



# San Mateo County Forensic Laboratory

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## Issue

Does the San Mateo County Forensic Laboratory meet the current needs of the county and the local enforcement agencies using its services and can it maintain, or improve, its current service levels?

## Summary

The San Mateo County Forensic Laboratory (crime lab) is a vital element in the criminal justice system within the county. Overall, it meets high professional standards as measured by independent certification of its operations and the feedback of the law enforcement agencies it serves, including the District Attorney's Office. Better bilateral communication with law enforcement agencies and the District Attorney's Office on crime scene evidence analyses, turnaround timing, trial scheduling, witness needs and similar topics of mutual interest is achievable and desirable. Training and information sharing on a range of forensic issues should be offered by the Forensic Laboratory to all of its customers on a regular, scheduled basis.

## Background

The San Mateo County Forensic Laboratory (crime lab) is a multi-jurisdictional service of the San Mateo County Sheriff's Office. It plays an integral role in the criminal justice system by providing specialized investigations, scientific analyses of collected materials, and expert courtroom testimony.

The crime lab is funded through the Sheriff's budget and separately derives revenue by charging fees for specific forensic services to local law enforcement agencies (LEAs) and non-county agencies under contract. In fiscal year 2010, the crime lab was allocated \$4,205,243 in the Sheriff's budget, and generated \$1,106,237 in fees from LEAs both inside and outside of the county.<sup>1</sup> Crime lab fees for in-county LEAs consist of two parts: an annual fixed fee (variable by city size) and laboratory fees for specific forensic services requested by the agency during the year.

The crime lab serves over 25 LEA customers. They include the police departments of all cities/towns within San Mateo County, the Sheriff's Office, the District Attorney's Office, the Probation Department, and the Coroner's Office. The crime lab also has service contracts with various state, special district police departments, and police departments outside of San Mateo County. These include BART, the California Highway Patrol (San Mateo County branch office

<sup>1</sup> Crime Lab 2010-11 Budget sections 30181 and 30183. Of the total billed fees, \$509,061 was funded on behalf of 12 San Mateo County cities through the American Recovery and Reinvestment Act of 2009 (Public Law 111-5).

in Redwood City), the Alameda County District Attorney's Office, and law enforcement agencies for the cities of Vallejo, Concord, and Hayward.

The crime lab consists of three operational units which provide a wide array of specialized scientific and forensic services including, ballistics, toxicology, serology, fingerprint, and DNA analyses, as well as crime scene processing. Each unit has its own supervisor who reports to the Director, who has overall administrative charge of the crime lab. Some employees are cross-discipline trained among units to provide for flexibility and effective use of specialists throughout the lab.

The three operational units and the services they provide are:

- **Criminalists** – This unit is comprised of the Serology/DNA, Firearm/Toolmark, Trace Evidence, Controlled Substances, and Blood/Breath/Urine Alcohol Sections. It performs a wide variety of complex tasks in analyzing and evaluating physiological fluids, controlled substances, and other physical evidence. This unit performs crime scene documentation, reconstruction, and collection of physical evidence at major crime scenes. Criminalists appear in court as expert witnesses.
- **Latent Print** – This unit performs laboratory procedures using chemicals and powders to develop latent prints from various surfaces, and examines/evaluates prints using the Automated Fingerprint Information System. This unit performs crime scene documentation, reconstruction, and collection of physical evidence at major crime scenes. Members of the Latent Print unit appear in court as expert witnesses.
- **Office Support/Laboratory Support** – This unit performs administrative functions for the crime lab, including maintaining and securing case files, distributing laboratory reports, and maintaining laboratory result databases. This unit also oversees the property functions of the crime lab.

A limited amount of specialized analysis is outsourced to other accredited labs when the necessary equipment or expertise is unavailable within the crime lab.<sup>2</sup>

The crime lab is managed by a director who is appointed by the Sheriff and reports to the Undersheriff. Currently, the crime lab employs 31.5 full-time equivalent (FTE) persons including one Lab Director, four Supervisors, 22.5 Technical Staff, two Property Officers, and two Clerical Staff.

The crime lab uses qualified interns for specified analyses and courtroom testimony when required. Management believes the use of interns provides an excellent environment for evaluation and recruitment of future full-time employees.

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<sup>2</sup> The crime lab outsources forensic analyses for categories in which they are not accredited: arson, computer fraud, 'questioned' documents (handwriting analysis), blood and urine toxicology involving drugs (blood and urine toxicology involving alcohol is an accredited analysis and is done at the crime lab).

The crime lab maintains two motorized vans fully-equipped with forensic tools necessary for field collection and preservation of crime scene evidence. These vans are available 24 hours a day, 7 days a week. After-hours and weekend support is provided by rotating “on-call” FTE crime lab technicians.

The 2006 San Mateo County Civil Grand Jury issued a summary report updating the status of previous report recommendations to improve the crime lab.<sup>3</sup> All prior recommendations were implemented with one exception - obtain an independent accreditation. The crime lab fulfilled the recommendation in 2010 when it received accreditation from the American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB), an independent agency that focuses exclusively on operations of forensic laboratories across the country.<sup>4</sup> The accreditation was issued on September 11, 2010 after a positive evaluation of the crime lab’s management systems and technical procedures and practices. The accreditation is valid for a period of 5 years and will require recertification in 2015.

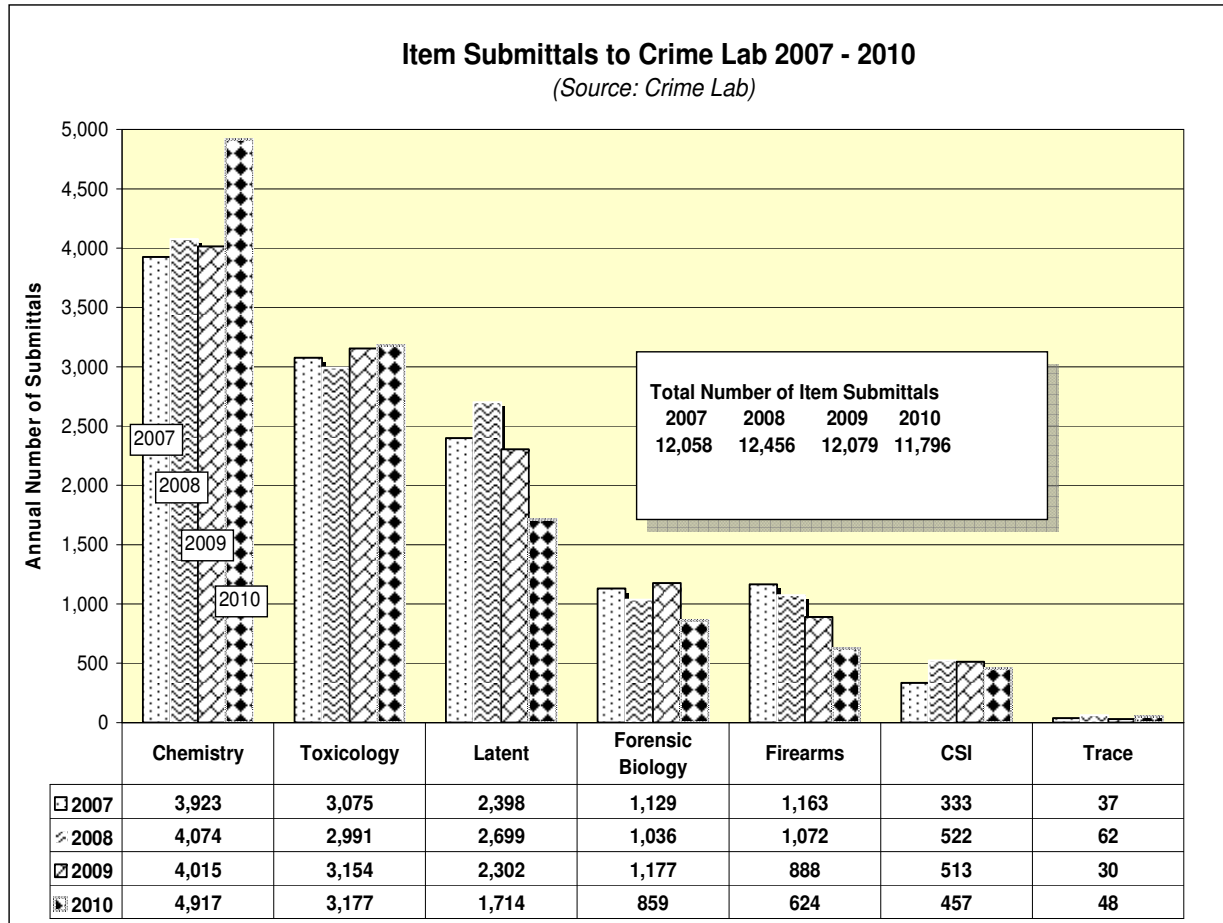
Accreditation is vital to the crime lab’s standing as a high value tool in the criminal justice system. The review process considers, among other things, standards for evidence chain of custody, crime scene material internal analysis protocols, staff technical qualifications, “clean room” control, and virtually every aspect of crime lab operation. The granting of the crime lab’s current ASCLD/LAB accreditation, and the achievement of supplemental requirements for the *International* distinction (ISO/IEC 17025:2005), certifies that no systemic problems exist within the crime lab’s procedures that might threaten the preservation and/or analysis of evidence.

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<sup>3</sup> [http://www.sanmateocourt.org/documents/grand\\_jury/2005/Forensic\\_Lab.pdf](http://www.sanmateocourt.org/documents/grand_jury/2005/Forensic_Lab.pdf).

<sup>4</sup> The American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) is an independent industry organization which reviews forensic laboratories for the purpose of assuring that accredited laboratories maintain ISO/IEC standards. Once the ASCLD/LAB completes a thorough review of crime lab practices, it determines whether the lab’s current procedures qualify for immediate accreditation or, if violations are noted, issues a corrective action request. The violation(s) must be corrected and then verified by a specified date in order to receive final accreditation. *See*, Appendix 1.

In the years 2007 - 2010, the crime lab processed an annual average of approximately 12,100 specialized forensic analyses (Item Submittals) within seven specified categories (*see below*, Item Submittals to Crime Lab 2007 - 2010). While the total number of Item Submittals has been fairly consistent in the years 2007 - 2010, the type of requests fluctuates somewhat. For example, Chemistry Item Submittals increased 18 percent in 2010.<sup>5</sup>



The crime lab uses an internal, lab-access-only electronic information system (THEMIS) that provides internal tracking, monitoring and report generation of all Item (and case) Submittals. Neither the submitting LEA nor District Attorney representative has the ability to monitor the progress of Item Submittals through the crime lab other than by telephone inquiry during regular business hours. Likewise, advice to the crime lab about timing issues like trial schedule dates, expert witness availability, and reporting are typically updated by telephone between the District Attorney's Office and the crime lab. It has been reported that, on occasion, lack of robust and updated communication between the District Attorney's Office and the crime lab has led to confusion about evidence processing, turnaround timing, trial schedules and delivery dates for

<sup>5</sup> According to interviewees, the increased use of social drugs appears to have contributed to this category increase.

completed analyses. Timely communication that analysis can be discontinued when a case has been terminated prior to trial is also sometimes lacking. Functionality is being developed by the software vendor which will allow -- with appropriate security -- limited access to THEMIS by non-lab personnel in order to determine the status of Item Submittals and for other commentary/updates as to scheduling issues for trial and related matters.

## Investigation

The investigation explored the following areas:

1. Security of evidence - Is the evidence handling process (chain of evidence control) secure, *i.e.*, are adequate safeguards in place to prevent theft or contamination of crime scene evidence?
2. Accreditation – What is the scope of the crime lab’s accreditation and is it current?
3. Training outreach – Is the crime lab offering adequate field training and education in crime scene evidence gathering, handling and processing to its LEA customers?
4. Customer satisfaction – What do LEAs think about the crime lab services, *i.e.*, are they offering the right mix of services, are they doing a timely job at providing those services, and where are improvements needed?

This report has been compiled from numerous sources including a comprehensive tour of the crime lab, a review of internal/external documents, and in-person interviews of individuals with a direct working knowledge of the crime lab and its operations. Interview subjects included Chiefs of Police and police personnel with evidence-handling responsibilities, representatives of the District Attorney’s Office, the San Mateo County Private Defenders Panel, the Sheriff’s Office, and previous and current executive management of the crime lab.

Among the documentary items reviewed were the ASCLD/LAB certification report and related correspondence; current and past operating budgets for the crime lab; the Forensic Lab Manual (which includes administrative and procedural rules and regulations); price schedules and usage tables for crime lab services; annual revenue charts for provided services; and the Forensic Laboratory Physical Evidence Manual (February 2004; currently being updated).

Requests by members of the Grand Jury for crime lab documents, tours, and interviews were accommodated with full cooperation.

## Findings

The 2011 San Mateo County Civil Grand Jury found the following:

1. Representatives of the crime lab, LEAs and the District Attorney’s Office stated they have a positive working relationship in matters relating to the collection, handling and processing of forensic evidence.
2. Law Enforcement Agencies (LEAs) and representatives of the District Attorney’s Office reported that the ASCLD/LAB accreditation gives confidence that high standard practices

and policies are in place at the crime lab. Additionally, independent accreditation attaches value and respect to courtroom testimony given by crime lab personnel.

3. The crime lab's accreditation is current and corrects the one remaining deficiency listed in the 2006 San Mateo County Civil Grand Jury summary report: "...*obtain[ ] accreditation from ASCLD/LAB...*".
4. The crime lab uses a laboratory management system (THEMIS) with the capacity to track workflow progress on Item Submittals. However, there is no on-line access for non-laboratory personnel to view the progress of Item Submittals or to estimate turnaround time. There is no ability within THEMIS at this time for the District Attorney's Office to contribute/update critical scheduling information that could directly affect the progression and completion of item analyses and the availability of crime lab personnel for courtroom testimony.
5. The crime lab does not publish estimates for turnaround times by individual item or category of request. Requests from LEAs or the District Attorney's Office for expedited turnaround time are communicated by telephone to the Lab Director who then addresses such requests.
6. Internal cross-discipline training enables technical staff to be redirected as necessary to support other core crime lab services. This provides the crime lab with the capacity and flexibility to quickly address high-priority requests and/or changes in schedules.
7. In order to moderate expenses and efficiently utilize existing specialized skills, the crime lab uses lower-cost qualified interns for some specific tasks.
8. External training by the crime lab is offered both informally and by official request from an LEA. The crime lab will initiate training if it determines it will improve crime scene investigation and/or the collection of evidence or provide a better understanding of the crime lab's workflow process, procedures or systems.

## **Conclusions**

The 2011 San Mateo County Civil Grand Jury concludes that:

1. The crime lab has earned high respect and is regarded as an indispensable law enforcement tool for San Mateo County LEAs and the District Attorney's Office.
2. All requests for prioritization of Item Submittals must go through the Lab Director.
3. There is no external ability to electronically access information about the status and turnaround time for Item Submittals (which is otherwise unpublished).
4. The crime lab's current information management system (THEMIS) does not permit it to optimize communication with its customers, as the system is used exclusively for internal use.

5. Crime lab staffing levels can affect evidence turnaround times. Cross-training lab staff and using qualified interns are important tools to keep pace with high-demand workloads and out-of-lab responsibilities in each particular work unit.
6. There are no regularly scheduled training classes offered by the crime lab to LEAs, particularly on new and developing forensic analyses and techniques. Training has the potential to educate LEAs county-wide (instead of singularly) on new forensic techniques and reinforce the best practices of crime scene investigation.

## **Recommendations**

The 2011 San Mateo County Civil Grand Jury recommends that the Sheriff:

1. Maintain the current independent accreditation from the ASCLD/LAB.
2. Provide current crime lab training to all interested LEAs and the District Attorney's Office representatives at a minimum of twice a year.
3. Develop a process or capability that provides LEAs and the District Attorney's Office with up-to-date information regarding the status of Item Submittals and estimated completion dates.
4. Develop a process or capability that allows the District Attorney's Office to provide the crime lab with up-to-date information on trial schedules and the timing for needed analyses and expert witness testimony.

## **Appendix**

1. ASCLD/LAB - *International* Program Certificate #ALI-146-T (.pdf)



American Society of Crime Laboratory Directors / Laboratory Accreditation Board

ASCLD/LAB-International Program

### SCOPE of ACCREDITATION

Corresponds to  
Certificate Number

**ALI-146-T**

#### Name and Address of Accredited Laboratory

San Mateo County Sheriff's Office  
Forensic Laboratory  
50 Tower Road  
San Mateo, California 94402-4035

#### Laboratory Contact Information

Alex Karagianes, Laboratory Director  
Phone: 650-312-5309  
Fax: 650-356-0351  
E-Mail: akaragianes@co.sanmateo.ca.us

The management and technical operations of this laboratory were assessed and found to conform with ISO/IEC 17025:2005, the ASCLD/LAB-International Supplemental Requirements for Testing Laboratories (2006), and all other requirements of the ASCLD/LAB-International program. The laboratory was found to be competent and was accredited in the following area (s):

#### Field of Accreditation

Forensic Science Testing

#### Discipline (s)

- 1.0 Controlled Substances
- 2.0 Toxicology
- 3.0 Biology
- 4.0 Trace Evidence
- 5.0 Firearms and Toolmarks
- 6.0 Latent Prints
- 8.0 Crime Scene
- 10.0 Other

#### Categories of Testing:

- |   |   |
|---|---|
| 1.1 General Controlled Substance Analysis   | 5.1 Firearms                              |
| 2.2 Blood/Urine Alcohol                     | 5.2 Toolmarks                             |
| 3.1 DNA - Nuclear                           | 6.1 Latent Print Processing               |
| 3.3 Serology (Body Fluid Identification)    | 6.2 Latent Print Comparisons              |
| 4.3 Fiber and Textiles                      | 8.1 General Crime Scene                   |
| 4.7 Hair                                    | 10.1 Impression Evidence (Footwear/Tires) |
| 4.15 General Physical and Chemical Analysis | 10.6 Indented Writing                     |

Note 1: In this laboratory, testing category 10.1 is considered a part of the Trace Evidence discipline and 10.6 is considered part of the Latent Print discipline.

Note 2: Scope document revised October 8, 2010 to reflect new Laboratory Contact Information.

**Customers Served:** The San Mateo County Sheriff's Office - Forensic Laboratory is a local government laboratory and provides services and assistance to law enforcement agencies in San Mateo County and surrounding areas.

#### Accreditation Dates

**Date Issued:** September 11, 2010  
**Date Expires:** September 10, 2015  
**Date Last Updated:** October 8, 2010

John K. Neuner, Program Manager  
ASCLD/LAB-International





COUNTY OF SAN MATEO

# Office of the Sheriff

GREG MUNKS  
SHERIFF

CARLOS G. BOLANOS  
UNDERSHERIFF

TRISHA L. SANCHEZ  
ASSISTANT SHERIFF

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ADDRESS ALL COMMUNICATIONS TO THE SHERIFF

June 1, 2011

Hon. Joseph E. Bergeron  
Judge of the Superior Court  
Hall of Justice  
400 County Center, 2<sup>nd</sup> Floor  
Redwood City, CA 94063-1655

Dear Judge Bergeron,

The Sheriff's Office would like to thank the 2010-2011 Grand Jury for its comprehensive report on the Forensic Laboratory. It is obvious that a great amount of time and effort was employed to this task. Below please find the Sheriff's Office responses to the findings and recommendations.

## **FINDINGS:**

The Sheriff's Office agrees with all eight of the findings from the 2010-2011 Grand Jury Report. Finding Number Five, however, warrants a minor clarification.

Finding: "The crime lab does not publish estimates for turnaround times by individual item or category of request. Requests from LEAs or the District Attorney's Office for expedited turnaround time are communicated by telephone to the Lab Director who then addresses such requests." Expedited requests may also be communicated to the Unit Supervisor and this communication may be by telephone or e-mail.

## **RECOMMENDATION:**

1. Maintain the current independent accreditation from the ASCLD/LAB.

Response: This recommendation has been completed. The Sheriff's Office Forensic Laboratory has met all requirements for maintaining its ASCLD/LAB-International Program accreditation.

2. Provide current crime lab training to all interested LEAs and the District Attorney's Office representatives at a minimum of twice a year.

Response: As was stated in the 2010-2011 Grand Jury Report, the Laboratory does training throughout the year. This includes Alcohol Breath Instrument training, new Deputy District

Attorneys training, and DNA/Latent Print evidence collection training. During the upcoming year, the Laboratory will assess the training needs of our client agencies and implement accordingly.

3. Develop a process or capability that provides LEAs and the District Attorney's Office with up-to-date information regarding the status of Item Submittals and estimated completion dates.

Response: This recommendation will be implemented in the 2011-2012 Fiscal Year. RJ Lee Solutions, the company that produces the Laboratory Information Management System (THEMIS), has recently completed this module and approved it for sale. The Laboratory will purchase and adapt this module before the end of the Third Quarter of Fiscal Year 2011-2012.

4. Develop a process or capability that allows the District Attorney's Office to provide the crime lab with up-to-date information on trial schedules and the timing for needed analysis and expert witness testimony.

While mechanisms currently exist to coordinate DA workflow with laboratory work, the Forensic Laboratory will work with members of the District Attorney's Office to further enhance and stream-line this process.

Again, the Sheriff's Office would like to thank all those members of the Grand Jury for their analysis and insight as well as for the opportunity to respond.

Sincerely,



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Greg Munks, Sheriff