aromatic Organics in Air	17
C-09	Metals on Filters	29	C-29	Aldicarb	22
C-10	Major Ions on Filters	21	C-31A	BTEX soil	76
C-11	Trout LC ₅₀	21	C-31B	PHC soil	46
C-12	Daphnia LC ₅₀	23	C-32	Chlorine	41
C-13	Microtox IC ₅₀	31	Total		3016

Figure 8: PT Participation

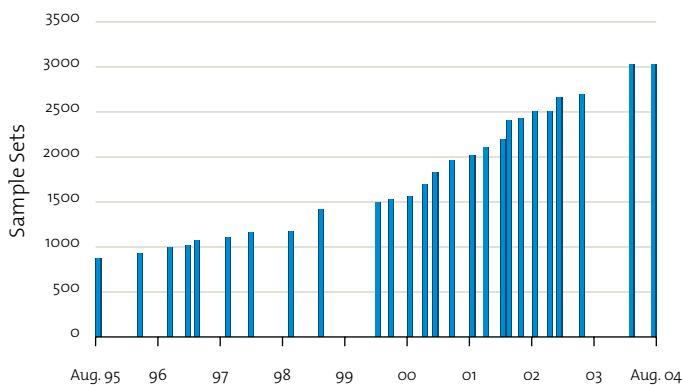


Figure 9: PT Turnaround (January/June)

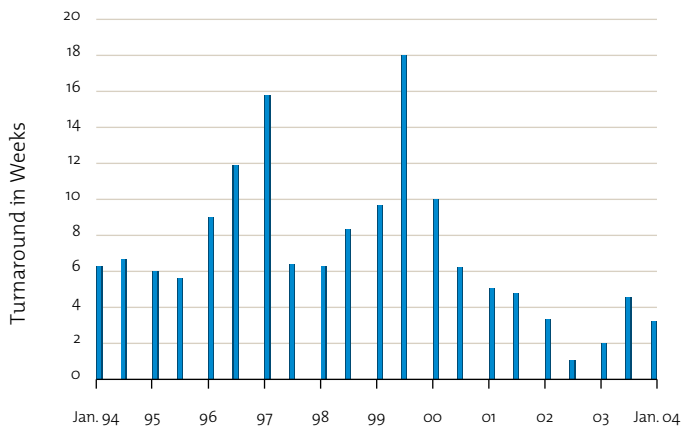
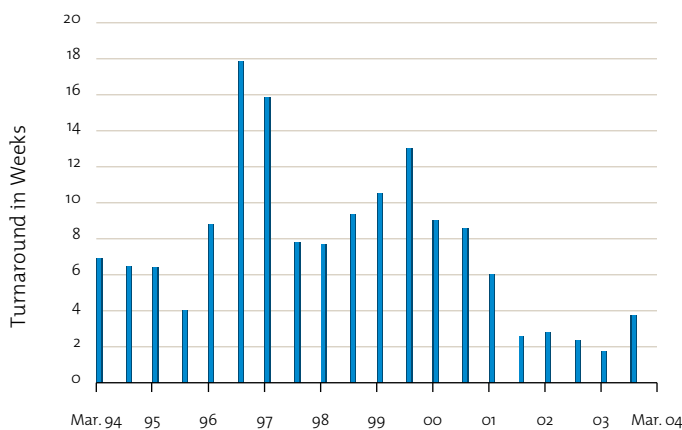


Figure 10: PT Turnaround (March/October)



Turnaround Times

CAEAL strives to return PT results to member laboratories within timeframes that enable undertaking corrective actions in a timely manner. The January/June rounds encompass the organics test groups, parameters in air and parameters in soil. Since June 2000, the turnaround of reports has been under six weeks.

The March/October PT rounds include the inorganics in water and the toxicity test groups. Since 2001, the turnaround of reports has been less than six weeks.

The improved turnaround is largely attributed to the increasing use of automation in the CAEAL processes, and member laboratories' web entry of their results.

Summary of Proficiency Testing Performance

The tables on pages 28–30 provide details of success rates for each test group. The first two tables (5 and 6) reflect the entire program, while the last two (7 and 8) are for laboratories licensed under the OSDWA by Ontario’s MOE. Non-reported results are included among the failures in the estimates, under ‘% successful.’

Some questions have been raised about changes in the non-success rates of CAEAL’s PT program, and it was suggested that they result from a narrowing window of acceptable results. The non-success rates of a set of inorganic test groups over several years were monitored and analyzed by CAEAL staff, and the

results of their study have been tabulated in Figure 11, below. In brief, a clear outcome of these figures is an overall stability in these non-success rates — which is consistent with what occurs with similar data at the international level.

Figure 11: Trend in PT Failure Rate: C1, 2, 3, 4A, 14, 15

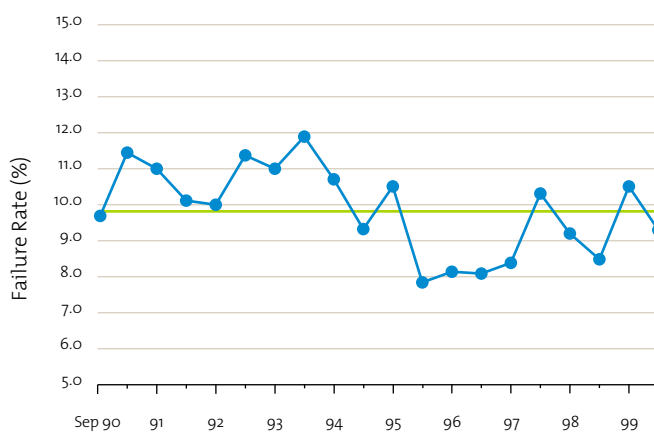


Table 5: Total Program June/January Rounds

		% Successful	
		June 2003	January 2004
Water (Organics)			
Co6	OCP/PCB	87.4	87.6
Co7	PAH	82.5	81.1
C16	BTEX/THM/VOC	83.7	84.5
C22	OP Pesticides	86.6	79.4
C23	OCI Pesticides	94.6	87.1
C24	Aryloxy acid pesticides	92.5	84.5
C25	Phenolics	87.9	84.7
C26	Diquat/Paraquat	Pilot	90.9
C27	Glyphosate	Pilot	86.7
C29	Aldicarb	Pilot	93.3
C30	NTA	Pilot	77.8
Oil			
Co8	Total PCB	88.1	82.8
Air Filter			
Co9	Metals on filters	92.2	91.8
C10	Major ions on filters	93.1	77.3
Soil/Sediment			
C17	metals in soil	87.6	87.5
C18	PAH in soil	85.6	86.0
OH			
C20	Asbestos	72.9	76.2
C21	Metals in air	85.6	95.8
C28	Aromatic organics in air	69.0	84.4

Table 6: Total Program March/October Rounds

		% Successful	
		March 2003	October 2003
Water (Inorganics)			
C01A	Major ions	87.9	84.8
C01B	NH ₃ /PO ₄ /DOC	83.3	85.1
C01C	Br/NO ₂	90.2	87.8
C02A	Metals	87.2	87.8
C03	TKN/TP	87.4	83.5
C04A	TSS	89.4	88.0
C04B	BOD	88.5	88.5
C04C	Turbidity	90.2	86.2
C04D	COD	92.3	85.4
C14	CN	83.6	88.9
C15	pH	90.4	90.5
C19	Hg	87.8	79.5
Water (Microbiology)			
C05	Microbiology	88.5	85.6
Water (Toxicology)			
C11	Trout	83.3	91.3
C12	Daphnia	87.0	100.0
C13	Microtox	93.6	80.7
OH			
C20	Asbestos	83.6	68.2
C21	Metals in air	91.3	93.9

Table 7: OSDWA Labs — October 2003

		No. of Tests	% Successful
Water (Inorganics)			
Co1A	Major Ions	280	90.4
Co1B	NH ₃ /PO ₄ /DOC	45	95.6
Co1C	Br/NO ₂	34	91.2
Co2A	Metals	530	93.4
Co3	TKN/TP	32	93.8
Co4A	TSS	15	93.3
Co4B	BOD	7	100.0
Co4C	Turbidity	16	81.3
Co4D	COD	5	100.0
C14	Cyanide	12	91.7
C15	pH	26	96.2
C19	Mercury	15	93.3
Water (Microbiology)			
Co5	Microbiology	118	92.4
Water (Toxicology)			
	Microtox	1	100

Table 8: OSDWA Labs — January 2004

		No. of Tests	% Successful
Water (Organic)			
Co6	OCP/PCB	169	96.5
Co7	PAH	128	96.1
C16	BTEX/THM/VOC	314	97.8
C22	OP Pesticides	210	91.4
C23	OCI Pesticides	58	96.6
C24	Aryloxy acid Pesticides	84	96.4
C25	Phenolic Compounds	60	93.3
C26	Diquat/Paraquat	16	93.8
C27	Glyphosate	7	85.7
C29	Aldicarb	10	100.0
C30	NTA	5	100.0

Effect of Accreditation and PT Participation on Laboratory Performance

In 2003-04, an evaluation was made about the effect of PT participation on performance. The PT database was queried for all laboratory/parameter combinations where both a clear starting date was known and continuous participation for at least ten studies was indicated. In total, about 30,000 individual scores were extracted, and the average score for each study, starting from the first participation, was plotted. Results clearly demonstrated that, on average, a laboratory could expect to see an improvement in PT scores over the first few PT rounds.

This evaluation complements the paper published by Andrew Morris and Debbie Macey (*Laboratory accreditation: Proof of performance for environmental laboratories —*

2001 study), which demonstrated that accredited laboratories in the CAEAL PT program tend to perform considerably better than non-accredited laboratories.⁴

Figure 12: Effect of PT Participation on Performance

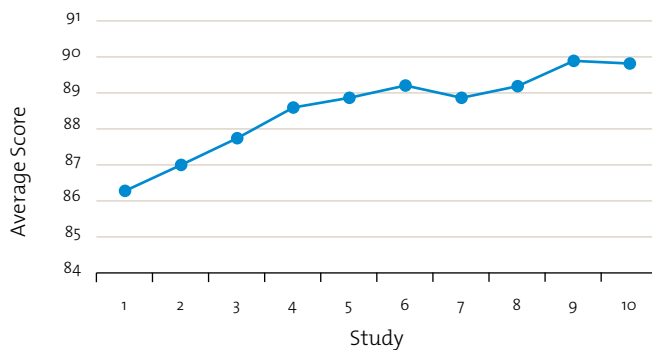
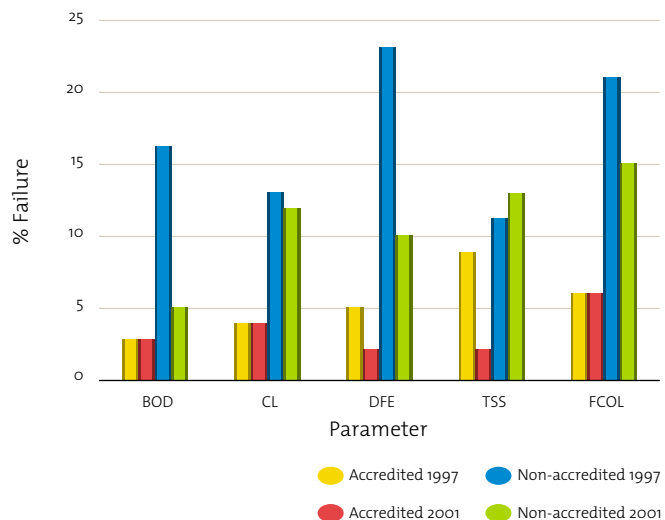


Figure 13:



⁴ See Andrew Morris and Debbie Macey. Laboratory accreditation: Proof of performance for environmental laboratories_2001 study, *Accred. Qual. Assur.* (2004) 9:52-54

Training

The CAEAL Training Service consists of two persons who are responsible for the following:

- Managing the planning and delivery of a viable and self-sustaining CAEAL Training Service in support of CAEAL operations and to meet member needs;
- managing the CAEAL Quality Management System so as to meet SCC requirements for partnership under CAN-P-1558 and accreditation as a PT provider under CAN-P-1593; and
- managing the marketing efforts associated with the CAEAL Training Service so as to recover all costs associated with training.

The Mission of the Training Service is: *CAEAL will first identify, then develop or acquire, and then deliver facilitated training to CAEAL members and*

other organizations, in accordance with the stated needs of these organizations, and in a manner that supports the integrity, credibility, and viability of the association.

The CAEAL Strategic Plan sets the goal of ensuring the sustainable growth of the CAEAL Training group and of maintaining our membership's leading-edge focus by:

- Making the best use of information technologies in support of our training program;
- identifying member training needs beyond their current baseline;
- increasing the marketing of our training services;
- extending our training offerings beyond our current membership, both nationally and internationally;
- turning training services into an autonomous operation;

- ensuring that the most appropriate expertise is available to our training program; and
- engaging PAHO to assist with language issues and cultural adaptation of CAEAL training outside Canada.

The Training Service's operations are bound by the following policies:

- Delivering training primarily, although not exclusively, to current members and their staff;
- not seeking to enter into competition with other qualified training providers, beyond delivering training to CAEAL members that lies within the Training Service's own areas of expertise;
- providing members with opportunities to participate in the design, development and delivery of training to other members through formal

partnership arrangements. The overriding criterion in this regard is for our training to meet the needs of our membership, for those members' greater good, yet striving not to compete directly with those members who may also deliver training;

- endeavouring to obtain training expertise, towards the attainment of our training goals, from within the CAEAL membership; and
- delivering training at a site provided by a CAEAL member organization only as long as participation is not restricted to individuals from that organization. This is to avoid any perception of conflict of interest between the training delivered and other programs delivered to the member.

The priorities of the CAEAL Training Service remain as follows:

- Ensuring sufficient trained and qualified assessors to meet CAEAL operational assessment needs;
- assisting overall CAEAL business operations with the planning and delivery of training and other services, as directed;
- developing and delivering training to CAEAL members within the bounds of an approved training budget;
- developing a consensus on the CAEAL membership's training requirements; and
- marketing CAEAL's Training Service capabilities to our membership.

Accomplishments in FY 2003-04

During 2003-04, the CAEAL Training Service planned and delivered 43 courses to 552 members and non-members over the year — a 10% increase in activities, with a 20% reduction in participation, over last year.

Three accreditation seminars were given to 70 members and prospective members. These activities show little change over the previous year.

Assessor training reaching 64 participants dealt with general CAEAL matters and specific items within each discipline — including checklists and measurement uncertainty.

Twenty six new CAEAL assessors underwent Lead Assessor training and completed the one-day New Assessor course.

Table 9:

Target

Achieve net income (revenue minus expenses) from training workshops, document sales, etc., of at least \$90,000;

Develop and deliver training for lab users and regulators on the topic of measurement uncertainty;

Obtain a 60% attendance overall for any CAEAL-sponsored training sessions that are advertised;

Develop alternative delivery capabilities for training, such as online training.

Achievement

Revenues reached \$103,000, somewhat less than anticipated, and expenses reached \$71,000, as expected, for a net revenue of \$31,000. The lesson learned is the need to re-examine the CAEAL fee structure.

A presentation, delivered at two pilot sessions, was very well received. The CAEAL Board has decided to make it available to members on a fee-for-service basis.

Overall attendance was 44%. The lesson learned is that pricing should be based on 40% attendance.

A request for proposals was issued and a successful candidate was engaged. Web-based training is expected to be available during the summer of 2004.

The CAEAL Training Service Partnership Program is now being used to develop and deliver quality system training, so more local resources are used to deliver the training.

On behalf of CAEAL and the PALCAN partnership, the CAEAL Training Service continues to participate in international activities regarding ISO/IEC 17025, mutual recognition arrangements to which Canada is a signatory, and new partner development.

Specific targets for FY 2003-04 are expressed in Table 9, along with relevant achievements:

Membership Satisfaction in FY 2003-04

Overall, members felt well served by what the CAEAL Training Service offered. The facilitator evaluations for training sessions indicate that participating members gave at the very least a passing grade to every facilitator. The goal of an overall 70% satisfaction rating was exceeded.

Most facilitators have maintained this passing grade over multiple sessions, and members have rated five facilitators as "excellent" overall; this is four more than last year. When some concerns threatened the acceptability of further training for members, steps were taken to inform the facilitators.

Table 10: Participant Scoring of Facilitators (2003-04)

Facilitator	Sessions	Average	Rating
Facilitator 1	14	85%	Excellent
Facilitator 2	5	84%	Excellent
Facilitator 3	4	87%	Excellent
Facilitator 4	4	81%	Excellent
Facilitator 5	5	81%	Excellent
Facilitator 6	2	67%	Above Average
Facilitator 7	2	67%	Above Average
Facilitator 8	1	75%	Above Average
Overall CAEAL Rating		78%	Above Average

