

CANADIAN ASSOCIATION FOR ENVIRONMENTAL ANALYTICAL LABORATORIES INC.

# 2006 ANNUAL REPORT





Canadian Association for  
Environmental Analytical  
Laboratories Inc.

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## President's Report



Although it may have appeared all quiet on the front lines in comparison with the past few years, the Board of Directors and CAEAL staff were very busy throughout the past year with some notable events.

Dr. Rick Wilson (CEO), CAEAL staff and the Board of Directors were working on and towards:

- Meeting Needs of the Membership;
- International and National Recognition of CAEAL assessors, and CAEAL as a laboratory accreditation body;
- Policy Governance, changing the model by which the Board of Directors governs CAEAL, and the way the Board directs strategic and operational functions; and
- Strategic Planning for CAEAL – our future.

### Meeting the Needs of the Membership

Each year we encourage our membership to bring forward any concerns or recommendations to the Board of Directors or to the CAEAL program managers. This feedback is important

with respect to strategic planning, program improvements and overall development of our accreditation, proficiency testing and training programs. In 2006 the following projects were completed on behalf of our membership:

**Root Cause Training:** 146 members from nearly 100 laboratories registered for the Root Cause training offered throughout November 2006 in Halifax, Vancouver, Calgary, Waterloo, and Peterborough. Delivered free of charge to members by both Ken Middlebrook and Ned Gravel, the training allowed participants to focus on international best practice for the analysis of root causes leading to enduring corrective and preventive action.

**Satisfaction Survey:** As part of the new governance system, CAEAL undertook both a membership satisfaction survey and a survey of laboratory users. To assist in meeting this requirement and to encourage membership feedback, a satisfaction survey was sent out to our 408 Institutional Members that represented both our

private and public sector in addition to the large and small laboratories. It was found from the 128 responses that 88% of members were noted as “Satisfied” or “Very Satisfied” with the total package (programs, cost and level of service) delivered by CAEAL. The responses also indicated that 90% feel “Very Satisfied” or “Satisfied” with their recent customer service experience with CAEAL. These results provide us some feedback on our current service. This does not mean, however, that the CAEAL Board of Directors and staff will not continue to serve the membership, raising the bar to achieve the goal of 100% satisfaction.

**User survey:** The User survey found that both private users and government regulators have confidence in and trust data from CAEAL-accredited laboratories. The survey also showed that CAEAL and the labs must do more to increase the awareness of ISO/IEC 17025, to these government regulators, through the CAEAL web site and the directory of laboratories, and the link to ILAC.

**Biennial Assessor Training:** Assessors gathered from across Canada, Peru and Mexico for the biennial assessor training. The feedback was very positive on the workshops, speakers and accommodations as well as the information updates. Besides the training (anywhere from 2 to 5 days, depending on the specialty of the assessor), this is a time when our assessors who have had the opportunity to share an assessment or two can catch up with each other and share the experiences of the assessment process. Good friends are made over the years and the opportunity to share an evening and some good laughs is one of the better perks of being an assessor.

#### **International and National Recognition**

**RABQSA Scheme:** In January 2006, RABQSA International announced the introduction of CAEAL assessor certification, an industry specific laboratory assessor accreditation scheme that provides recognition to assessors engaged in Canadian laboratory

accreditation assessments based on ISO/IEC 17025. This is a great benefit to the CAEAL membership as CAEAL's assessors are internationally recognized as some of the strongest in the world. These assessors are listed on the RABQSA international register.

**ILAC-CAEAL Official Signing and Combined Mark:** On November 12, 2006 in Cancun, Mexico, CAEAL officially signed the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA). CAEAL satisfied the requirements of the MRA in November 2005 but was unable to sign officially until the joint annual meetings of ILAC and the International Accreditation Forum (IAF) in Cancun. We are also pleased that CAEAL-accredited laboratories are now able to use the ILAC-MRA mark in conjunction with the CAEAL accreditation symbol (called the “Laboratory Combined MRA Mark”) as recognition that CAEAL-accredited laboratories are indeed world-class.

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**CAEAL to host 2009 ILAC/IAF Annual Meetings in Vancouver:**

At the ILAC/IAF 2006 Joint General Assembly held in Cancun, Mexico in November 2006, ILAC and IAF both passed resolutions adopting Vancouver as the General Assembly site for 2009. The annual ILAC/IAF Joint General Assembly, and related Committee meetings, is a gathering of the organizations that accredit laboratories, product certification bodies, inspection bodies, and the registrars of quality and environmental management systems. As CEO, Dr. Rick Wilson has spent the past few months working with a small committee to start the planning for the event and selecting the organizational team. Updates on this prestigious event will be posted on the website.

**CAEAL and International Proficiency Testing:**

Proficiency testing in Canada has been a “hot” topic over the past year for many laboratories in respect to frequency and costs. CAEAL has been communicating with the Canadian Council of Independent Laboratories (CCIL) and on April 10,

2006, at the CCIL Spring Meeting in Toronto, Ken Middlebrook presented a paper on the CAEAL Proficiency Testing program. Ken addressed two main questions regarding the increase of PT fees and the narrowing of the PT limits. In November 2006 the CAEAL Board met with CCIL representatives and agreed to create a committee to investigate risk-based proficiency testing which will be a topic of discussion at the 2007 CAEAL Annual General Meeting.

During 2006 CAEAL was a leader in the international discussion of the frequency of proficiency testing that is required by ILAC accrediting bodies and, through the ILAC Laboratory Committee, helped conduct an international survey of current practices. The survey showed that ILAC accrediting bodies tend to require either the ILAC minimum (one round every four years) or one to two rounds per year. The ILAC minimum was first designed to address calibration laboratories rather than testing laboratories. The ILAC membership voted to review the

policy. The CAEAL Board has appointed Don Enns, a Board member of CAEAL, to represent CAEAL labs on the ILAC Laboratory Committee with a view to continue representing the interests of Canadian laboratories. We are confident that with this CCIL/CAEAL committee and the participation from Mr. Don Enns (CAEAL) on the ILAC Laboratory Committee, we will come to some decision on the best way to go forward.

CAEAL also sponsored, with Environment Canada, one of the largest international proficiency testing events ever conducted. The study was conducted on behalf of the Asia Pacific Laboratory Accreditation Cooperation (APLAC) and involved 114 laboratories from 33 countries.

**Policy Governance – Changing the Model of the Board of Directors**

CAEAL members may remember that in November 2005, the Board of Directors voted unanimously to adopt the Policy Governance Model as its form of governance. Therefore over

the past 12 months the CEO and the Board of Directors have been working on the Policy Governance Manual, a living document that enables the board to focus on the larger issues, to delegate with clarity, to control management's job without micromanaging, to thoroughly evaluate the accomplishment of the organization and therefore truly lead the organization.

In order to keep the Board of Directors current and active in directing the organization, training for policy governance for new Board members in addition to a refresher for "old" members will occur annually after the AGM. As prelude for an education item at each Board meeting, the Task Group will conduct a self-evaluation of Board member competencies, which the Task Group would then use to design a training program. The Task Group also liked the idea of a paper version of the Board education manual that would operate by distributing pre-punched paper copies of educational papers identified by the Task

Group, and a "champion" of that paper then leading a brief overview/discussion at the following Board meeting.

The Policy Governance Manual is one of the most important documents of CAEAL aside from the CAEAL By-laws and the Letters Patent. A copy of CAEAL's Policy Governance Manual is located on the CAEAL website. I encourage all of you to review and direct your questions and concerns about this process to any member of the Board or CEO of CAEAL as we would be more than pleased to walk you through it.

#### **Strategic Planning for CAEAL**

**Brand Audit:** A brand audit was conducted to start the renewal of CAEAL's strategic plan. The audit found that CAEAL is perceived as responsive, ethical and efficient with good communication with its members, but also pointed to a need to revise the web site and to communicate more broadly beyond current CAEAL members. In

addition to the branding of CAEAL, the Board of Directors and CEO are considering different strategies for the growth and development of CAEAL, now that it has achieved the recognition of an International Accrediting Body.

In 2006 we expanded our scope of accreditation outside of environmental testing and into the minerals testing area. CAEAL incorporated a minerals workshop into the Assessor training held in Ottawa during March 2007.

**Financial Planning:** During the past year the CAEAL Board of Directors conducted a major review of the Association's finances and recently approved a 5-year financial plan that includes many fee changes for 2007:

- overall PT fees reduced by 3%;
- all PT application fees eliminated; and
- a 2-tier system for PT fees was introduced that reduces the PT costs within the accreditation stream.



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## Summary

In summary you can see that we have had quite a year on all fronts. It has been a pleasure to have been the President over the past year, although I must admit that it can be very challenging at times. This role under the Policy Governance Model is quite different than in past years; the new system requires the entire Board to participate equally in all decisions. The major challenge was adapting to the new model.

We had some new members join the Board this year (Francois Dumouchel and Paul Fewer) and, with regrets, we have either already lost or will be losing Paul and three others (John

Fenwick, Jacinthe Leclerc, and Chris Pharo). Thank you Paul, John, Jacinthe, and Chris for your contributions over the years, we will miss you.

On behalf of the Board of Directors, I would like to thank all the CAEAL staff for their well-executed programs over the past year. I believe we are very fortunate to have such an experienced and knowledgeable CEO leading this organization. Dr. Rick Wilson has made every effort to expose CAEAL to the international environment and has succeeded, with the assistance of the program managers, in making CAEAL a highly respected accrediting body. I also want to extend our appreciation to all the vol-

unteers of CAEAL, the advisory panel, the program committee, the accreditation council, my fellow directors and assessors. CAEAL stands strong and is both highly respected and recognized because of you.

Deborah Masson Stogran  
President of CAEAL



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## Board of Directors

### **President**

Ms. Deborah Masson-Stogran  
SGS Lakefield  
Lakefield, ON

### **Vice President**

Mr. James Doull  
Environment Canada  
Moncton, NB

### **Secretary**

Mr. Erv Callin  
ALS Environmental  
Edmonton, AB

### **Treasurer**

Dr. John Lawrence  
Environment Canada  
Burlington, ON

### **Past President**

Dr. Wo Yuen  
Saskatchewan Research Council  
Saskatoon, SK

Mr. Francois Dumouchel  
(since July 2006)  
Environment Canada  
Montréal, QC

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

Mr. Don Enns  
CANTEST Ltd.  
Burnaby, BC

Dr. John Fenwick  
(until September 2006)  
Montréal, QC

Mr. Paul Fewer  
(since April 2006)  
Maxxam Analytics Inc.  
Bedford, NS

Ms. Michèle J. Giddings  
Health Canada  
Ottawa, ON

Mr. Peter Haulena  
Accutest Laboratories  
Ottawa, ON

Ms. Jacinthe Leclerc  
(until May 2006)  
Environment Canada  
Montréal, QC

Dr. Chris Pharo  
Environment Canada  
North Vancouver, BC



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## Corporate Profile

*The Canadian Association for Environmental Analytical Laboratories Inc. (CAEAL) is a member-owned laboratory accrediting body that also provides related products and services.*

CAEAL Board of Directors  
June 2005

### History

CAEAL was established in 1989 to help Canadian environmental laboratories conform to internationally accepted standards of competence and proficiency. It did this by developing an accreditation program based on assessment of a laboratory's quality management system, coupled with evaluation of analytical capability determined through proficiency testing.

Between 1994 and 2004, CAEAL operated in partnership with the Standards Council of Canada, an arrangement in which CAEAL undertook all site assessments of environmental laboratories, conducted the proficiency testing program, and made recommendations to

the Standards Council on the accreditation of the laboratories.

In 2005 CAEAL resumed granting accreditation independently for over 150 laboratories, while also maintaining a partnership arrangement as described above with the Standards Council of Canada and Ontario Ministry of Environment, specifically for the accreditation of laboratories conducting tests under the Ontario Safe Drinking Water Act (OSDWA). In November 2005 the CAEAL accreditation program was officially recognized by the Asia Pacific Laboratory Accreditation Cooperation (APLAC) and the International Laboratory Accreditation Cooperation (ILAC).

In mid-2006 CAEAL started to operate according to the Policy Governance model in which the Board of Directors focuses on linkages with the membership and policies that steer and monitor staff performance. The ultimate goal for the organization, defined by the Board of Directors, is that:

- *CAEAL accredited laboratories are recognized as meeting world-class*

*levels of scientific and management excellence.*

A series of subordinate policies focus on benefits for both the laboratories and the users of laboratory data, and ensure that members' views are known to regulatory and standards-related decision makers in Canada and internationally.

### Membership

At the beginning of 2006 there were 637 members of CAEAL as shown in Table 1, representing an increase of 3.6% from 2005.

### We Learned About The Organization

During 2006 we conducted several surveys that would help us determine how well we are achieving our objectives and to help us determine future directions:

- a satisfaction survey was directed at our 408 institutional members;
- members assisted us in conducting a survey of their clients and regulators; and
- we hired a consulting company to conduct a brand audit.

We found that:

- Membership satisfaction is very high; 88% of respondents indicated they are “Satisfied” or “Very Satisfied” with the total package delivered by CAEAL (including programs, cost and level of service).
- CAEAL members have a very high opinion of CAEAL and they perceive CAEAL to be responsive, ethical and efficient with well-qualified staff.
- Communication with members is perceived to be good, though the web site is considered difficult to navigate, and it is apparent that we must do more to communicate the CAEAL mission to members.
- Both private users and government regulators are aware of CAEAL, are aware of the major elements of accreditation (i.e. proficiency testing and site assessments), have confidence in and trust the data—indeed even prefer data—from CAEAL-accredited laboratories.
- About half of users are unaware of CAEAL’s international recognition, are unaware of the ISO/IEC 17025 standard, and most (especially in

**Table 1:** Components of the CAEAL membership

Type	Private Sector	Public Sector	Independent	Total
Institution	272	123	–	395
Individual	77	107	44	228
Associate	9	5	–	14
<b>Total</b>	<b>358</b>	<b>235</b>	<b>44</b>	<b>637</b>

the private sector) are neither aware of the web-site Directory of Laboratories nor have they visited the web site.

- About 40% of users have seen one of the standard “CAEAL accredited” statements on test reports, but fewer than 5% have seen the CAEAL Accreditation Symbol and/or the joint ILAC-CAEAL mark.
- Both the Member Satisfaction Survey and the Brand Audit found that members favour extending CAEAL’s accreditation program into other disciplines such as food, agriculture, research and medical testing, however the Brand Audit found that there is a widely held perception that the CAEAL name does not scale beyond environmental testing.

As a result of these findings, the CAEAL Board will ask the membership at the 2007 Annual General Meeting to approve a change to the Letters Patent that will allow CAEAL to broaden its programs beyond environmental testing and to include testing facilities other than laboratories.

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## Financial Report

### Management Discussion and Analysis

CAEAL began its fiscal year in a strong financial position that continued throughout the year. All programs exceeded budgeted revenues by an overall rate of 6 per cent. In turn, program and operating expenses were again managed very conservatively and declined by 4 per cent as compared to budget. This resulted in an excess of revenue over expenditures for the year of \$338,438, a very successful year for CAEAL and its members.

### Balance Sheet

CAEAL's net working capital at December 31, 2006 is \$377,147. This working capital is within the boards' approved policy and adequately permits the Association to continue its effective operations into the future and plan for broadening the scope of its accreditation program.

Temporary investments are purchased with surplus funds in excess of normal daily requirements to provide higher than standard bank interest rates that can be liquidated at any time.

The decrease in capital assets reflects the net expenditure for acquired computers, equipment, furniture and fixtures during the year less amortization.

Accounts payable and accrued liabilities increased due to the timing of payments to suppliers.

### Statement of Operations

**Revenue:** Evaluations revenue increased to \$3,033,273 for a 13 per cent increase over last year. The addition of new proficiency testing test groups yielded most of this revenue growth.

Interest and sundry income increased 97 per cent due to interest earned from the additions to temporary investments.

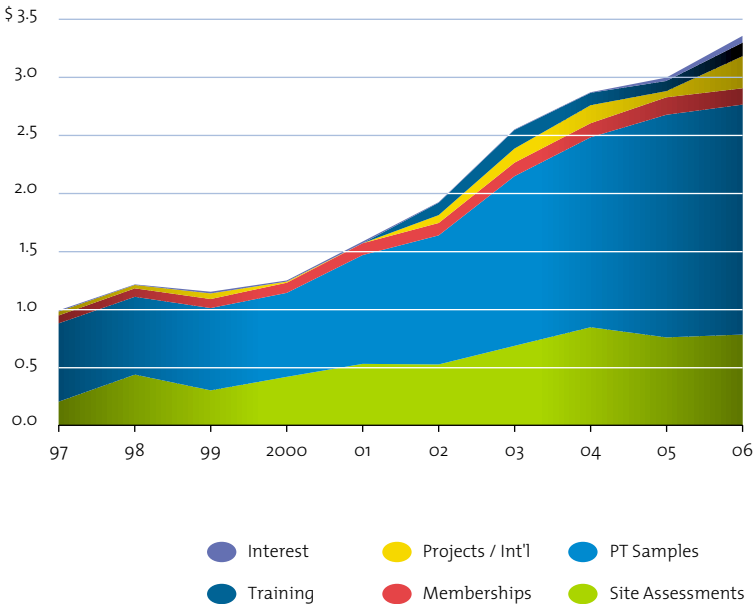
**Expenditures:** Total expenditures increased by 4 per cent to \$3,033,626. The increases in program-related expenditures were minor in the relation to the growth in revenue.

Administration expenditures totalled \$447,989, a 31 per cent increase from the previous year. Significant increases were experienced in consulting fees, marketing and office rent. CAEAL engaged the services of an external marketing firm to conduct a brand audit to analyze the status quo of its current brand identity. In addition, CAEAL hired consultants to assist in the preparation of a business continu-

ity plan. Office rent expenditures increased considerably as in February 2006 CAEAL began paying market rate for the leasing of its premises as the sub-lease agreement had then expired. Marketing expenses were higher than in the previous year as a result of CAEAL Sponsorship at the 2006 EnviroAnalysis and Canadian Water and Wastewater Conferences.

CAEAL continues to benefit greatly from the generous contribution made by all of its volunteers which allows us to put together such successful programs. Note that the economic value of volunteer time is not captured in our financial statements.

Figure 1: 1997–2006 Revenue Trend (millions of dollars)





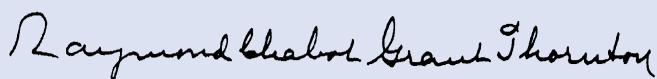
## Auditors' Report on Summarized Financial Statements

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, 2006 and for the year then ended on which we expressed an opinion without reservation in our report dated January 19, 2007. 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  
Licensed Public Accountants

Ottawa, Canada  
May 10, 2007

## Summarized Statement of Operations

Year ended December 31, 2006

	<b>2006</b>	<b>2005</b>
	<b>\$</b>	<b>\$</b>
<b>Revenue</b>		
Evaluations	3,033,273	2,683,043
Interest and sundry income	58,688	29,790
Memberships	153,376	149,485
Projects	11,232	55,873
Training	115,497	87,568
	<b>3,372,066</b>	<b>3,005,759</b>
<b>Expenses</b>		
Evaluations	1,468,693	1,425,111
Operational	1,523,888	1,393,808
Projects		38,035
Training	41,047	47,454
	<b>3,033,628</b>	<b>2,904,408</b>
<b>Excess (deficiency) of revenue over expenses</b>	<b>338,438</b>	<b>101,351</b>

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

## Summarized Statement of Cash Flows

Year ended December 31, 2006

	2006	2005
	\$	\$
<b>OPERATING ACTIVITIES</b>		
Excess (deficiency) of revenue over expenses	338,438	101,351
Non-cash items		
Amortization of capital assets	31,614	24,140
Gain on disposal of capital assets		(595)
Gain on disposal of investments	(14,594)	
Invested revenues reinvested	(15,761)	
Changes in working capital items	194,851	544,762
Cash flows from operating activities	534,548	669,658
<b>INVESTING ACTIVITIES</b>		
Purchase of investments	(1,828,632)	(701,281)
Redemption of investments	1,373,278	100,000
Acquisition of capital assets	(15,776)	(8,315)
Proceeds on disposal of capital assets		595
Cash flows from investing activities	(471,130)	(609,001)
<b>Net increase in cash</b>	<b>63,418</b>	<b>60,657</b>
Cash, beginning of year	369,323	308,666
Cash, end of year	432,741	369,323

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

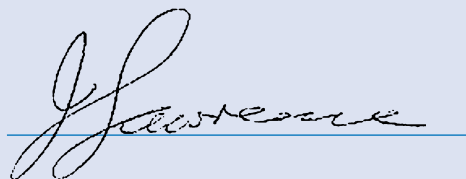
## Summarized Statement of Financial Position

December 31, 2006

	2006	2005
	\$	\$
<b>ASSETS</b>		
Current assets		
Cash	432,741	369,323
Temporary investments	843,834	278,139
Accounts receivable	318,978	270,320
Prepaid expenses	61,266	65,486
	<b>1,656,819</b>	983,268
Long-term investments	<b>551,441</b>	631,426
Capital assets	<b>50,152</b>	65,990
	<b>2,258,412</b>	1,680,684
<b>LIABILITIES</b>		
Current liabilities		
Accounts payable and accrued liabilities	<b>664,141</b>	391,372
Deferred revenues	<b>615,531</b>	649,010
	<b>1,279,672</b>	1,040,382
<b>NET ASSETS</b>		
Invested in capital assets	<b>50,152</b>	65,990
Unrestricted	<b>928,588</b>	574,312
	<b>978,740</b>	640,302
	<b>2,258,412</b>	1,680,684

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

On behalf of the Board



Director



Director

## Accreditation Program

### The CAEAL Accreditation Council

Dr. Adrian Demayo, Chair  
Ottawa

Ms. Linda Crawford, Vice-Chair  
QMP-LS, Toronto

Mr. Edgardo Alvarez  
Department of National Defence,  
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

CAEAL laboratory accreditation is based on ISO/IEC 17025 and is one of 57 programs world-wide (as at March 2007) that have been officially recognized as full signatory members of the International Laboratory Accreditation Cooperation.

By the end of 2006, 171 labs were participating in the CAEAL accreditation stream and CAEAL had granted accreditation to a total of 167 laboratories. During the year, CAEAL granted accreditation for the first time to 16 laboratories while 8 laboratories withdrew from the program (4 of these stayed in the proficiency testing program).

A separate tripartite agreement between the Ontario Ministry of Environment, the Standards Council of Canada (SCC), and CAEAL exists for SCC accreditation of drinking water testing under the *Ontario Safe Drinking Water Act*. 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 ISO 9000:2000 (Lead Auditor) course and participate in CAEAL-specific training once every 2 years. There are currently 151 active assessors and they represent an invaluable resource for CAEAL that sets our program apart from most others.

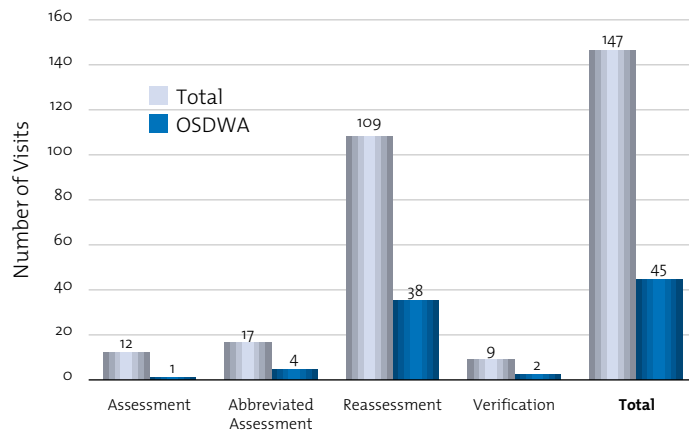
The process to attain and maintain accreditation is as follows:

- An assessment is carried out against criteria listed in ISO/IEC 17025 – *General Requirements for the Competence of Testing and Calibration Laboratories*;
- The laboratory receives a report of assessment findings;
- Laboratories undergoing reassessments have 45 days to undertake

corrective actions, while new laboratories are given 6 months;

- A laboratory’s response to the findings is reviewed by CAEAL staff, the Lead Assessor, and Advisory Panel members;
- The Advisory Panel recommends to the CAEAL Accreditation Council whether to grant or maintain a laboratory’s accreditation;
- When the Accreditation Council is satisfied that the appropriate corrective actions have been undertaken, CAEAL either grants the accreditation directly if the laboratory has applied for CAEAL accreditation, or in the case of Ontario drinking water testing, the recommendation to grant or maintain accreditation is forwarded to the SCC’s Director of Conformity Assessment for accreditation.
- In all cases, laboratories must participate successfully in proficiency testing.

**Figure 2: Categories of Site Visits Conducted in 2006**



**Site Visits**

In 2006 CAEAL conducted a total of 147 site visits (approximately the same as in 2004), of which 45 (31%) were conducted at laboratories licensed under the OSDWA (see Figure 2).

CAEAL conducts the following types of laboratory assessments:

- **Initial Assessment:** A site visit conducted at 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.

- **Reassessment:** The first reassessment is carried out one year after an initial assessment and every two years thereafter.
- **Verification:** A site visit to confirm implementation of corrective actions or to ensure satisfactory conditions following significant changes at a laboratory.

### Assessors

As mentioned earlier, CAEAL had 151 active volunteer assessors at the end of 2006, drawn primarily from public and private sector laboratories (see Figure 3). Twenty-nine of these are drawn from the 57 laboratories accredited and licensed under the OSDWA.

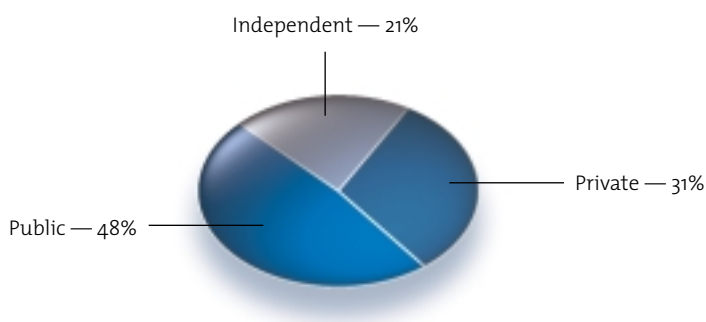
A total of 247 assessor trips were conducted to complete the total of 147 assessments. The actual assignments would range from a single experienced assessor to conduct re-assessments at small laboratories, to several assessors required to conduct the re-assessment of a large laboratory with a complex scope of testing.

### Turn-around Time

Table 2 shows a breakdown of the major steps in the accreditation process, and the average time taken to complete each step during the past three years. Two items are noteworthy about 2006:

- 1) laboratories were required to provide CAEAL with responses to their assessment report within 45

**Figure 3:** Sources of CAEAL Volunteer Assessors



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

Step in the Accreditation Process	2004	2005	2006
<b>Laboratory Response</b>			
– Assessments	149	136	153
– Re-assessments	88	89	45
<b>Completion of Staff Review of Laboratory Responses</b>			
Advisory Panel/Lead Assessor Review	24	19	17
<b>CAEAL Board (2004) or Accreditation Council (2005 &amp; 2006) Approval</b>			
From CAEAL approval to SCC Accreditation decision	9	35**	44**

\* 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 and 2006 was for OSDWA Licensed laboratories only.

days rather than 90 days, and Table 2 indicates that they accomplished the tighter timeline; and

- 2) CAEAL staff dramatically reduced the time taken to review the laboratory responses. During 2005 CAEAL established a target of a maximum of 45 days for this review; in 2006, the first full year in which the new target was in effect, the average was 30 days and 87% were completed within the 45 day target; 99% were done in less than 56 days (see Figure 4).

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

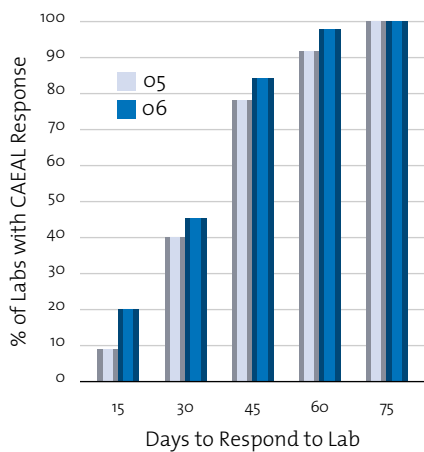
- fails to successfully analyze two successive sets of proficiency testing (PT) samples for a specific test (parameter);
- does not submit a satisfactory Corrective Action Report in response to a PT failure.

Table 3 indicates that the pattern reported in previous years was repeated in 2006: the non-accredited laboratories experienced the highest overall rate of suspensions while the accredited OSDWA laboratories experienced the lowest rate.

The summary of suspensions shown in

### Suspensions and Withdrawals

**Figure 4:** 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 (2006)	Non-Accredited	All Accredited	Accredited OSDWA
January	1.73%	0.99%	0.63%
March	3.09%	0.58%	0.46%
June	1.92%	0.68%	0.18%
October	1.50%	0.69%	0.61%
<b>Overall Average</b>	<b>2.15%</b>	<b>0.73%</b>	<b>0.47%</b>

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



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## Proficiency Testing Program

In 2006 the CAEAL Proficiency Testing (PT) Program offered 40 test groups, comprising 216 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](http://www.caeal.ca).

### **New Test Groups**

Four new test groups were added in 2006:

- C02C Total Metals
- C05B Microbiology by Presence/Absence
- C33 Total Phenolics
- C34 Total Oil and Grease.

In addition, the following changes were made to existing test groups:

- C23 and C06 were combined into a single OC Pesticide test group, and
- C04A was expanded to include Total Dissolved Solids and Volatile Suspended Solids.

### **Tendering for PT Collaborators**

As a result of a 2005 tendering exercise, new contracts were awarded to the National Laboratory for Environmental Testing (NLET), Maxxam Analytics and Wibby Environmental for the production and shipping of PT samples. The contract with Wibby Environmental marks the first time that CAEAL has gone outside of Canada for these services, although firms from the United States have been invited to bid on contracts for several years.

**Participation**

Participation showed a marginal increase in 2006 (see Figure 5). This increase was due to the addition of four new test groups rather than an overall increase in participation. Participation levels for each test group are indicated below in Table 4.

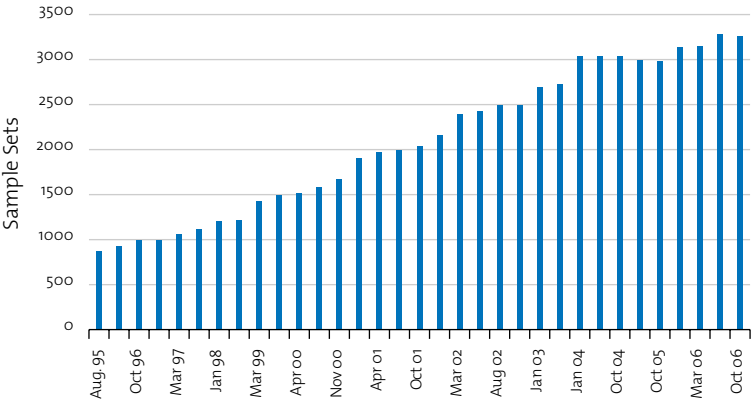
**Turn-around Times**

CAEAL strives to return PT results to member laboratories within time-frames that enable the laboratories to undertake corrective actions in a timely manner. All reports in 2006 were issued within the five week target for report turnaround (see Figures 6 and 7).

**Summary of Proficiency Testing Performance**

Appendix A details the success rates observed for each test group in each study. Also detailed are the success rates for Ontario licensed laboratories (OSDWA). In general, success rates ranged from approximately 85% to 100%, consistent with those observed in previous years.

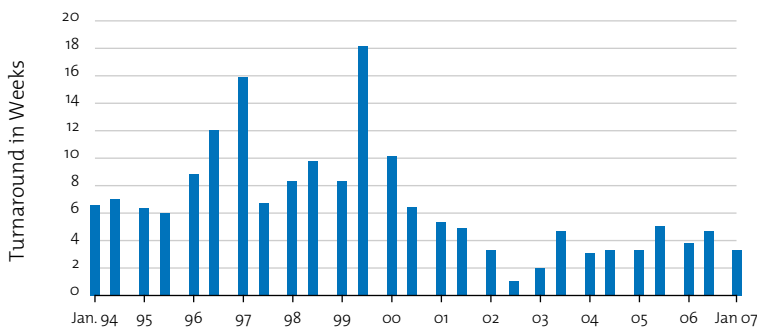
**Figure 5:** PT Registration Trend in the Proficiency Testing Program (sample sets = total number of registered test groups)



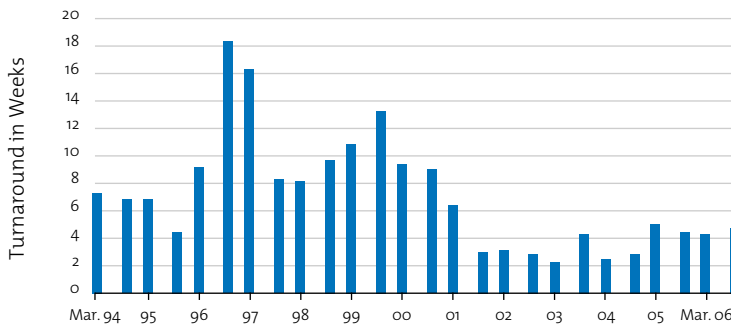
**Table 4:** Participation in Each Test Group of the CAEAL Proficiency Testing Program

Group No.	Group	Sample Sets Per Study			Group No.	Group	Sample Sets Per Study		
		2004	2005	2006			2004	2005	2006
C-01A	Major Ions	271	252	261	C-14	CN (SAD)	50	50	50
C-01B	NH <sub>3</sub> , o-PO <sub>4</sub> , DOC	149	148	159	C-15	pH	223	216	218
C-01C	Bromide/Nitrite	91	91	97	C-16	BTEX/THM	103	105	114
C-02A	Metals Full	175	166	177	C-17	Metals in Soil	98	96	101
C-02B	Metals High	52	57	57	C-18	PAH in Soil	52	54	56
C-02C	Total Metals	NA	NA	80	C-19	Mercury	88	80	83
C-03	TKN & TP	140	140	144	C-20	Asbestos	52	53	61
C-04A	TSS	205	202	207	C-21	Metals in Air	25	21	18
C-04B	BOD	156	153	148	C-22	OP Pesticides	60	61	62
C-04C	Turbidity	93	88	93	C-23	OCI Pesticides	36	35	NA
C-04D	COD	85	87	88	C-24	Aryloxy Acids	37	37	39
C-05A	Coliforms	197	199	211	C-25	Phenolics	45	44	41
C-05B	Coliforms (pres/abs)	NA	NA	48	C-27	Glyphosate	15	17	14
C-06	OCP/PCB	66	66	66	C-28	Aromatic Org's in Air	17	17	14
C-07	PAH	66	66	68	C-29	Aldicarb	22	25	29
C-08	PCB in Oil	55	49	48	C-31A	BTEX soil	74	79	84
C-09	Metals on Filters	31	23	21	C-31B	PHC soil	52	58	63
C-10	Major Ions on Filters	21	21	17	C-32	Chlorine	46	51	54
C-11	Trout LC50	23	21	25	C-33	Total Phenolics	NA	NA	41
C-12	Daphnia LC50	21	21	21	C-34	Total Oil and Grease	NA	NA	56
C-13	Microtox IC50	31	30	29	<b>TOTAL</b>		<b>3023</b>	<b>2979</b>	<b>3263</b>

**Figure 6:** Turn-around time for January and June Proficiency Testing Shipments



**Figure 7:** Turn-around time for March and October Proficiency Testing Shipments



**Alberta Alternate Program**

In 2006, 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 285 facilities with 105 facilities being involved in the June follow-up study. Samples were shipped to 291 facilities in September and 112 in the November follow-up study.

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## 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 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 Governance process has established the set of goals for ensuring the sustainable growth of the CAEAL Training program and the maintenance of a leading edge focus by:

- continuing use of information technologies to support training service operations;
- identifying future member training needs and preparing to meet them;
- increasing the marketing of CAEAL training services;
- extending training offerings beyond the CAEAL membership, nationally and internationally;
- turning training services into an autonomous operation; and
- continuing to use only the most appropriate expertise for training offered.



### ***Training Service Mission***

*CAEAL will deliver cost effective and reputable training to meet identified member needs and in support of CAEAL programs.*

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; and

- marketing CAEAL's Training Service capabilities to the membership, and internationally.

**Table 5:** Achievement of 2006 Training Service Targets

Target	Achievement
Develop and deliver up to eight online courses as a less expensive alternative to facilitated in-person training.	Completed in October 2006.
Maintain participant satisfaction levels at or above 70%.	The five training facilitators achieved an average satisfaction score of 80% (Excellent) in their delivery of 34 different training sessions.
Transition all training materials to the 2005 version of ISO/IEC 17025.	The final course to reflect the changes was completed in December 2006.
Increase use of CAEAL training by non-member organizations and international partners.	Nine percent of all participants were from non-member organizations or international partner organizations.

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### **Accomplishments in 2006**

During 2006, the CAEAL Training Service planned to deliver in-class 38 courses; 8 of these were cancelled from lack of registration and 4 unplanned courses were delivered in their stead. Overall, CAEAL Training Service delivered 34 courses to 409 participants in class, a 12% increase in participation over last year. Another 157 participants received training in 38 separate online sessions bringing the total participation to 566 participants, a 56% increase over the previous year.

As anticipated from the inception of online training, a quarter (27%) of all participation in CAEAL Training is now online. Three new online courses were added to the stable of online offerings and nearly all current training offerings are now available to members as in-class training, online training, or they can simply purchase

the training materials in a binder. For the first time since CAEAL commenced offering publications for sale, these now include nearly all training courses.

### **Looking Forward to 2007**

After six years of development and delivery, the use of CAEAL training by members has stabilized. As predicted from available marketing information, up to 30 training sessions delivered to members across Canada will have sufficient registration to be viable. Based on membership demographics, one sixth can be delivered in each of Halifax, Calgary, Vancouver and Ottawa, and one third must be delivered in Toronto.

Stability and long-term notice-to-members is required to sustain this level of member use. CAEAL Training Service now publishes

(on [http://www.caeal.ca/t\\_sched.html](http://www.caeal.ca/t_sched.html)) an entire year of planned dates and venues – an approach that will continue. The options available are shown on [http://www.caeal.ca/t\\_CAEAL\\_training\\_options.pdf](http://www.caeal.ca/t_CAEAL_training_options.pdf) and [http://www.caeal.ca/t\\_caeal\\_training\\_flow.pdf](http://www.caeal.ca/t_caeal_training_flow.pdf) contains the suggested flow of CAEAL Training.

In order for the overall program to be viable, 5 to 10 more training sessions must be delivered to non members in Canada and internationally. As international participation grows, the diversity of training offerings will also grow to meet changing member needs.





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## 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 arrangements.

### **Mutual Recognition Arrangements**

CAEAL's continues to participate in activities to ensure 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 a signatory to two international mutual recognition agreements (the Asia Pacific Laboratory Accreditation Cooperation – APLAC – and the International Laboratory Accreditation Cooperation – ILAC) that provide global recognition of CAEAL accreditation by 57 accrediting bodies in more than 40 countries.

CAEAL is an active participant in these two international organizations, for example providing staff to participate in international evaluations of other accrediting bodies (CAEAL staff were on two evaluation teams in 2006) and participating in meetings of both APLAC and ILAC to ensure that CAEAL is not only aware of new developments but is active in their formulation.

During 2006 Ned Gravel was appointed the Evaluator Training Coordinator for APLAC and, at ILAC, CAEAL prompted an international discussion of proficiency testing frequencies as a result of an issue raised by Canadian laboratories. CAEAL also delivered, in partnership with Environment Canada's National Laboratory for Environmental Testing (NLET), a major international proficiency testing event (metals in water) for APLAC. Samples were shipped in October 2006 to 119 laboratories in

**Figure 8:** General locations of 114 laboratories from 33 countries that participated in the international APLAC proficiency testing study hosted by CAEAL and Environment Canada.

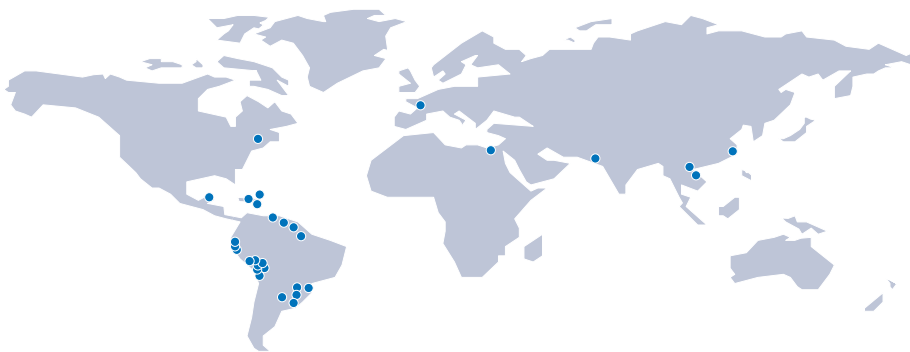


33 countries and results were reported for 114 laboratories, including nine from Canada (world-wide distribution is illustrated in Figure 8). The study was completed in November 2006.

**Services Provided Internationally**

In 2006 CAEAL delivered proficiency testing and/or accreditation services to 31 laboratories located outside Canada (an increase of four from 2005), mostly in the rest of the Americas as shown in Figure 9. Six of these are in the accreditation program and 25 are in the proficiency testing program.

**Figure 9:** Distribution of 31 international laboratories receiving services from CAEAL



CAEAL's international activities in 2006 included a second year of interaction with the National Institute for Environmental Research (NIER) from Korea. In June, 16 NIER staff visited the CAEAL offices, undertook training, and toured a Canadian lab, as part of an agreement with CAEAL.

## Appendix A

### Summary of Proficiency Testing Performance

The following tables provide details of success rates for each test group. The first two (Tables A1 and A2) reflect the entire program, while the last two (Tables A3 and A4) are for laboratories licensed by the Ontario Ministry of Environment under the Ontario

Safe Drinking Water Act. Note that non-reported results are not included among the failures in these estimates as these are sometimes related to registration changes after the study has started.

**Table A1:** Success rates for all laboratories participating in the January and June 2006 rounds.

		% Successful	
<b>Water (Organics)</b>		<b>January 2006</b>	<b>June 2006</b>
Co6	OCP/PCB	96.3	94.9
Co7	PAH	95.7	94.4
C16	BTEX/THM/VOC	93.7	92.8
C22	OP Pesticides	94.7	94.1
C24	Aryloxy acid pesticides	96.4	95.2
C25	Phenolics	94.2	95.0
C27	Glyphosate	92.3	100
C29	Aldicarb	88.2	100
C34 (pilot)	Total Oil and Grease	95.2	90.6
<b>Oil</b>			
Co8	Total PCB	89.6	97.9
<b>Air Filter</b>			
Co9	Metals on filters	89.2	90.4
C10	Major ions on filters	93.3	94.6

APPENDIX A

Table A1: Continued from page 33

		% Successful	
Soil/Sediment		January 2006	June 2006
C17	Metals in soil	93.3	93.4
C18	PAH in soil	89.2	92.6
C31A	PHC/BTEX in soil	95.3	97.2
C31B	PHC in soil	94.4	94.1
<b>OH</b>			
C20	Asbestos	91.0	81.0
C21	Metals in air	95.2	84.5
C28	Aromatic organics in air	84.4	92.9

Table A2: Success rates for all laboratories participating in the March 2006 and October 2006 rounds.

		% Successful	
Water (Inorganics)		March 2006	October 2006
Co1A	Major ions	92.4	91.2
Co1B	NH <sub>3</sub> /PO <sub>4</sub> /DOC	91.8	93.1
Co1C	Br/NO <sub>2</sub>	95.4	91.2
Co2A	Metals	93.9	93.0
Co2B	Metals (high range)	94.2	88.8
Co2C (pilot)	Total Metals	94.2	93.5
Co3	TKN/TP	89.2	90.0
Co4A	TSS	92.8	89.8
Co4B	BOD	95.6	93.0
Co4C	Turbidity	97.7	97.8
Co4D	COD	96.3	90.9
C14	CN	88.9	92.0
C15	pH	95.0	96.3
C19	Hg	97.4	93.6
C32	Chlorine	98.1	92.5
C33 (pilot)	Total Phenolics	81.6	82.1

**Table A2:** Continued from page 34

		% Successful	
<b>Water (Microbiology)</b>		<b>March 2006</b>	<b>October 2006</b>
C05A	Microbiology	95.8	94.4
C05B (pilot)	Microbiology P/A	92.5	94.7
<b>Water (Toxicology)</b>			
C11	Trout	100	90.1
C12	Daphnia	100	95.2
C13	Microtox	93.1	92.6
<b>OH</b>			
C20	Asbestos	78.0	90.0
C21	Metals in air	93.8	96.9

**Table A3:** Success rates for OSDWA laboratories participating in the January 2006 and June 2006 rounds.

		No. of Tests	% Successful	No. of Tests	% Successful
<b>Water (Organics)</b>		<b>January 2006</b>		<b>June 2006</b>	
C06	OCP/PCB	219	99.1	245	97.1
C07	PAH	98	100	98	99.0
C16	BTEX/THM/VOC	340	96.5	340	99.4
C22	OP Pesticides	269	95.2	269	96.7
C24	Aryloxy acid Pesticides	105	96.2	105	99.
C25	Phenolic Compounds	57	98.2	56	96.4
C27	Glyphosate	6	100	6	100
C29	Aldicarb	12	91.7	12	100
C34 (pilot)	Total Oil and Grease	5	100	6	100

APPENDIX A

**Table A4:** Success rates for OSDWA laboratories participating in the March 2006 and October 2006 rounds.

		No. of Tests	% Successful	No. of Tests	% Successful
<b>Water (Inorganics)</b>		<b>March 2006</b>		<b>October 2006</b>	
Co1A	Major Ions	284	96.4	300	96.7
Co1B	NH <sub>3</sub> /PO <sub>4</sub> /DOC	55	89.1	61	96.7
Co1C	Br/NO <sub>2</sub>	41	95.1	44	93.2
Co2A	Metals	524	93.1	518	95.2
Co2B	Metals (high range)	19	100	20	100
Co2C (pilot)	Total Metals	166	91.0	198	96.0
Co3	TKN/TP	44	86.4	45	97.8
Co4A	TSS	29	93.1	31	87.1
Co4B	BOD	10	100	9	100
Co4C	Turbidity	20	100	21	95.2
Co4D	COD	11	90.9	11	100
C14	Cyanide	13	84.6	15	100
C15	pH	29	100	30	96.7
C19	Mercury	17	100	15	93.3
C32	Chlorine	11	100	11	100
C33 (pilot)	Total Phenolics	12	83.3	14	92.9
<b>Water (Microbiology)</b>					
Co5A	Microbiology	215	96.7	210	98.1
Co5B (pilot)	Microbiology P/A	41	100	41	97.6
<b>Water (Toxicology)</b>					
C13	Microtox	1	100	1	0



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