CANADIAN ASSOCIATION FOR LABORATORY ACCREDITATION INC.

2014 Annual Report

CALA

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Ottawa ON
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Chair's Report

It has been my distinct pleasure to serve on the CALA Board of Directors for the past 3 years, including this past year as your Chair of the Board. It has indeed been a privilege to serve and an honour for which I'm very grateful. I have learned a lot about the organization, it's Members, the Board and the challenges we face moving forward into the future.

I have truly enjoyed helping to lead this organization along its continuing path of excellence. It is very rewarding when the organization you represent is recognized both across Canada and internationally as a world-class accreditation body that is both well-respected and well-known for the efficiency and effectiveness of its service delivery. Based on such a stellar record, one might ask if there is anything more that can be done to improve on such a lofty record. Well if there is anything I have learned in my time at CALA, is that no one is ever satisfied with past performance and "continuous quality improvement" is always CALA's modus operandi.

In 2014-15 CALA achieved a number of milestones and made a number of improvements to its business operation so that it could once again deliver improved customer satisfaction and service to its Members and stakeholders as follows:

1. CALA successfully completed the final year of its 2010-2015 Strategic Plan and with input from our Members and other stakeholders we will make public at this year's AGM, the CALA 2020 Strategic Plan (for 2015-2020). This new plan has 5 pillars (Goals). These include the following: Programs, Markets, People, Financial and Technology. We have also established two primary focuses for the next 5 years:

   - Based on an extraordinary reputation, CALA will become Canada's fastest-growing laboratory accreditation body offering internationally recognized services in multiple fields of testing; and
   - To have a state of the art Association Management System (AMS) capable of offering online self-service to clients, online registrations for training and streamlined administrative functions.

2. The formal revision of ISO/IEC 17025:2005 - *General requirements for the competence of testing and calibration laboratories* was launched during 2014 and we are pleased to note that CALA's Accreditation Manager, Ms. Colleen Cotter was appointed to the ISO/CASCO working group that will be revising this standard. With this direct connection, CALA will ensure that our laboratories will be given every opportunity to submit feedback throughout the development process for this important standard.

3. CALA successfully completed the evaluation of "representative sampling" as part of our revised accreditation assessment process. Member feedback was overwhelmingly positive (90%) that this new process was more "value added" for our clients.

4. The contract with our original software developer was severed and our critical IT project was temporarily placed on hold. Ongoing efforts to achieve more on-line access for our Members took a positive step forward this year when we established a new, solid working relationship with our new software development firm. As you read this year's report, CALA and this contractor will be launching into what should be the final development phase for completing our new IT infrastructure rebuild and I am hopeful that the Chair's Report for 2015-16 will be one that highlights its successful implementation and the establishment of greatly improved on-line access for all our Members.

In closing my report I wish to take this opportunity to thank my fellow volunteers, the staff team in Ottawa, and my fellow Board Members that serve CALA in many capacities. Our collective team efforts truly make this organization world class in both its efficiency and effectiveness. Again, it has been both my honour and privilege to serve you.

Kindest regards.

Klas Ohman
Chair

President & CEO's Message

As an accreditation body, CALA had another successful year in 2014. Our Accreditation Program maintained its fully sustainable status by both exceeding its revenue targets and curtailing its expenses. In terms of growth, it ended the year with 8 new laboratories in the program. The Accreditation Program, which is predominately "volunteer delivered", maintained its traditionally high level of customer service during the year. In 2014, 146 accreditation visits were completed and 3874 actions written, of which 23 actions were disputed, 17 of those upheld and none of those dispute decisions were appealed. In the program, there was a total of 3 substantiated customer complaints logged in 2014.

Accreditation staff members undertook their annual review of feedback from assessors and laboratories and one of the items dealt with "representative sampling". The feedback from laboratories was overwhelmingly positive, with 90% of respondents indicating that the changes made to the assessment process were "value-added". 85% of Lead Assessors confirmed our original assumptions that assessing a representative sample of appendices at a laboratory would result in:

- More assessor time available to focus on other issues
- Continued identification of major issues at the laboratory
- A deeper evaluation of selected methods

Conversely, the remaining 15% of Lead Assessors indicated that there was not necessarily more time available to focus on other issues because the practice is to shorten the number of days on site to reflect the lower number of appendices assessed under the representative sample.

CALA also undertook a satisfaction survey with laboratory managers in late 2014 and here is what we have learned so far about the critical issues facing laboratories:

- Human Resource Recruitment/Retention issues
- Cost of accreditation for small laboratories
- Cutthroat cost of testing, where tests are being priced lower than the cost to actually perform the test
- Training: both access and budget issues

Some of the suggestions received on what CALA can do to assist included:

- More, lower cost webinars and online training courses
- Keep cost increases for accreditation and PT under control
- Market benefits of Accreditation to Regulators
- Sponsor a Quality Managers' web forum
- Better technology for uploads of PT results, etc
- Find more ways to assist smaller labs
- Creation of a virtual member platform
- Consider creating a database of corrective actions based on lessons learned from audits
- Explore affinity relationships where possible, to benefit member laboratories

CALA management will examine this input and put it to use in guiding our future program development efforts.

Our go-forward strategy for the Accreditation Program remains unchanged. Plans are to continue to aggressively market our mineral, food and petroleum programs, since it is these areas that have the greatest potential for near-term growth.

Throughout 2014, the CALA Proficiency Testing (PT) Program was successful in retaining its key larger laboratories as program clients without any net loss of revenue to CALA. The PT program did miss its revenue targets by a small margin (4%) due to some anomalies in our food PT participation. Total number of test groups (55) offered remained stable with a marginal increase (+2) in total analytes offered.

The PT program's satisfaction level remained traditionally high with only 2 unsubstantiated customer complaints recorded from a total of 1208 lab shipments and only a single dispute (not upheld) on a total of 6923 samples shipped.

CALA continues to monitor international changes at ILAC, APLAC and ISO that may in a 5-6 year timeframe, require CALA to divest itself of the PT program in some way (to be determined). A CALA strategy has been developed and will be implemented when such a decision is taken internationally.

The Training Program had some disappointing performance metrics in 2014, missing its annual revenue target by a significant margin (31%). The majority of the program's training delivery formats failed to meet their forecasts. One of the two key reasons for these disappointing results lies with extended delays we have experienced in both course development and implementation resulting in delayed course launches (and therefore delayed revenue generation). The second reason seems to be general downward trend in the training marketplace for registrations in training courses of all kinds. This worrisome trend certainly needs to be factored into our thinking as we take actions to mitigate the negative effects this trend is having on the ability of CALA's Training Program to return to sustainability as soon as possible.

To this end, the CALA Board of Directors has expressed a series of concerns for the program including, but not limited to:

- long-term financial viability of the program (sustainable or subsidized),
- relevance of the program to CALA Members,
- quality of the training offerings / delivery and
- perceived over-pricing in the marketplace.

As a result, CALA will be undertaking a full Training Program Review during 2015 that will allow CALA management to provide the CALA Board with the information required for informed decisions on the future direction of this program.

In my report last year I indicated that a search was underway for a new contractor to complete the rebuild of CALA's IT infrastructure. I am pleased to report that CALA has now engaged a new contractor and has launched a very aggressive plan to complete this important project during 2015, if humanly possible. If we have learned anything with this experience, it is the fact that software development for a business as complicated as CALA's business takes significantly more time and money to complete than expected. Rest assured that we are more committed than ever to ensuring that this project is brought to a successful conclusion, giving CALA members leading edge access to our programs and services through a user-friendly web interface.

That said, I am also very pleased to report that CALA ended 2014 with a financial surplus of revenue over expenditure of $62,578.

Finally, before closing my report I wish to thank the members of CALA's Board of Directors for their continued leadership, to all of those who volunteered their time to undertake work on behalf of CALA throughout 2014 and to my staff team for your ongoing commitment and dedication to all things CALA in the delivery of member services that are second to none.

C. Charles Brimley
President & CEO

Board of Directors

Chair
Mr. Klas Ohman
Appointed
Calgary, AB

Vice-Chair
Mr. Michael Brodsky
Appointed
Thornhill, ON

Treasurer
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Saskatoon, SK

Corporate Profile

Mission *The Canadian Association for Laboratory Accreditation Inc. (CALA) is a not-for-profit member-based association that instills public confidence in laboratory test results by providing internationally recognized accreditation, proficiency testing and training services.*

History

CALA was originally established as the Canadian Association for Environmental Analytical Laboratories (CAEAL) 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 the assessment of a laboratory's quality management system, supported by the evaluation of analytical capability determined through proficiency testing.

Between 1994 and 2004, CALA operated in partnership with the Standards Council of Canada (SCC), an arrangement in which CALA 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 CALA resumed granting accreditation independently from the SCC for over 150 laboratories, while also maintaining a partnership arrangement as described above with the Standards Council of Canada and the Ontario Ministry of Environment, specifically for the accreditation of laboratories conducting tests under the Ontario Safe Drinking Water Act (OSDWA).

In November, 2005 the CALA accreditation program was officially recognized by the Asia Pacific Laboratory Accreditation Cooperation (APLAC) and the International Laboratory Accreditation Cooperation (ILAC).

The CALA Board of Directors has defined the ultimate goal of the organization as:

- ***CALA 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 ensures that members' views are made known to regulatory and standards-related decision makers in Canada and internationally.

In 2007, CALA members approved a broader scope of activities for CALA programs, expanding the organization's focus beyond simply environmental laboratories. The CALA corporate strategic plan included provisions for the expansion of accreditation activities. Currently, CALA-Accredited laboratories now include the following types of testing: food, mineral, petroleum, and coal.

At the June 2008 AGM, members selected the new association name the Canadian Association for Laboratory Accreditation or "CALA" which facilitated a broader scope of accreditations beyond simply the environmental field. In October 2008, CALA officially launched its new identity and transitioned to a new "CALA" look. In the same year, CALA signed an Agreement

directly with the Ontario Ministry of the Environment for the accreditation of water-testing laboratories conducting tests under the OSDWA.

In 2009, CALA's international recognition from APLAC and ILAC was renewed for another four-year period. Later that year, CALA successfully hosted the 2009 joint meetings of ILAC and the International Accreditation Forum (IAF) in Vancouver.

In 2010, CALA's Board of Directors approved a new, more sustainable business model that completely removed the PT Program's subsidization of the Accreditation Program. Under this business model, the goal is for each CALA program to become financially self-sustaining.

At the end of 2011, CALA had progressed on its goal to expand its scope of services beyond only environmental testing by having drafted the basis for an agreement with the Canadian Food Inspection Agency (CFIA). The agreement was subsequently formalized on February 1st, 2012.

In 2012, CALA, in conjunction with CFIA, undertook the development and implementation of food accreditation assessment procedures, and piloted a food microbiology PT program.

In 2013, CALA implemented a PT scheme for food microbiology to support Canadian laboratories seeking a Canadian source of PT, and CALA's international recognition from APLAC and ILAC was renewed for another four-year period.

In 2014, the PT Program switched to the robust statistical procedure recommended in ISO 13528 – *Statistical methods for use in proficiency testing by interlaboratory comparisons* (Algorithm A). As well, a CALA staff member was appointed to the ISO/CASCO working group tasked with reviewing and revising ISO/IEC 17025:2005 - *General requirements for the competency of testing and calibration laboratories*.

Membership and Clients

At the end of 2014, there were 648 clients of CALA (see Table 1), including 516 CALA Members (see Table 2). The number of clients decreased 1.9% from 2013, primarily as a result of a decrease in Institutional, Non-Member clients.

- Accreditation (see page 15 for details)
- Proficiency Testing (see page 19 for details)
- Training (see page 22 for details)
- International Activities (see page 24 for details)

Table 1. Components of CALA Clients

Type	Membership	Non-Member Clients	Totals
Private	278	84	362
Public	199	48	247
Independent	39	0	39
Totals	**516**	**132**	**648**

Table 2. Components of the CALA Membership

Type	Institutional	Individual	Totals
Private	217	61	278
Public	108	91	199
Independent	0	39	39
Totals	**325**	**191**	**516**

Financial Report

CALA's total revenue for 2014 was $3.6 million, approximately 4.8% ($179,826) less than budget, and 2.9% greater than the previous year results.

Evaluations as an income category on the Financial Statement are comprised of Proficiency Testing (PT) and Accreditation services. For 2014 the PT program experienced modest growth over 2013 results ($58,073, 3.8%) but fell short of budget targets by 4.0%. Accreditation saw growth over 2013 results ($31,971, 2.4%) and surpassed its 2014 budget target by $46,852 (3.6%).

The Training program suffered disappointing results in 2014 falling 12.5% ($38,667) below the results achieved in 2013 with year-end results 30.7% ($120,729) below budget. Diversification of the delivery models for training has been established. Delays in launching new course material that were projected to produce income in the fiscal year have contributed to the missed targets and lack of growth in the program.

Other income includes interest income, gains/losses on disposal of sales of investments, and unrealized gains on investments. Effective in 2012 with new not for profit accounting rules, unrealized gains on investment holdings are to be reported on the statement of operations (Income Statement) annually. In 2014 the unrealized gain on investments was $41,444 and the main driver of the growth in this line item.

Total operating expenses for the fiscal year were approximately $3.4 million, up 5.3% over prior year and 9.5% lower than budgeted expenses of $3.8 million. Program-related costs were down by 9.1% for a total of $140,263. All program direct costs were under budget.

Salaries, general overhead and administrative costs were also below budget. In 2014, we continued to focus on controlling and reducing administrative expenses while maintaining service levels. This is an ongoing annual strategy to ensure that CALA administrative expenses are monitored and kept within reasonable levels, further reducing the pressure on program areas.

CALA continues to work on the development of a new Association Management System (AMS) to improve client service and office efficiency. As reported last year, the original contract with a software developer was severed and the project was put on hold. Near the end of 2014, CALA entered into a contract with a new contractor and in so doing, agreed to a new AMS structure that will provide better value for members and office administration. That decision resulted in the write off of the remaining investment as an impairment charge of $106,872.

Employees and volunteers are an integral part of our association and we are fortunate to have a very skilled and dedicated team working at CALA. The association continues to benefit greatly from the generous

contribution made by all of its volunteers, allowing us to operate such successful programs. Please note that the economic value of volunteer time has not been captured in our financial statements.

In summary, the Association maintained its strong financial position in 2014 through consistent, careful management of revenue, expenses and cash flow and, after factoring in amortization of capital assets, ended 2014 with an operating surplus of $62,578. This increase in net assets resulted in an ending accumulated surplus of $2.1 million. CALA is an organization that will continue to be successful through the diversity and versatility of the programs it offers and the strong management systems in place.

Welch LLP®

Report of the Independent Auditor on the Summarized Financial Statements

To the Members of the Canadian Association for Laboratory Accreditation Inc.

The accompanying summarized financial statements, which comprise the summarized statement of financial position as at December 31, 2014, the summarized statement of operations and changes in net assets and summarized statement of cash flows for the year then ended, and related note, are derived from the complete audited financial statements of the Canadian Association for Laboratory Accreditation Inc. (CALA) for the year ended December 31, 2014. We expressed an unmodified audit opinion on those financial statements in our report dated March 12, 2015.

These summarized financial statements do not contain all the disclosures required by Canadian accounting standards for not-for-profit organizations. Reading these summarized financial statements, therefore, is not a substitute for reading the audited financial statements of CALA.

Management's Responsibility for the Summarized Financial Statements

Management is responsible for the preparation of the audited financial statements on the basis described in Note 1.

Auditor's Responsibility

Our responsibility is to express an opinion on the summarized financial statements based on our procedures, which were conducted in accordance with Canadian Auditing Standard (CAS) 810, "Engagements to Report on Summary Financial Statements".

Opinion

In our opinion, the summarized financial statements derived from the audited financial statements of the Canadian Association for Laboratory Accreditation for the year ended December 31, 2014 are a fair summary of those financial statements, in accordance with the basis described in Note 1.

Welch LLP
Chartered Accountants
Licensed Public Accountants

Ottawa, Ontario
March 12, 2015.

Summarized Statement of Financial Position

December 31, 2014

Assets	**2014**	2013
Current assets	**$ 1,147,180**	$ 1,088,492
Long-term investments	**1,862,779**	1,786,218
Tangible capital and intangible assets	**1,834**	121,331
	$ 3,011,793	$ 2,996,041
Liabilities and Net Assets		
Current liabilities	**$ 884,221**	$ 931,047
Unrestricted Net Assets	**2,127,572**	2,064,994
	$ 3,011,793	$ 2,996,041

Summarized Statement of Operations and Change in Net Assets

Year ended December 31, 2014

Revenue	**2014**	2013
Evaluations	**$ 2,995,199**	$ 2,904,256
Memberships	**145,970**	148,146
Miscellaneous	**79,220**	23,163
Training	**271,936**	310,603
Other revenue	**84,901**	91,197
	3,577,226	3,477,365
Expenditures		
Evaluations	**1,186,036**	1,220,675
Operational	**2,054,583**	1,853,073
Training	**167,157**	162,956
Impairment loss on intangible asset	**106,872**	56,313
	3,514,648	3,293,017
Excess of revenue over expenses	**62,578**	184,348
Net assets, beginning of year	**2,064,994**	1,880,646
Net assets, end of year	**$ 2,127,572**	$ 2,064,994

Summarized Statement of Cash Flows

Year ended December 31, 2013

	2014	2013
Cash flows provided by (used in)		
Operating activities	**$ 280,681**	$ 157,689
Investing activities	**(275,436)**	(270,066)
Net increase (decrease) in cash	**5,245**	(112,377)
Cash, beginning of year	**366,197**	478,574
Cash, end of year	**$ 371,442**	$ 366,197

Note 1

The information selected by management for presentation in the Summarized Annual Financial Statements has been identified as being the most pertinent and useful financial data for inclusion in the CALA annual report. The summarized financial statements do not reflect the substantial value of services contributed by volunteers.

Accreditation Program

CALA is one of 89 accreditation bodies world-wide that is signatory to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (as of March 2015). This arrangement provides stakeholders with assurance that the CALA Accreditation Program meets requirements of the international standard ISO/IEC 17011:2004 – *Conformity Assessment – General Requirements for Accreditation Bodies Accrediting Conformity Assessment Bodies*.

CALA laboratory accreditation is based on ISO/IEC 17025:2005 – *General Requirements for the Competence of Testing and Calibration Laboratories*. The process to attain and maintain accreditation is as follows:

- An assessment is carried out against the criteria in ISO/IEC 17025;
- The laboratory receives a report of assessment findings;
- Laboratories respond to any observed non-conformances in a timeframe communicated to the laboratory by CALA;
- A laboratory's response to the findings is reviewed by CALA staff, the Lead Assessor, and Advisory Panel members;
- The Advisory Panel recommends to the CALA 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, CALA grants or maintains the accreditation; and,
- Laboratories successfully participate in proficiency testing (PT) as per P02-03 *Proficiency Testing Policy for Accreditation*.

CALA has granted accreditation to 209 government and private sector laboratories (see Figure 1). Forty-six (46) of these accredited laboratories are licensed under the Ontario *Safe Drinking Water Act* (OSDWA). In 2014, 8 new laboratories underwent an initial assessment, and six (6) laboratories voluntarily terminated their accreditation.

Figure 1 Sources of CALA-Accredited Laboratories

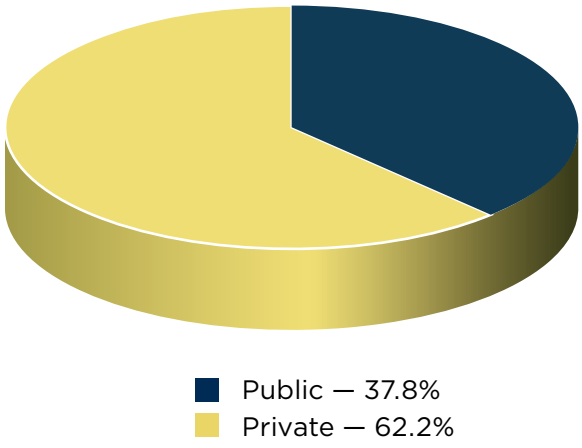
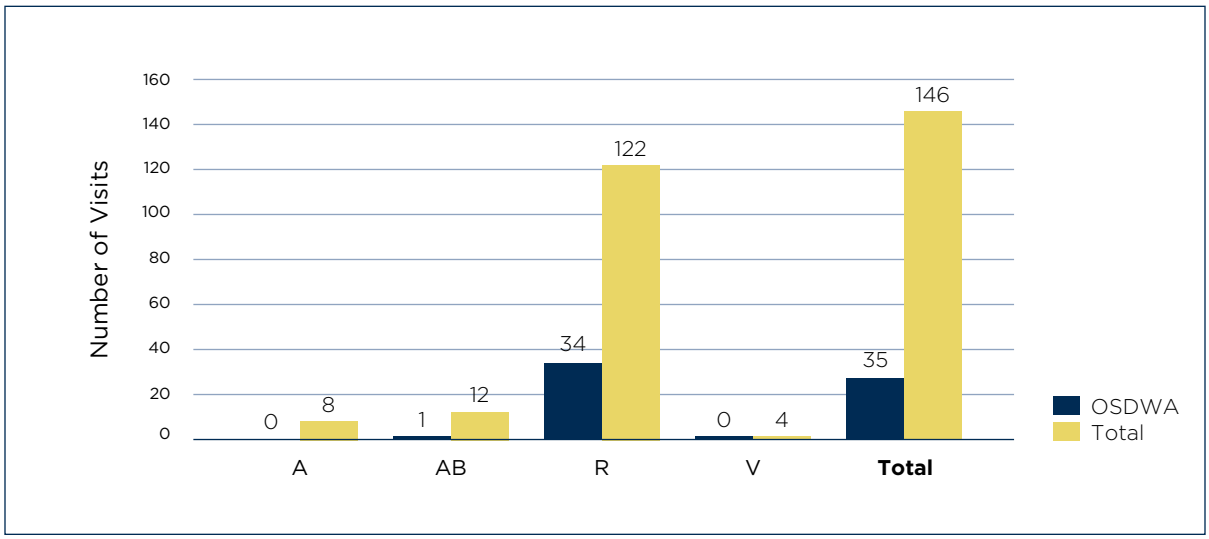


Figure 2 Categories of Site Visits Conducted in 2014



Site Visits

In 2014, CALA conducted a total of 146 site visits, of which 35 (23.9%) were conducted at laboratories licensed under the OSDWA (see Figure 2).

CALA 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.
- Reassessment (R): A site visit conducted at accredited laboratory every two years.
- Verification (V): A site visit to confirm implementation of corrective actions or to ensure satisfactory conditions following significant changes at a laboratory.

Assessors

CALA assessors are predominantly volunteers from member laboratories, although some do come from other types of laboratories or related organizations. They are a highly-skilled, highly-committed group of volunteers that represent a valuable resource for CALA. As well as having at least five years experience in a laboratory or laboratory-related environment, these volunteers attend a rigorous CALA Lead Assessor/Assessor course and participate in CALA-specific training once every two years. There are currently 139 active volunteer assessors, primarily from government and private sector laboratories (see Figure 3). Seventy-three (73) of these are from 37 laboratories in the Accreditation Program, and 24 come from the 46 laboratories accredited and licensed under the OSDWA.

In 2014, 146 site visits were conducted, requiring 241 assessor trips. Assessor

assignments ranged from a single experienced assessor at a small laboratory, to several assessors required to conduct the reassessment of a large laboratory with a complex scope of testing.

Turn-Around Time

Table 3 shows a breakdown of the major steps in the accreditation process, and the average time taken to complete each step in 2014. This data is based on site assessments performed in 2014, and is current as of March 18, 2015.

New (or applicant) laboratories have up to 90 days to respond to any non-conformances identified during an assessment: The 8 (eight) applicants submitted responses to CALA within 64.6 days on average; the shortest time was 13 days after the assessment and the longest was 94 days after the assessment. Accredited laboratories have up to 45 days to respond to any non-conformances identified during a reassessment or an abbreviated assessment. Most already-accredited laboratories use all of this allowable time to respond, as evidenced by the fact that the average amount of time for accredited laboratories to submit responses to findings was 43 days. Laboratories that applied for an abbreviated assessment had an average

Figure 3 Sources of CALA Volunteer Assessors

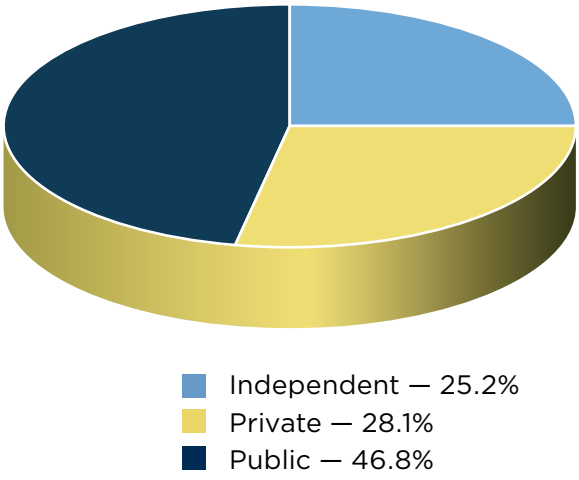


Table 3 Major Steps in the Accreditation Process

Step in the Accreditation Process	Average Time (days*)	1-7 days (%)	8-23 days (%)	24-45 days (%)	>45 days (%)
Completion of Responses	30.8	20.9	23.0	26.6	29.5**
Advisory Panel Review	3.7	86.8	12.9	0.3	-
Accreditation Council Approval	3.1	91.6	8.4	-	-

* subject to change, following completion and approval of visits carried out in 2014
** 85.6% completed within 60 days; 92.8% completed within 90 days

submission time of 42.3 days while those that applied for an accelerated abbreviated assessment had an average submission time of 15 days.

CALA targets a maximum of 45 days for staff to perform an initial review of laboratory responses, and will request further information from the laboratory or inform the laboratory that the responses meet the requirements. At the time this Annual Report was prepared, 89 % of the 2014 lab responses were initially reviewed within the 45-day target and the average time to do so was 24.2 days. On average, the amount of time from the date of the site visit to the date of final approval was 98.7 days.

Proficiency Testing (PT) Suspensions and Withdrawals

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

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

The summary of suspensions shown in Table 4 indicates that the pattern reported in previous years (other than 2012) continued in 2014: the non-accredited laboratories experienced the highest overall rate of suspensions while the accredited OSDWA laboratories experienced the lowest rate overall.

Table 4 Suspensions at Non-Accredited, Accredited and Accredited OSDWA Laboratories (values are shown as a percentage of total PT test samples)*

Study (2014)	Non-Accredited	All Accredited	Accredited OSDWA
January	0.67%	0.32%	0.00%
March	2.54%	0.48%	0.14%
June	1.03%	0.42%	0.08%
October	0.9%	0.76%	0.42%
Overall Average	**1.33%**	**0.48%**	**0.17%**

* These values do not include suspensions for reasons other than PT failures, nor failures of PT provided by other approved PT providers.

Proficiency Testing Program

At the end of 2014 the CALA Proficiency Testing (PT) Program offered 55 test groups, comprising 360 analytes. Samples for each test group are generally provided to member laboratories twice each year. The test groups are split between March/October rounds (inorganic, microbiology and food) and January/June rounds (organics, soils and food).

Beginning in March 2014, CALA replaced the statistical procedure used to calculate the consensus mean and standard deviation of participant results. In the past, CALA used the arithmetic mean and standard deviation, following removal of outliers (identified by the Grubbs procedure). The new procedure uses the robust procedure that is recommended in ISO 13528 – *Statistical methods for use in proficiency testing by interlaboratory comparisons* (Algorithm A). Both procedures are acceptable under ISO 13528, however the new procedure is less affected by data sets that deviate from normality.

The scoring system and other details are provided in the PT15-*CALA PT Program* series of documents, which is available at: www.cala.ca.

PT Offerings

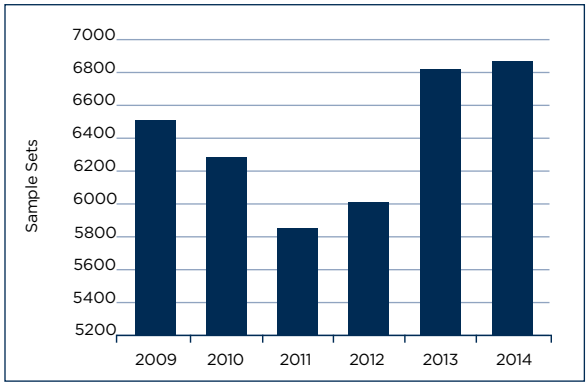
The following is a summary of changes to the analytes offered in the PT Program in 2014:

- Mineral oil and grease was added to C34;
- VPH was added to C31A;
- Evaluation procedure was changed from the use of arithmetic mean and standard deviation to the use of robust statistical procedures;
- Work was conducted on the development of new test groups for petroleum hydrocarbons in water.

PT Fees

PT fees changed slightly in 2014 to reflect renewed contracts with collaborator laboratories.

Figure 4 PT Registration Trend in the Proficiency Testing Program (sample sets = total number of registered test groups)



Participation

Participation showed a marginal increase in 2014 (see Figure 4). Participation levels for each test group are indicated below in Table 5.

Turn-around Times

Turnaround time from reporting deadline to the issuing of the final report continues to be shorter than the goal of five weeks. (see Figures 5 and 6).

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 laboratories conducting tests under the Ontario *Safe Drinking Water Act* (OSDWA). In general, average success rates were over 90%, consistent with those observed in previous years.

Figure 5 Turn-around time for January and June Proficiency Testing Shipments

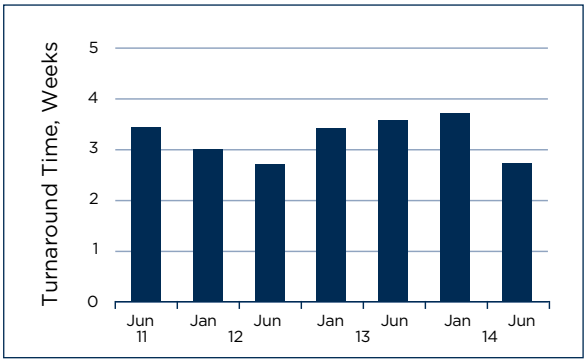


Figure 6 Turn-around time for March and October Proficiency Testing Shipments

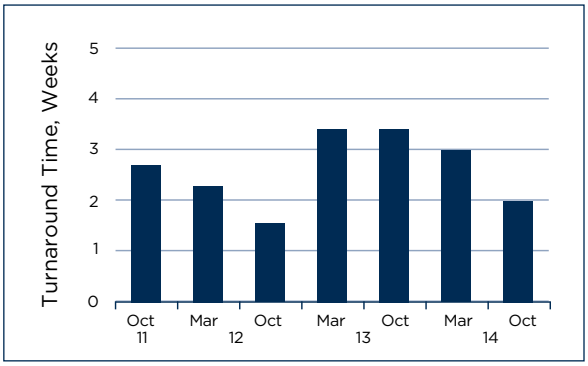


Table 5 Participation in Each Test Group of the CALA Proficiency Testing Program

PT	Group	Samples 2010	Samples 2011	Samples 2012	Samples 2013	Samples 2014
C-01A	Major Ions	449	430	428	447	447
C-01B	NH3, o-PO4, DOC	337	334	338	381	382
C-02A	Metals Full	261	243	244	255	247
C-02B	Metals High	86	78	82	78	75
C-02C	Total Metals	155	138	147	161	153
C-03	TKN & TP	269	251	258	270	260
C-04A	TSS	448	432	450	473	463
C-04B	BOD	283	267	268	290	289
C-04C	Turbidity	200	189	200	224	227
C-04D	COD	193	178	189	212	212
C-05A	Coliforms	318	300	315	333	334
C-05B	Coliforms (P/A)	100	81	77	83	81
C06A	OCP/PCBs	73	60	55	59	57
C06B	PCBs	79	69	63	73	73

Table 5 – Continued from page 20

PT	Group	Samples 2010	Samples 2011	Samples 2012	Samples 2013	Samples 2014
C-07	PAH	135	117	110	138	136
C-08	PCB in Oil	85	76	73	84	84
C-09	Metals on Filters	30	28	25	29	30
C-10	Ions on Filters	21	6			
C-11	Trout LC50	48	48	47	52	52
C-12	Daphnia LC50	41	42	42	47	47
C-13	Microtox IC50	59	60	61	61	59
C-14	CN (SAD)	101	91	90	104	95
C-15	pH	441	435	448	487	487
C-16	BTEX/THM	232	194	190	228	240
C-17	Metals in Soil	156	138	147	157	162
C-18	PAH in Soil	106	81	79	114	109
C-19	Mercury	155	150	148	159	158
C-20	Asbestos	249	282	329	330	357
C-21	Metals in Air	51	38	37	42	43
C-22	OP Pesticides	112	98	90	94	87
C-24	Aryloxy Acids	57	51	47	50	46
C-25	Phenolics	75	62	55	65	59
C-27	Glyphosate	33	28	31	33	32
C-28	VOCs in Air	16	7	No longer offered		
C-29	Aldicarb	57	44	34	35	28
C-31A	BTEX soil	137	103	100	128	132
C-31B	PHC soil	135	100	97	132	138
C-32	Chlorine	128	137	140	143	151
C-33	Total Phenolics	101	97	97	96	90
C-34	Oil and Grease	147	135	127	142	136
C35	PCB in Soil	65	58	54	69	67
C36	VOCs in Soil	73	60	62	86	85
C37	Colour in Water	Not offered		60	102	114
C38	TCLP-VOCs					37
C39	TCLP-Inorganics					54
C60A	Food-Meat (Qualitative)				29	27
C60B	Food-Meat (Quantitative)				25	44
C61A	Food-Milk (Qualitative)				13	18
C61B	Food-Milk (Quantitative)				12	25
C62A	Food-Eggs (Qualitative)				9	8
C62B	Food-Eggs (Quantitative)				5	9
C63A	Food-Cheese (Qualitative)				19	21
C63B	Food Cheese (Quantitative)				18	31
C64A	Food-Feed (Qualitative)				10	13
P50	Chlorine in Water		17	36	34	32
P51	Turbidity in Water		8	20	18	16
P52	pH in Water		6	16	16	15
	TOTAL	**6297**	**5847**	**6006**	**6820**	**6873**

Training Program

The CALA Training Program delivers training on subjects related to laboratory accreditation. Training Program priorities remain unchanged:

- Training assessors to meet CALA accreditation program needs;
- Developing and delivering training within an approved training budget; and
- Assisting in the delivery of special services within the association.

In reaching out to CALA members in 2014, the Training Program delivered 54 in-class training sessions to 398 participants, in fourteen cities across Canada over 86 training days. With our computer-based training products, 45 individuals took part in online training courses and 306 registrants participated in webinars. As well, throughout the year, the Training Program additional non-revenue training was provided to CALA volunteers.

The Training Program continues to work towards becoming financially self-sustaining. The economic conditions that have led laboratories to reduce their training budgets still exist. As such, in 2014 CALA intended to focus on online and webinar training to provide growth to the program. CALA expected that more laboratories would choose these eLearning options, however registrations for these formats were much lower than expected and contributed to the budget shortfall. To continue to meet client needs, traditional classroom courses (hosted and virtual options) were offered and exceeded the budget target for the year.

New Courses

In 2014, three new courses were added to the CALA curriculum. Based on client feedback, the program added a 2-day *Lead Auditor for ISO/IEC 17025* course, and two half-day courses on *Preventive and Corrective Actions* and *Continual Improvement in the Laboratory*.

The *Lead Auditor for ISO/IEC 17025* course focuses on specific skills required to plan and lead audits, allowing participants to build on previous audit experience and the skills and knowledge already acquired in the *Understanding ISO/IEC 17025* and the *Internal Auditor for ISO/IEC 17025* courses. *Preventive and Corrective Actions* and *Continual Improvement in the Laboratory*

courses address the need of many laboratories – how to improve the ability of lab staff to recognize and respond to non-conformances and opportunities for improvement.

Preparing for 2015

As previously stated, CALA recognizes training budgets continue to be a concern for our member/clients, and, in response, CALA has introduced lower priced options for training, namely webinar subscriptions. Additional virtual course options have also been added for participants who have restricted budgets and/or are too busy to travel for training. Additional online course options will also be available in 2015.

CALA is working towards implementing a new AMS, and in 2015, much effort will be put towards transitioning to a new Learning Management System (LMS) to support the CALA Training Program and its clients.

In 2015, CALA will be introducing a Training Program Committee to assist with providing input into the training needs of laboratories, and assessing proposed and existing training products.

Additional Information

Course descriptions, registrations details and the training schedule can be found at www.cala.ca/training.

International Activity

Services Provided Internationally

In 2014, CALA delivered proficiency testing and/or accreditation services to 47 laboratories located outside Canada (up 3 from 2013), mostly in the rest of the Americas as shown in Figure 7. Ten (10) of these laboratories are in the accreditation program and 37 are in the proficiency testing program only.

Mutual Recognition Arrangements

CALA is signatory to two (2) international mutual recognition agreements or MRAs, the Asia Pacific Laboratory Accreditation Cooperation (APLAC) and the International Laboratory Accreditation Cooperation (ILAC). These agreements provide global recognition of CALA accreditation by 89 accreditation bodies. Being signatory to these arrangements promotes the acceptance of Canadian laboratory results nationally and around the world.

More and more regulations and customers require accreditation by an accreditation body that is signatory to ILAC. Therefore, maintaining CALA's signatory status to ILAC is critical for CALA clients. And, there is a cost to maintaining this signatory status: as a signatory to both APLAC and ILAC MRAs, there are requirements and expectations that CALA will contribute to the operation of both APLAC and ILAC. This involves travel to and active involvement in international meetings, sitting on committees, reviewing documents, and voting on ballots. In 2014, CALA staff participated in the following meetings:

- APLAC General Assembly – Guadalajara, Mexico
- Two (2) ILAC Accreditation Issues Committee Meetings – Oslo, Norway and Vancouver, Canada
- ILAC General Assembly – Vancouver, Canada

The CALA Accreditation Manager sits on the APLAC Evaluator Training Working Group and is Secretary of the APLAC Technical Committee.

A key activity that is critical to the MRA process is the evaluation of accreditation bodies to ISO/IEC 17011:2004 – *Conformity Assessment – General requirements for accreditation bodies accrediting*

conformity assessment bodies; to this end, two CALA staff volunteer as APLAC Lead Evaluators. The CALA PT Manager participated in one (1) evaluation in 2014. As well, CALA hosted an APLAC Evaluator Training Workshop, where 19 people from around the globe were trained as APLAC evaluators, including a third CALA staff person who is now designated as an APLAC Provisional Evaluator.

Another requirement is that CALA-accredited laboratories participate in international PT studies, organized by APLAC. In 2014, ten (10) CALA laboratories participated in APLAC PT studies.

In 2014, the CALA Accreditation Manager was appointed by the Standards Council of Canada to ISO/CASCO Working Group (WG) 44, the group that is revising ISO/IEC 17025:2005 – *General requirements for the competence of testing and calibration laboratories*. As well, a representative from a CALA-accredited laboratory sits on an ILAC sub-committee that will be following this revision process closely.

Figure 7 Distribution of 47 international laboratories receiving services from CALA.

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 2014 and June 2014 rounds.

Total Program	January 2014		June 2014	
	Tests	Success %	Tests	Success %
Water				
C06A-OCPs	376	99.2	398	93.7
C06B-PCBs	102	97.1	109	95.4
C07-PAHs	947	96.8	924	94.4
C16-BTEX/THMs/VOCs	2542	95.9	2418	97.2
C22-OP Pesticides	365	97.5	365	97.0
C24-Aryloxy acid pesticides	131	94.7	133	98.5
C25-Phenolics	100	90.0	100	97.0
C27-Glyphosate	14	100	14	85.7
C29-Aldicarb	13	100	13	100
C34-Total Oil and Grease	64	98.4	83	96.4
Oil				
C08-Total PCBs	124	95.2	117	98.3

Table A1 Continued from page 26

	January 2014		June 2014	
	Tests	**Success %**	**Tests**	**Success %**
Air Filter				
C09-Metals	58	93.1	63	76.2
Soil/Sediment				
C17-Metals	1458	97.2	1406	95.4
C18-PAHs	843	96.8	817	93.1
C31A-PHCs/BTEX	397	97.2	410	98.3
C31B-PHCs	241	98.3	234	98.7
C35-PCBs	101	95.0	106	96.2
C36-VOCs*	1351	98.0	1282	97.9
C38-TCLP VOCs	160	92.5	162	88.9
C39-TCLP Inorganics	294	92.5	314	90.2
Occupational Health				
C20-Asbestos	73	100	81	91.4
C21-Metals	46	95.7	43	100
Food Microbiology				
C61A-Milk	-	-	46	97.8
C61B-Milk	30	96.7	47	87.2
C62A-Eggs	-	-	32	100
C62B-Eggs	15	93.3	17	88.2

Table A2. Success rates for all laboratories participating in the March 2014 and October 2014 rounds.

Total Program	March 2014		October 2014	
	Tests	Success %	Tests	Success %
Water (Inorganic)				
C01A-Major ions	1557	94.9	1625	94.3
C01B-NH3/PO4/DOC/Br/NO2	498	92.3	500	92.0
C02A-Metals	2568	96.0	2597	96.5
C02B-Metals (high range)	386	94.6	382	96.3
C02C-Metals (Total)	1345	96.2	1324	94.6
C03-TKN/TP	196	94.4	198	96.5
C04A-Solids	349	95.7	363	94.5
C04B-BOD	219	97.7	220	98.2
C04C-Turbidity	110	93.6	112	95.5
C04D-COD	97	93.8	102	96.1
C14-Cyanide	50	94.0	44	88.6
C15-pH	240	98.8	248	99.6
C19-Mercury	88	94.3	85	96.5
C32-Chlorine	96	94.8	99	96.0
C33-Total Phenolics	39	89.7	37	89.2
C33-True Colour	57	98.2	59	100

Table A2 Continued from page 28

	March 2014		October 2014	
	Tests	**Success %**	**Tests**	**Success %**
Water (Microbiology)				
C05A-Microbiology	500	96.6	515	96.9
C05B-Microbiology P/A	86	100	84	100
Water (Toxicology)				
C11-Trout	21	100	22	95.5
C12-Daphnia	24	91.7	23	100
C13-Microtox	29	96.6	29	96.6
Occupational Health				
C20-Asbestos	77	93.5	87	97.8
C21-Metals	47	91.5	43	93.0
Food Microbiology				
C60A-Meat	-	-	77	93.5
C60B-Meat	103	88.3	102	87.2
C63A-Cheese	-	-	36	91.7
C63B-Cheese	32	96.9	34	91.2

Table A3 Success rates for OSDWA laboratories participating in the January 2014 and June 2014 rounds.

OSDWA Laboratories	January 2014		June 2014	
	Tests	Success %	Tests	Success %
Water (Organic)				
C06A-OCPs	136	100	138	99.3
C06B-PCBs	24	91.7	27	85.2
C07-PAHs	140	88.6	156	100
C16-BTEX/THMs/VOCs	577	99.3	580	97.9
C22-OP Pesticides	178	99.4	178	97.8
C24-Aryloxy acid Pesticides	68	98.5	68	100
C25-Phenolics	44	90.9	44	97.7
C27-Glyphosate	9	100	9	100
C29-Aldicarb	10	100	10	100
C34- Oil and Grease	8	87.5	9	88.9

Table A4 Success rates for OSDWA laboratories participating in the March 2014 and October 2014 rounds.

OSDWA Laboratories	March 2014		October 2014	
	Tests	Success %	Tests	Success %
Water (Microbiology)				
C05A- Microbiology	130	99.2	128	98.4
C05B- Microbiology P/A	20	100	20	90.0
Water (Inorganics)				
C01A- Major Ions	242	96.3	255	96.4
C01B- NH3/PO4/DOC	92	90.2	95	94.6
C02A- Metals	455	97.7	500	98.1
C02C- Total Metals	205	93.7	203	97.5
C03- TKN/TP	40	92.5	40	95
C04A-Solids	39	94.9	39	97.4
C04B-BOD	21	100	21	100
C04C- Turbidity	21	95.2	20	95
C04D-COD	10	100	10	100
C14-Cyanide	12	100	13	84.6
C15-pH	35	100	35	100
C19-Mercury	15	100	17	100
C32-Chlorine	20	100	18	100
C33- Total Phenolics	13	84.6	11	100
C37-True Colour	12	91.7	-	-