

2005

ANNUAL REPORT



CAEAL





Canadian Association for
Environmental Analytical
Laboratories Inc.

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President's Report



The 2005 year has been a landmark year for the Canadian Association for Environmental Analytical Laboratories (CAEAL) with the issuance of accreditation certificates at the beginning of 2005 and our accreditation program being formally recognized by the international community by the end of the year. I will not provide a list of all the important steps along this ascending road since they are mentioned in the newsletters and on the web site. Needless to say, Rick Wilson and his team have worked very hard to attain this goal. CAEAL has the distinction of achieving several of the recognition steps in record time, and CAEAL was the first Asia Pacific Laboratory Accreditation Cooperation (APLAC) accrediting body to be evaluated against the new standard ISO/IEC 17011.

I would like to reiterate some of my previous statements about the CAEAL program. It is acknowledged internationally as being one of the best in the world. CAEAL stands on four very strong platforms: the Accreditation Council, the proficiency testing (PT)

program, the site assessment program, and the training program. The Accreditation Council is commended for its efforts, especially during the start-up period when training and orientation had to be completed in a very short time span. This Council provides a high level of independence and review for accreditation. The PT program is very extensive and rigorous and includes a Program Committee which provides a high level of technical support and advice. In participating in the PT program, laboratories and their staff right down to the most junior analyst can feel proud of being part of the wheel that assures quality data to their customers. The site assessment program relies heavily on a team of around 150 volunteer expert assessors and an Advisory Panel (credit should also be given to the employers of the assessors who contribute their staff's time to help with the program). The training program provides the necessary training to ensure that people working in the various aspects of quality assurance have the expertise to do their jobs. On

behalf of the Board of Directors, I offer my appreciation to staff and volunteers for all their hard work and dedication and also to the members of the Association for their participation and cooperation.

The overall goal of the organization is to provide world class accreditation services to its membership. It is important to keep in mind that CAEAL's membership is comprised of several groups which may have slightly differing objectives and interests within the overall mission of providing top quality

laboratory services to their customers. These groups include large private labs, small private labs, non-profit labs, and labs that are part of larger organizations. Trying to provide services with operational policies that are fair and equitable to all is often a challenge. I hope that the members appreciate the fact that CAEAL must operate with the same policies for all, even though an operational decision may seem unfair in a specific instance. My observation over the many years that I have been involved with CAEAL is that the Canadian laboratory

community has a very pragmatic and understanding group of people who take the best interests of the industry at heart and cooperate with each other very well. I am confident that this attitude will keep the Canadian laboratory community progressive in these days of a changing environmental landscape.

Dr. Wo Yuen
President of CAEAL

Board of Directors

President

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Saskatchewan Research Council
Saskatoon, SK

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SGS Lakefield
Lakefield, ON

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Environment Canada
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Enviro-Test Laboratories
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Dr. John Cooper
Health Canada
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Mr. James Doull
Environment Canada
Moncton, NB

Mr. James Downie
New Westminster, BC

Dr. T. Duncan Ellison
Canadian Water and Wastewater
Association
Ottawa, ON

Dr. John Fenwick
Montréal, QC

Mr. Murray Hartwell
Maxxam Analytics Inc.
Bedford, NS

Ms. Jacinthe Leclerc
Environment Canada
Montréal, QC

Small Laboratory Committee

Representatives:

(rotational depending on meeting location)

Peter Haulena
Accutest Laboratories
Ottawa, ON

Trudy Toms
Jacques Whitford Environment
Limited
St. John's, NL

Corporate Profile

The Canadian Association for Environmental Analytical Laboratories (CAEAL) is a non-profit laboratory accrediting body. During 2005 CAEAL provided member laboratories with accreditation assessment and re-assessment, as well as proficiency testing and training services, and granted 158 accreditations to environmental laboratories.

CAEAL member laboratories demonstrate their commitment to the highest standards of scientific and management excellence, allowing CAEAL to earn international recognition for its programs. In 2005 the CAEAL proficiency testing program was accredited by the American Association for Laboratory Accreditation (A2LA), and CAEAL became a signatory to the Mutual Recognition Arrangements of the Asia Pacific Laboratory Accreditation Cooperation (APLAC) and the International Laboratory Accreditation Cooperation (ILAC). As a result, CAEAL accredited laboratories are now recognized by over 50 accrediting bodies world-wide.

The CAEAL Quality System is based on three international standards:

- ISO/IEC 17011 – Conformity Assessment – General requirements for accreditation bodies accrediting conformity assessment bodies.
- 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 nationally and internationally as an agency that delivers competent laboratory assessments and proficiency testing services. CAEAL staff document all activities that may not conform to requirements, and take corrective action. In support of continuous improvement, CAEAL 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. An internal audit is conducted each year, after which the Board of Directors conducts a management review of the entire system. The Standards Council of Canada (SCC) has examined our Quality System every year since 1994 for conformance to ISO/IEC Guide 58 (now ISO/IEC 17011), and CAEAL is audited periodically to ensure conformance to ILAC Guide

13. As a signatory to the APLAC and ILAC mutual recognition arrangements, international teams evaluate CAEAL periodically, including observation of CAEAL teams conducting laboratory assessments, to ensure that the CAEAL accreditation program is conformant to ISO/IEC 17011.

CAEAL regards accreditation, proficiency testing, and high quality information as vital to improving environmental quality and public health and safety. CAEAL's values include providing the highest levels of professional and technical expertise

and modeling the most rigorous standards of fair and ethical conduct. CAEAL provides leadership by providing world-class programs that meet members' business needs and that also satisfy regulator requirements.

At the end of December 2005, there were 614 members of CAEAL. This total has remained relatively constant during the past two years and, as shown in Table 1, the largest portion of the membership is derived from the private sector.

Table 1: Components of the CAEAL membership

Type	Private Sector	Public Sector	Independent
Institution	272	109	–
Individual	75	96	49
Associate	7	4	–
Student	–	–	2
Total	354	209	51

Financial Report

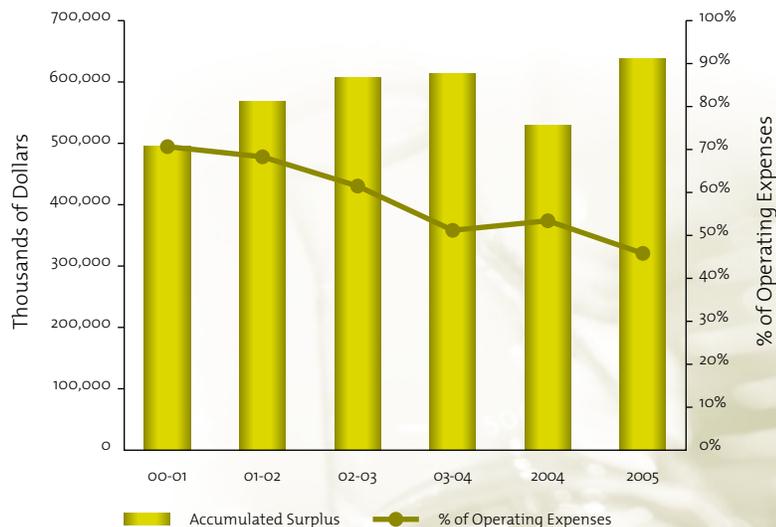
The 2005 fiscal year can best be characterized as a year of new beginnings for CAEAL with its recent change in status to an internationally recognized independent accrediting body.

The uncertainties surrounding the first year as an independent accrediting body led the Board of Directors to approve a conservative surplus budget of \$21,565. For the same reason, expenditures were managed very conservatively. The result at the end of 2005 was a reported surplus of

\$101,351 which has been added to the Association's reserve. Total reserves of the Association, defined as total net assets as a percentage of total operating expenses, are now at 46%, or 5.52 months of general operations, compared to 4.77 months a year ago. It is CAEAL policy to maintain cash reserves with a general target level of one-half year of full operations (see Figure 1).

Total revenue was 2% lower than the \$3.055 million budgeted. The main driver for this decrease was a lower

Figure 1: Trend in Cash Reserves



participation than projected in Alberta’s Alternate PT program as well as a decline in the number of CAEAL training courses attended throughout the period. As in previous years, proficiency testing was the main source of revenue (see Figure 2).

In total, expenses for the year were \$2.9 million, a decrease of \$0.129 million or 4.3% of budgeted expenses. One internal staff position remained

vacant throughout the year which accounted for a large portion of the reduced expenses together with the reduced direct costs associated with the lower than expected participation in the Alberta Alternate PT program. A total of 88.2% of 2005 expenses were devoted to direct member service or associated program support costs, with 11.8% relating primarily to the cost of running the association (see Figure 3).

CAEAL’s success is directly contingent on the passion, willingness and leadership of a growing volunteer base to assume a stronger role in the organization and in its achievement of goals. It is important to point out that this economic value is not captured in our financial statements. The contribution of volunteers continues to play a strong and significant role in the delivery of CAEAL’s programs.

Figure 2: 2005 Revenue Sources

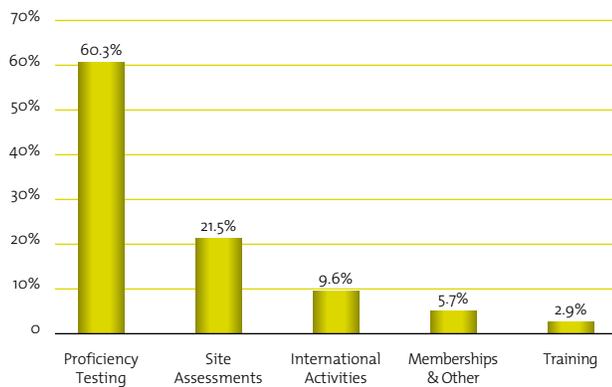
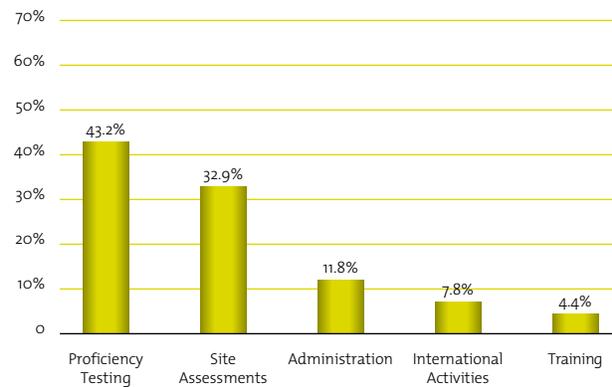


Figure 3: Distribution of 2005 Expenses Amongst Programs



Auditors' Report on Summarized Financial Statements

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

The accompanying summarized statements of operations, cash flows and financial position are derived from the complete financial statements of the Canadian Association for Environmental Analytical Laboratories Inc. as at December 31, 2005 and for the year then ended on which we expressed an opinion without reservation in our report dated January 19, 2006. The fair summarization of the complete financial statements is the responsibility of the Association's management. Our responsibility, in accordance with the applicable Assurance Guideline of The Canadian Institute of Chartered Accountants, is to report on the summarized financial statements.

In our opinion, the accompanying financial statements fairly summarize, in all material respects, the related complete financial statements in accordance with the criteria described in the Guideline referred to above.

These summarized financial statements do not contain all the disclosures required by Canadian generally accepted accounting principles. Readers are cautioned that these statements may not be appropriate for their purposes. For more information on the Association's financial position, results of operations and cash flows, reference should be made to the related complete financial statements.



Raymond Chabot Grant Thornton
Chartered Accountants

Ottawa, Canada
March 27, 2006

Summarized Statement of Operations

Year ended December 31, 2005

	31/12/2005 (12 months)	31/12/2004 (9 months)
	\$	\$
Revenue		
Evaluations	2,683,043	1,909,800
Interest and sundry income	29,790	7,062
Memberships	149,485	106,864
Projects	55,873	16,451
Training	87,568	36,601
	3,005,759	2,076,778
Expenses		
Accreditation transition costs		28,077
Evaluations	1,425,111	1,097,120
Operational	1,393,808	1,008,171
Projects	38,035	
Training	47,454	30,367
	2,904,408	2,163,735
Excess (deficiency) of revenue over expenses	101,351	(86,957)

Summarized Statement of Cash Flows

Year ended December 31, 2005

	31/12/2005 (12 months)	31/12/2004 (9 months)
	\$	\$
OPERATING ACTIVITIES		
Excess (deficiency) of revenue over expenses	101,351	(86,957)
Non-cash items		
Amortization of capital assets	24,140	18,697
Gain on disposal of capital assets	(595)	
Changes in working capital items	546,303	298,540
Cash flows from operating activities	671,199	230,280
INVESTING ACTIVITIES		
Purchase of investments	(702,822)	(257,057)
Redemption of investments	100,000	200,000
Acquisition of capital assets	(8,315)	(48,055)
Proceeds on disposal of capital assets	595	
Cash flows from investing activities	(610,542)	(105,112)
Net increase in cash	60,657	125,168
Cash, beginning of year	308,666	183,498
Cash, end of year	369,323	308,666

Summarized Statement of Financial Position

December 31, 2005

	2005	2004
	\$	\$
ASSETS		
Current assets		
Cash	369,323	308,666
Temporary investments	279,680	
Accounts receivable	268,779	424,554
Prepaid expenses	65,486	50,202
	983,268	783,422
Long-term investments	631,426	308,284
Capital assets	65,990	81,815
	1,680,684	1,173,521
LIABILITIES		
Current liabilities		
Accounts payable and accrued liabilities	391,372	593,356
Deferred revenue	649,010	41,214
	1,040,382	634,570
NET ASSETS		
Invested in capital assets	65,990	81,815
Unrestricted	574,312	457,136
	640,302	538,951
	1,680,684	1,173,521

On behalf of the Board



Director



Director

CAEAL Accreditation Program

In January 2005, following the expiry of the 10-year accreditation partnership with the Standards Council of Canada (SCC), CAEAL resumed granting accreditation to laboratories and by the end of the year, 158 laboratories had been accredited through the CAEAL program.

A separate tripartite agreement between the Ontario Ministry of the Environment, the SCC, and CAEAL exists for SCC accreditation of drinking water testing under the Ontario Safe Drinking Water Act (OSDWA). In this unique program, CAEAL provides the proficiency testing and laboratory assessments, and laboratory accreditation is recommended to the SCC following review by the CAEAL Accreditation Council.

For both the CAEAL accreditation program and the SCC/CAEAL program for Ontario drinking water testing, CAEAL trains employees of member laboratories and other volunteers to act as assessors for the Association. These volunteers attend a rigorous certified

Lead Auditor/Auditor ISO 9000:2000 course and participate in CAEAL-specific training once every 2 years. They currently number more than 150 and are an invaluable resource for CAEAL.

The process to attain and maintain accreditation in 2005 was as follows:

- An assessment was carried out against criteria listed in ISO/IEC 17025 – *General Requirements for the Competence of Testing and Calibration Laboratories*;
- The laboratory received a report of corrective actions;
- Laboratories undergoing reassessments had three months to undertake corrective actions, while new laboratories were given six months;
- A laboratory's response to the corrections was reviewed by CAEAL staff, the Lead Assessor, and Advisory Panel members;
- The Advisory Panel recommended to the CAEAL Accreditation Council whether to grant or maintain a laboratory's accreditation;
- When the Accreditation Council was satisfied that the appropriate correc-

The CAEAL Accreditation Council

- Dr. Adrian Demayo, Chair
Carleton University, Ottawa
- Ms. Linda Crawford, Vice-Chair
QMP-LS, Toronto
- Mr. Edgardo Alvarez
Department of National Defence,
Ottawa
- Dr. Steve Clarkson
Health Canada, Ottawa
- Mr. Peter Haring
Newfoundland and Labrador
Department of Environment and
Conservation, St. John's
- Mr. Steve Horvath
British Columbia Environment,
Surrey
- Mr. Paul Kluckner
Environment Canada, Vancouver
- Mr. Pat Lang
Alberta Environment, Edmonton
- Mr. Julien Moreault
Centre d'expertise en analyse
environnementale du Québec,
Québec
- Dr. Peter Toft
Qualicum Beach

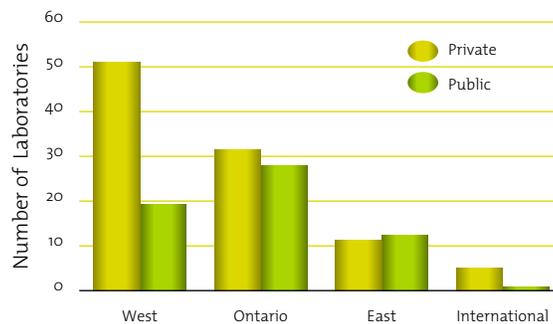
tions had been made, CAEAL either granted the accreditation directly if the laboratory had applied for CAEAL accreditation, or in the case of Ontario drinking water testing, the recommendation to grant or maintain accreditation was forwarded to the SCC's Director of Conformity Assessment for accreditation.

- In all cases, laboratories must participate successfully in proficiency testing if it is available for the tests being accredited.

Program Participation

The accreditation program had a total of 180 laboratories participating by December 31, 2005 (85% of the comparable number in 2004). This includes 158 laboratories that were already accredited plus another 22 laboratories that were at some point in the accreditation stream prior to being accredited (for example, still completing corrective actions).

Figure 4: Distribution of Accredited Laboratories



Some additional information about the 158 CAEAL accredited laboratories (see Figure 4):

- 63% are private sector companies (little changed from 2004);
- 37% belong to the public sector;
- 38% are in Ontario (down from 43% in 2004);
- 44% are from western and northern Canada (up from 39% in 2004);
- 15% are in provinces east of Ontario; and
- 3% are in various international locations.

Of the 22 laboratories still at the applicant stage:

- most (82%) are from the private sector; and
- most (55%) are from western and northern Canada.

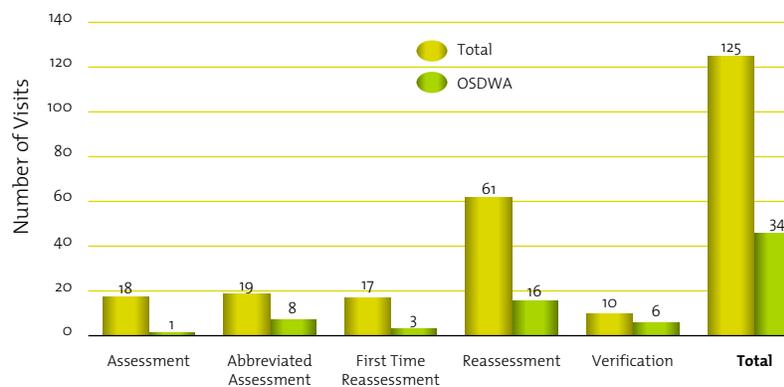
Site Visits

CAEAL conducts the following types of laboratory assessments:

- Initial Assessment (A): A site visit conducted at a laboratory applying for accreditation for the first time.
- Abbreviated Assessment (AB): 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 (FR): Site visit carried out one year after an initial assessment.
- Reassessment (R): Site visits occurring once every two years after the first-time reassessment.
- Verification (V): A site visit to confirm implementation of corrective actions or to ensure satisfactory conditions following significant changes at a laboratory.

Figure 5: Categories of Site Visits Conducted in 2005



In 2005 CAEAL conducted a total of 125 site visits, of which 34 visits (27%) were conducted at laboratories licensed under the OSDWA (see Figure 5). This total is approximately 14% lower than the 145 conducted in 2004, due to the 2-year cycle of assessments (the number of site visits in 2006 will be approximately the same as in 2004). It is noteworthy that 11 of the 18 initial assessments were for laboratories that CAEAL categorizes as “small” because they seek accreditation for 7 or fewer “appendices”.

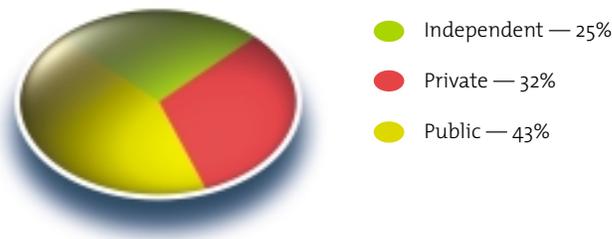
Assessors

CAEAL had 155 volunteer assessors at the end of 2005, primarily from government and private sector laboratories (see Figure 6). Each site visit requires an average of two volunteer assessors, and each laboratory is fully re-assessed every two years, so the CAEAL assessor plan assumes a minimum of one volunteer assessor is required for each laboratory in the accreditation stream. With 180 laboratories now in the stream, a training session for new assessors was conducted in January 2006.

In 2005, a total of 228 assessor trips were conducted to complete the total of 125 assessments. Excluding the verification visits and the abbreviated assessments, in which a single assessor may be assigned, the routine assessments and re-assessments were each conducted by an average of 1.9 assessors. The actual assignments would range from a single experienced assessor to conduct re-assessments at small laboratories (87 out of 180), to several assessors required to conduct the re-assessment of a large laboratory with a complex scope of testing.

A total of 28 volunteer assessors are drawn from the 57 laboratories accredited and licensed under the OSDWA - 18 from the public sector and 10 from the private sector. Since each volunteer assessor typically conducts two or more assessments annually, CAEAL can expect that the 28 assessors from OSDWA-licensed laboratories will provide about 56 assessor trips annually. During 2005, 54 assessor trips were needed to conduct the 34 assessments of OSDWA laboratories. This means

Figure 6: Sources of CAEAL Volunteer Assessors



that the Ontario licensed laboratories are basically covering their own requirements for assessors, however it is necessary to draw on assessors from non-OSDWA laboratories in order to provide the specific expertise required and to avoid conflicts of interest.

Assessment Effort

CAEAL laboratory assessments use the concept of a technical “appendix” to the assessment report. Each appendix is a technical checklist that is completed for each combination of matrix and test method. In addition to the assessment of the quality system, the number of appendices is therefore a general measure of the workload on the assessment team. At the end of 2005, the 180 laboratories in the accreditation stream had a total of 4160 appendices, and during 2005, CAEAL assessors reviewed 2009 appendices (48% of the 2-year total).

Turn-around Time

During the past few years the total elapsed time from a site visit to an initial accreditation has been approxi-

mately 265 days on average, and for re-accreditations this time drops to about 220 days. Table 2 shows a breakdown of the major steps in the accreditation process, and the average time taken to complete each step. The average time taken for each major step has been essentially the same since 2003, with significant improvements in some of the steps in 2005.

In May 2005, an audit of the 2004 assessment files showed that some reviews of laboratory responses took

substantially longer to process than the average of 56 days shown in Table 2. Analysis showed that the problem occurred when the laboratory responses arrived at the CAEAL office during peak periods (typically October to February). CAEAL has committed to eliminate this problem and has established a target of a maximum 45 days to review the laboratory’s response and get back to the laboratory.

As of March 2006, CAEAL staff had received and processed 76 laboratory

Table 2: Average Amount of Time (Days) for Major Steps in the Accreditation Process*

Step in the Accreditation Process	2003	2004	2005
Laboratory Response			
– Assessments	146	149	136
– Re-assessments	91	88	89
Staff Review of Laboratory Responses to Assessment Reports	53	56	48
Advisory Panel/Lead Assessor Review	23	24	19
CAEAL Board (2003 and 2004) or Accreditation Council (2005) Approval	12	10	11
From CAEAL approval to SCC Acc. decision	8	9	35**

* These averages are based on a different number of laboratories in each instance, as laboratories are at different stages in the process.

** SCC accreditation in 2005 was for OSDWA Licensed laboratories only.

responses from 2005 within an average of 36 days (a significant reduction from 2004), and as shown in Figure 7, 75% of these were processed within 45 days with none extending beyond 75 days. A total of 96 full assessments (excluding abbreviated assessments and verifications) were conducted, so the 76 cases reported here represent 79% of the total. At the time of writing, all of the remaining cases are within the 45-day target.

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.

The summary of suspensions shown in Table 3 indicates that the pattern reported for 2004 has repeated in 2005: the non-accredited laboratories experienced the highest overall rate of suspensions while the accredited OSDWA laboratories experienced the lowest rate.

A PT failure subsequent to suspension may result in withdrawal of accreditation for the parameter. In 2005, a total of 49 withdrawals occurred at accredited laboratories, 12 of these at OSDWA laboratories.

Figure 7: Turn-around Time for Laboratory Responses

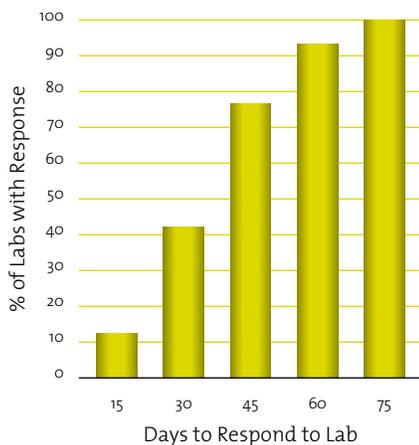


Table 3: Suspensions at non-accredited, accredited and accredited OSDWA laboratories (values are shown as a percentage of total PT test samples)*

Study (2005)	Non-Accredited	All Accredited	Accredited OSDWA
January	0.45%	0.66%	0.78%
March	2.24%	1.58%	1.16%
June	1.73%	0.79%	0.81%
October	1.20%	0.97%	0.78%
Overall Average	1.52%	1.01%	0.89%

*These values do not include suspensions for reason other than PT failures.

Proficiency Testing Program

In 2005 the CAEAL Proficiency Testing (PT) Program was granted accreditation to ILAC G-13:2000 by A2LA. The Program offered thirty-seven test groups, comprising 193 parameters. Samples for each test group are generally provided to member laboratories twice each year. The test groups are split between March/October rounds (inorganic and microbiology) and January/June rounds (organics).

The scoring system and other details are provided in the *CAEAL PT Program Policies and Procedures*, which is available via: www.caeal.ca.

New Test Groups

There were no new test groups or parameters added to the program in 2005. Requests for proposal were issued for all of the existing test groups as well as three new ones (oil and grease, total phenolics, and *E. coli* and total coliforms by presence/ absence).

New Collaborator Laboratories

Clinical Microbiology Proficiency Testing (CMPT) from the University of British Columbia was awarded a

contract for the production of the C05 microbiology samples. The first study using CMPT occurred in October 2005. Another new collaborator (Wibby Environmental) was awarded a contract to produce and distribute the test groups C22, C24, C25, C27, C29 and C34 (oil and grease). Their first study will be in January 2006.

Participation

Participation showed a marginal decline in 2005 (Figure 8) due to continued laboratory consolidation. Participation levels for each test group are indicated below in Table 4.

Turn-around Times

CAEAL strives to return PT results to member laboratories within timeframes that enable the laboratories to undertake corrective actions in a timely manner. For the last several years, the turnaround time has been within the five-week goal, however there has been a slight increase during the last few studies because of an increased scrutiny on sample homogeneity and stability (see Figures 9 and 10).

Summary of Proficiency Testing Performance

The following tables provide details of success rates for each test group. The first two (Tables 5 and 6) reflect the entire program, while the last two (Tables 7 and 8) are for laboratories licensed by the Ontario Ministry of Environment under the Ontario Safe Drinking Water Act. Note that non-reported results are included among the failures in these estimates.

Continual Improvement

In response to concerns and recommendations from members, significant changes were made to the PT program in 2005. The changes are summarized as follows:

- Final PT score is based on the mean of the absolute z scores of the four samples rather than on the assigned point system;
- Accurately reported non detects are assigned a z score of 2 (3 for C02A) instead of 0 (~5 points) as was previously done;

- If a laboratory reports their detection level during PT reporting, the z score is calculated as follows:

$$Z = \frac{(x - \bar{X})}{\sqrt{s^2 + (RDL/3)^2}}$$

This incorporates the uncertainty near a laboratory’s detection limit into the z score calculation; and

- Addition of a bias flag in the reports; these bias flags are based on the four PT samples.

Figure 8: Participation Trend in the Proficiency Testing Program (sample sets = total number of registered test groups)

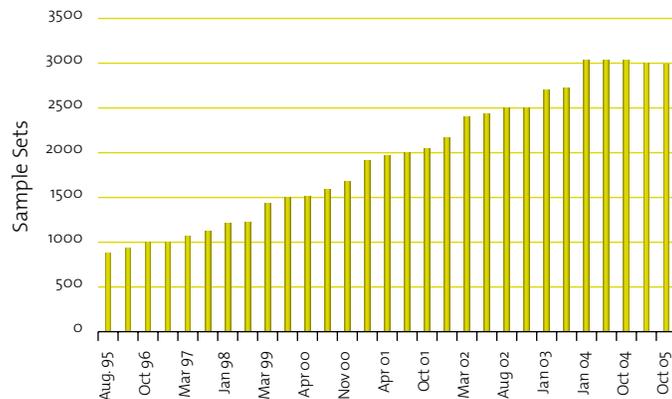


Table 4: Participation in Each Test Group of the CAEAL Proficiency Testing Program

Group No.	Group	Sample Sets Per Study 2004	Sample Sets Per Study 2005	Group No.	Group	Sample Sets Per Study 2004	Sample Sets Per Study 2005
C-01A	Major Ions	271	252	C-14	CN (SAD)	50	50
C-01B	NH ₃ , o-PO ₄ , DOC	149	148	C-15	pH	223	216
C-01C	Bromide/Nitrite	91	91	C-16	BTEX/THM	103	105
C-02A	Metals Full	175	166	C-17	Metals in Soil	98	96
C-02B	Metals High	52	57	C-18	PAH in Soil	52	54
C-03	TKN & TP	140	140	C-19	Mercury	88	80
C-04A	TSS	205	202	C-20	Asbestos	52	53
C-04B	BOD	156	153	C-21	Metals in Air	25	21
C-04C	Turbidity	93	88	C-22	OP Pesticides	60	61
C-04D	COD	85	87	C-23	OCl Pesticides	36	35
C-05	Coliforms	197	199	C-24	Aryloxy Acids	37	37
C-06	OCP/PCB	66	66	C-25	Phenolics	45	44
C-07	PAH	66	66	C-27	Glyphosate	15	17
C-08	PCB in Oil	55	49	C-28	Aromatic Org. in Air	17	17
C-09	Metals on Filters	31	23	C-29	Aldicarb	22	25
C-10	Major Ions on Filters	21	21	C-31A	BTEX soil	74	79
C-11	Trout LC ₅₀	23	21	C-31B	PHC soil	52	58
C-12	Daphnia LC ₅₀	21	21	C-32	Chlorine	46	51
C-13	Microtox LC ₅₀	31	30	Total		3023	2979

These changes were implemented for the October 2005 study. Included with the final reports was a participant satisfaction survey, soliciting feedback from the participants about the changes (see Figure 11). Six questions were asked about the new procedures and report format. Sixty-eight percent (68%) of respondents indicated that the changes were an improvement; twenty-one percent (21%) felt that the impact of the changes was neutral, and eleven percent (11%) felt that the changes made the program worse.

Alberta Alternate Program

In 2005, CAEAL coordinated two PT studies, and two follow-up PT studies, in support of Alberta Environment's Alternate Program. This program is directed towards process (operational) testing performed by water and wastewater operators, a sector of testing that, historically, has been under-served by quality assurance and quality control.

In March, PT samples were shipped to 94 facilities in southern Alberta. This was expanded to 194 facilities in southern and central Alberta for the September study and the January 2006 study, including all three regions of Alberta, will ship to 285 facilities.

Figure 9: Turn-around time for January and June Proficiency Testing Shipments

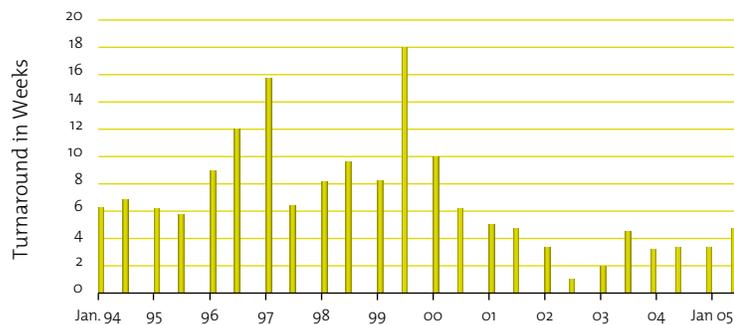


Figure 10: Turn-around time for March and October Proficiency Testing Shipments

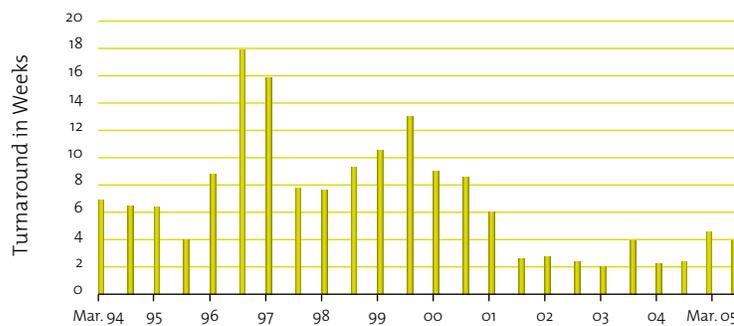


Figure 11: Participant satisfaction with changes in the Proficiency Testing Program

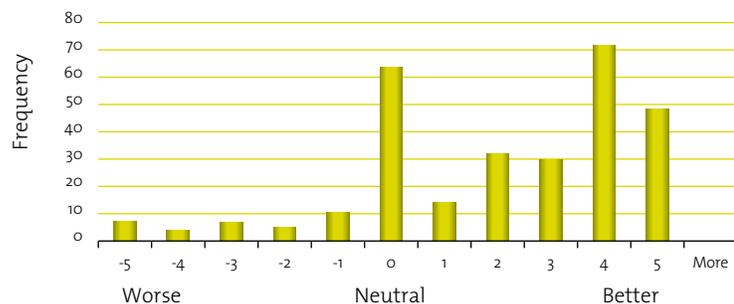


Table 5: Success rates for all laboratories participating in the January and June 2005 rounds

		% Successful	
Water (Organics)		January 2005	June 2005
Co6	OCP/PCB	88.3	87.5
Co7	PAH	88.1	88.6
C16	BTEX/THM/VOC	83.9	84.3
C22	OP Pesticides	88.3	81.9
C23	OCI Pesticides	91.0	89.0
C24	Aryloxy acid pesticides	83.7	86.8
C25	Phenolics	90.3	89.4
C27	Glyphosate	93.3	85.7
C29	Aldicarb	80.0	93.8
Oil			
Co8	Total PCB	80.8	93.9
Air Filter			
Co9	Metals on filters	90.9	84.7
C10	Major ions on filters	83.1	78.7
Soil/Sediment			
C17	Metals in soil	90.1	88.2
C18	PAH in soil	88.2	88.7
C31A	PHC/BTEX in soil	82.2	89.1
C31B	PHC in soil	84.8	84.7
OH			
C20	Asbestos	100	100
C21	Metals in air	83.5	94.3
C28	Aromatic organics in air	80.0	79.4

Table 6: Success rates for all laboratories participating in the March 2005 and October 2005 rounds

		% Successful	
Water (Inorganics)		March 2005	October 2005
Co1A	Major ions	84.3	87.6
Co1B	NH ₃ /PO ₄ /DOC	86.0	87.5
Co1C	Br/NO ₂	87.8	92.4
Co2A	Metals	75.6	87.7
Co2B	Metals (high range)	89.3	90.4
Co3	TKN/TP	83.4	86.7
Co4A	TSS	89.3	90.5
Co4B	BOD	89.9	86.9
Co4C	Turbidity	88.9	95.4
Co4D	COD	90.9	88.5
C14	CN	81.5	92.0
C15	pH	87.8	91.7
C19	Hg	81.8	84.0
C32	Chlorine	87.5	96.0
Water (Microbiology)			
Co5	Microbiology	88.9	90.7
Water (Toxicology)			
C11	Trout	95.2	77.3
C12	Daphnia	95.0	85.7
C13	Microtox	86.7	86.7
OH			
C20	Asbestos	100	71.4
C21	Metals in air	86.2	94.9

Table 7: Success rates for OSDWA laboratories participating in the January 2005 and June 2005 rounds

		No. of Tests	% Successful	No. of Tests	% Successful
Water (Organics)		January 2005		June 2005	
Co6	OCP/PCB	178	92.7	190	95.3
Co7	PAH	119	99.2	115	83.5
C16	BTEX/THM/VOC	379	91.8	357	94.1
C22	OP Pesticides	242	94.2	257	85.2
C23	OCI Pesticides	60	93.3	51	100.0
C24	Aryloxy acid Pesticides	98	84.7	105	94.3
C25	Phenolic Compounds	56	96.4	61	93.4
C27	Glyphosate	7	100.0	6	100.0
C29	Aldicarb	10	90.0	10	100.0

Table 8: Success rates for OSDWA laboratories participating in the March 2005 and October 2005 rounds

		No. of Tests	% Successful	No. of Tests	% Successful
Water (Inorganics)		March 2005		October 2005	
Co1A	Major Ions	315	96.8	288	96.9
Co1B	NH ₃ /PO ₄ /DOC	57	89.5	52	92.3
Co1C	Br/NO ₂	46	95.7	42	97.6
Co2A	Metals	583	91.9	511	94.3
Co2B	Metals (high range)	36	91.7	19	100.0
Co3	TKN/TP	49	91.8	45	95.6
Co4A	TSS	18	100.0	17	100.0
Co4B	BOD	12	100.0	10	100.0
Co4C	Turbidity	18	88.9	21	100.0
Co4D	COD	12	100.0	12	83.3
C14	Cyanide	15	93.3	14	100.0
C15	pH	28	92.9	30	96.7
C19	Mercury	18	94.4	16	87.5
C32	Chlorine	9	77.8	11	81.8
Water (Microbiology)					
Co5	Microbiology	197	98.0	206	93.2
Water (Toxicology)					
	Microtox	1	100.0	1	100.0

Training

Training Service Mission

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 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 APLAC/ILAC requirements for signatory status and accreditation as a proficiency testing provider under ILAC Guide 13; and
- Managing the marketing efforts associated with the CAEAL Training Service to recover all costs associated with training.

The CAEAL Corporate Strategic Plan sets the goal of ensuring the sustainable growth of the CAEAL Training group and the maintenance of 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 CAEAL training services;
- extending our training offerings beyond the CAEAL membership, nationally and internationally;
- turning training services into an autonomous operation; and
- ensuring that the most appropriate expertise is available for our training program.

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 CAEAL membership training requirements; and
- marketing CAEAL's Training Service capabilities to the membership.

Accomplishments in 2005

During 2005, the CAEAL Training Service planned and delivered 28 courses to 364 members and non-members. More online resources were used to deliver training to members, at significant reductions in overall program cost.

One hundred and forty two CAEAL assessors received biennial refresher training in CAEAL assessment processes and technical subjects, and sixty-two of them also completed a one-day Team Leader course. Twenty-two new CAEAL assessors underwent Lead Assessor training and completed the one-day new assessor course in early January 2006.

More options on the delivery of training became available with five online training courses available to members; this direction will be continued in 2006 (see Table 9).

Membership Satisfaction in 2005

Overall, members felt well served by offerings from the CAEAL Training Service. 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 well exceeded.

Most facilitators have maintained this passing grade over multiple sessions and members rated five facilitators as "excellent" overall, the same as last year. When members indicated a desire for different approaches in the delivery of training, the facilitators were informed and delivery was modified.

Nine staff and contracted training facilitators achieved an average satisfaction score of 82% (Excellent) in their delivery of 28 different training sessions.

Table 9: Achievement of 2005 Training Service Targets

Target	Achievement
Facilitate the transition of CAEAL to a fully recognized signatory of the APLAC and ILAC Mutual Recognition Arrangements.	CAEAL became a full Member of APLAC in March 2005 and a signatory to both the APLAC and ILAC arrangements on 17 November 2005.
Conduct biennial training of CAEAL assessors.	Delivered biennial training to 142 assessors and Team Leader training to 62 assessors.
Anticipate net loss (expenses including overhead allocations to exceed revenues) from training activities not to exceed \$34,000 caused by intense involvement in transitioning CAEAL to full international signatory of the APLAC and ILAC MRAs.	Net loss exceeded projections by approximately \$7,000 for 2005 as more expensive delivery methods were used to make up the shortfall in training service capacity during this transition year.
Obtain 60% attendance overall for all CAEAL sponsored training.	50% attendance was achieved as more focus was placed on online training.
Develop and deliver up to five online courses as a less expensive alternative to facilitated in-person training.	Completed target on 10 January 2006.

International

CAEAL tracks its international activities in two categories: those that provide services to international customers, and those that are undertaken to support CAEAL's signatory status in international mutual recognition agreements.

Mutual Recognition Agreements

CAEAL's Quality and Training Manager, Ned Gravel, continues to lead CAEAL's activities regarding the acceptance of Canadian laboratory results nationally and around the world. Several provincial regulatory agencies, such as Ontario and Nova Scotia now require this participation. CAEAL is now a signatory to two international mutual recognition agreements, and has continued to fulfil its responsibilities to operate in conformance with the appropriate international standards. Reports from international evaluations, including the latest one conducted by the Asia Pacific Laboratory Accreditation

Cooperation (APLAC) in 2005, invariably highlight the excellence of the CAEAL Quality System. Of note, CAEAL was the first accrediting body in APLAC to be evaluated successfully against the new international standard ISO/IEC 17011.

The outcome of a very focused activity in 2005 was the attainment of full signatory status within APLAC and the global International Laboratory Accreditation Cooperation (ILAC) on 17 November 2005. With these milestones achieved, all CAEAL-accredited laboratories are deemed to be producing results equivalent to the 50 accrediting body signatories from 40 countries in Africa, the Asia Pacific region, the Americas, Europe and the Middle East.

As part of its goal of ensuring that CAEAL laboratories have their opinions and concerns heard by those external organizations that can have

an impact on CAEAL programs, staff represented the CAEAL membership on the ILAC Laboratory Committee, the ILAC Accreditation Policy Committee, the ILAC Proficiency Testing Advisory Group, and the APLAC Proficiency Testing Committee. CAEAL also represented ILAC on the ISO committee responsible for ISO 9000, a responsibility which – after three years - has now passed to Sweden and the USA.

In this latter role, CAEAL has played a significant role in the international effort to prevent the laboratory standard from becoming a sector-specific application of ISO 9000 – something that would result in significant additional costs for accredited laboratories.

In 2005, CAEAL also conducted the internal audit for the APLAC Secretariat.

Services Provided Internationally

In 2005 CAEAL delivered proficiency testing and/or accreditation services to 27 laboratories located outside Canada, mostly in the rest of the Americas as shown in Figure 12. Other international activities included one contracted training event and one contracted evaluation of an accrediting body in the United States.

Figure 12: Distribution of 27 international laboratories receiving services from CAEAL



