



2008-2009 SANTA CLARA COUNTY CIVIL GRAND JURY REPORT

SANTA CLARA VALLEY WATER DISTRICT – PART 2

NEW WATER QUALITY LABORATORY BUILDING OVERBUILT AND UNDERUSED?

Issue

Did the Santa Clara Valley Water District (District) spend more money than was reasonable and necessary for its new Water Quality Lab building (WQLB)? Was it needed at all? Now that it is built, can it be more effectively utilized?

Investigation Overview

In reviewing District spending for Part 1 of this series of reports on the District, the Grand Jury noted a statement from an audit of the District in 2000 (2000 Audit):

“The District Board is considering a project to build a new stand-alone, 15,000 square foot laboratory. However, it does not appear that the Board has established a clear mission for the laboratory...It may be possible to achieve significant efficiencies by “partnering” or contracting with one or more [local] laboratories...Given the high capital cost of laboratory facilities, the District Board should establish a clear laboratory mission.” (Malcolm Pirnie, Section 4 Page 49)

The District did not pursue the outsourcing recommendation of the 2000 Audit, and, in fact, completed an 18,400 square foot building for 18 Water Quality Lab (WQL) employees in 2008 in the same complex with District Headquarters on Almaden Expressway, off Blossom Hill Road. The WQL mission has not changed since 2000.

The Grand Jury questioned whether the construction of the facility exemplifies the patterns of overspending noted in Part 1.

Key Findings

Key findings from the inquiry are:

- Only 18 employees occupy the 18,400 sq. ft. building.
- The building was unnecessarily constructed as an essential facility, thereby increasing the cost significantly.
- The final \$21M cost of the building was \$13M over the original 2001 estimate of \$8.1M.

- The District is exploring the possibility of becoming a seller of water testing services to Santa Clara County water retailers in order to fully utilize its instrumentation and staffing capacity.

Water Testing in Santa Clara County

The WQL is a department in the Water Utility Enterprise (WUE), which is a division of the District. The WQL is responsible for testing drinking water, primarily imported from the Sacramento Delta to the District's three water treatment plants. The WUE distributes treated water through its pipelines to Santa Clara County water retailers who provide water to the general public through their own pipelines. All retailers are required by the State of California to do their own water testing.

Santa Clara County retailers who buy treated water from the District include San Jose Water Company, California Water Service Company and the cities of Milpitas, Mountain View, Santa Clara, and Sunnyvale, San Jose. These cities obtain water from the District but also from other resources such as their own underground wells and the San Francisco Utilities. The Great Oaks Water Company, a private retailer, and cities of Palo Alto, Morgan Hill, and Gilroy do not receive treated water from the District.

The cities of Sunnyvale and Palo Alto have their own testing facilities and are also certified to test waste water. All other retailers send their samples to private laboratories for testing. The District also uses MWH, a private laboratory located in Southern California, for a small portion of its testing. There are other private laboratories in the county which also test drinking water. (See Appendix C). Retailers will annually open up a bidding process to negotiate a contract for testing.

Water Testing Certification in California

Drinking water quality and its testing is highly regulated at both the federal and state levels. The Safe Drinking Water Act (SDWA), administered by the Environmental Protection Agency (EPA), is the national law safeguarding tap water. California drinking water is regulated under the California Department of Health Services (CDHS), which is responsible for enforcing the SDWA.

Water quality testing is based on CDHS/EPA regulatory guidelines. In order for any analysis to be valid, the laboratory, equipment and personnel must be certified. Certification is obtained through CDHS' Environmental Laboratory Accreditation Program ([ELAP](#)).

To be state certified, a laboratory must be equipped with appropriate instruments for the analysis in which it is seeking certification, satisfy the proficiency testing requirements, and pass the state quality assurance audit and inspection on an annual basis. Annual proficiency testing involves the analysis of samples with unknown concentrations of the constituents that the laboratory seeks to test. These blind samples are purchased from a state approved third party or vendor.

If a laboratory is not certified in a particular Field of Testing, it can send samples to any state-certified laboratory for analysis.

Because of the way water testing is controlled and regulated in California, all lab tests should be equally reliable. However, those who do in-house testing have the potential advantage of a quicker turnaround and more consistent sample results.

WQL Operations

As of September 22, 2008, the WQL was certified and accredited by the State of California Environmental Laboratory Accreditation Program (ELAP) and National ELAP (NEALP) Fields of Testing in the following areas:

- Microbiology of Drinking Water
- Inorganic Chemistry of Drinking Water
- Toxic Chemical Elements of Drinking Water
- Volatile Organic Chemistry of Drinking Water
- Semi-Volatile Organic Chemistry of Drinking Water
- Microbiology of Recreational Water

The WQL is staffed six days a week from 8-5, and with automation, it runs tests 24 hours a day. All procedures are computerized and function with state-of-the-art equipment. The only required human activity is sample preparation, visual checks of results, and documentation. Water samples are brought in daily from the three water treatment plants and the water distribution system's twenty-six turnout points throughout the county, where water moves into the retailers' jurisdiction. The WQL receives approximately 16,000 samples resulting in over 138,000 analytical tests per year.

The WQL performs 95% of the analyses for water taken from the three SCVWD treatment plants (Rinconada, Penitencia and Santa Teresa) which receive water from Sacramento River Delta, the Anderson and San Luis Reservoirs, as well as from select stations along the pipeline to retailers. Because the WQL cannot test for pharmaceuticals, cosmetics, drugs etc., the remaining 5% of the analyses is done by outside specialized labs. The WQL does not test ground water from wells on a regular basis and does not test creek or stream water.

Recent ISO 9001 and ISO 14001 assessments rated the Lab and Water Treatment Unit highly:

“...The Water Utilities-Lab and Water Treatment Unit has established a well organized process of Compliance Evaluation Inspection/audit reporting which clearly identifies the non-compliance issue, the regulatory drivers, and the responsible party. The other organizations within the District can benefit by developing similar non-compliance tracking and roll-up process.”

The WQL does testing over and above the requirements including aesthetics, and conducts proactive checks on possible deliberate contamination of drinking water. The WQL has the ability to detect 1500 toxic chemicals in water samples.

The WQL will be installing new test equipment to analyze pharmaceuticals and other substances to augment their current capabilities. This addition addresses the 5% of testing that they currently outsource. Additional staff for this would consist of one Ph.D. level technical analyst to run this new equipment.

Underutilized WQL Capacity

The work load of the WQL has remained relatively flat over the last five years at approximately 138,000 tests annually. The WQL is considering offering its excess analytical capacity to other government and quasi-government agencies like the Morgan Hill or Sunnyvale municipal water services. The WQL estimates that it will generate about \$500,000 to \$720,000 per year from these services, still have capacity to address unexpected problems, and do so without additional staff or instrumentation. Similar services have been offered by the San Francisco Water District and East Bay Municipal Utility District.

The District proposes to sell lab services to its own customers and believes it is not a conflict of interest that the District will be testing its own product because of the high level of regulation water quality testing in California.

Water Quality Lab Building

Cost Factors

The WQL building was constructed to replace the original testing laboratory that was housed in the Rinconada Water Treatment Plant built in 1968. Eventually two trailers were added to accommodate the growth, due to more stringent water quality requirements, bringing the lab area to 4000 square feet. Discussions began regarding the need for a new building.

The initial 1987 study called for a 7000 square foot building. The 2001 cost estimate was \$8.1M for a 16,500 square foot building. By the time the building was completed in 2008, the size had increased to 18,400 square feet at a total cost of \$21,195,666. (See Appendix A).

All existing equipment was moved to the new WQL building. New equipment has been added only to replace existing obsolete equipment. No additional staffing was needed. The WQL occupies the entire building, but rooms, labs, and offices are very sparsely laid out – with possibly 50% of the space remaining unused.

Essential Facility

According to a District newsletter, the building was “constructed as an ‘essential facility’ with a design standard similar to police and fire stations. The WQLB is intended to withstand a major earthquake to ensure uninterrupted water-quality testing during an emergency.”

It has a battery back-up (Uninterrupted Power Source) that starts immediately in the event of a power failure. Within eight seconds, a diesel generator takes over. With both back-ups in place, no computer information would be compromised and the analytical equipment would continue to function. The WQL is equipped with radio communications to stay in contact with state and federal agencies anywhere in the US and is also fully equipped and ready to continue functioning in a major disaster.

The WQL is not currently working with the District Emergency Operations group and is not part of its plan. Physical transport of water samples from treatment plants to a test lab may be problematic in an emergency. Further, any unaffected labs in the area or adjacent counties could be used.

When asked why it was built as an essential facility, the district officer responded in writing that “water facilities need to operate reliably on a continuous basis and need to be designed to withstand loss of power, earthquakes and other hazards,” but he did not provide legal code or regulation that mandates the building be constructed as an essential facility.

While the State of California regulates drinking water, it does not require that a seller of water have its own laboratory. It further does not require a wholesale distributor of water to have a laboratory building that is constructed as an essential facility.

Rinconada Water Treatment Plant

While touring the Rinconada Water Treatment Plant (RWTP), the site of the original water quality lab, the Grand Jury was presented with information regarding its expansion plans. It is of concern that the numerous long-term and short-term plans seem to exhibit similar issues of a protracted capital improvement plans with escalating, uncontrolled costs that are apparent in the history of the WQL building. The RWTP short-term and long-term plans call for improvements amounting to \$81,816,000 (through 2013) and \$195,438,000 (through 2019), respectively, totaling \$ 277, 254,000.

Findings and Recommendations

Findings have been reviewed with the subject agency.

Finding 1

Building costs for the Water Quality Lab were initially estimated at \$8.1 million. When the bids were submitted by contractors in February 2004, the low bid was \$11,344,921. The District reported that the Water Quality Lab Building was completed November 2008 at a cost of \$ 17,895,000. When the cost figures for the District Labor Design Phase, Consultant Design Fees and Consultant Engineering Support during Construction and the actual lab construction contract costs are factored in, the total cost for the Water Quality Lab Building is \$ 21,195,666. The building was paid for through water sales and ground water replenishment taxes.

Recommendation 1

Final Board approval before a project is put out for bidding must be based upon current independent cost justification.

Finding 2

The Rinconada Water Treatment Plant short-term and long-term plans call for improvements amounting to \$81,816,000 (through 2013) and \$195,438,000 (through 2019), respectively, totaling \$ 277, 254,000.

Recommendation 2

Retain the services of a qualified consultant to assess the proposed plans for any future major capital investments including, but not limited to, Rinconada Water Treatment Plant, to ensure they are necessary and are not over-designed. Solicit and follow the advice of independent experts regarding the costs and benefits of all substantial capital expenditures.

Finding 3a

The Water Quality Lab occupies the entire building but actually utilizes about half its square footage.

Finding 3b

District interviewees have stated that due to its current layout, the excess lab office space could not be leased out to another county agency or governmental group. However, in the view of the Grand Jury, the office area, composed primarily of cubicles formed by movable partitions could easily be converted to other uses. Laboratory space is sufficiently large to accommodate individual staff offices.

Finding 3c

Several members of the Board of Directors who were asked about the building were not able to justify the size of building and did not know that the building was constructed as an essential facility. The Board was remiss in its duty to oversee the scope and cost of the project.

Recommendation 3

The excess lab office space could be shared with another county agency or governmental group that needs an essential service facility, including the District's own Emergency Service Group, or possibly as a back-up site for the County Office of Emergency Services. The District should investigate these options.

Finding 4

Most testing in the Water Quality Lab is for drinking water from water treatment plants. It occasionally provides free ground water testing to private well owners. The Water Quality Lab does not sample or test river, stream or creek waters which are subject to urban water contamination problems, particularly nitrates and mercury.

Recommendation 4

No recommendation.

Finding 5

The Water Quality Lab has well documented processes and is audited regularly by the State of California. It has received positive comments in recent ISO assessments.

Recommendation 5

No recommendation.

Finding 6

The Water Quality Lab is not operating at full capacity and is looking at the possibility of using its spare capacity by analyzing samples from various other sources to generate extra revenue. While the subject is still under discussion, District officials have noted that they may only be able to sell services to municipal retailers. The estimated additional revenue is in the range of \$500K-\$720K.

Recommendation 6

No recommendation.

Finding 7

Water Quality Lab staff acknowledged that salaries at the District may be too high to be price-competitive against private labs, and they believe that their quality level justifies it.

Recommendation 7

No recommendation.

Finding 8a

The new Water Quality Lab Building was constructed as an “essential facility” with extensive seismic reinforcements, including a failsafe power system for total uninterrupted power.

Recommendation 8a

No recommendation.

Finding 8b

The District justifies building the Water Quality Lab Building as an essential facility by saying that “it is consistent with the design of water treatment plants and facilities that support their operation. The basis is that water facilities need to operate reliably on a continuous basis and need to be designed to withstand loss of power, earthquakes, and other hazards.”

Recommendation 8b

No recommendation.

Finding 8c

The Water Quality Lab building is not required by statute to be an essential service facility within the meaning of California Seismic Health and Safety Code §16007: *"Essential services building" means any building, including buildings designed and constructed, for public agencies used, or designed to be used, or any building a portion of which is used or designed to be used, as a fire station, police station, emergency operations center, California Highway Patrol office, sheriff's office, or emergency communication dispatch center."*

Recommendation 8c

No recommendation.

APPENDIX A

Water Quality Lab Building History

Date	Event	Cost
1987	Laboratory Needs Study; Recommended 7,000 sq. ft. Lab.	
1990	Needs study updated – additional space beyond Rinconada WTP would be needed	
1993	Initially proposed as part of Headquarters Facility Master Plan	
Mar.17, 1998	Presentation to BOD – required size of Lab to be 12,000 sq. ft. for core services, plus 3000 sq. ft. for services such as MTBE monitoring, and analysis for private water companies and well owners.	
Feb. 6, 2001	BOD approves agreement with Montgomery Watson for planning, design, construction management services. Includes requirement for Essential Facility. BOD removes limit of 15,000 sq. ft. amid concerns about lack of space.	
Sep.18 2001	BOD authorizes location on Almaden Campus.	
Dec. 4 and 18, 2001	Engineers report recommends 16,500 sq. ft. to meet needs of Lab for at least 10 yrs. With projected staffing of 23, Lab design to include solar collectors. Document cites previous estimate of \$6,000,000.and increase due to increased floor space. “Scheduled to be fully functional by April 2004.”	Engineer’s estimate \$8,100,000.

APPENDIX A

Water Quality Lab Building History

Date	Event	Cost
February 2004	Put out for bids. Expanded to 18,400 sq ft. (per BOD Consent calendar 12/16/03) Engineer's estimate \$9.6M.	Low Bid Received \$11,344,921
March 16, 2004	Staff recommends rejecting all bids. Board rejects all bids.	
	FY05-06 Budget includes \$13,500,000 for the building. Budget is in formal Budget review with County Board of Supervisors.	
May 30, 2006	BOD approves publicizing bids that have "improvements" suggested by staff. Projected cost is \$14M-\$17M.	
Aug 22, 2006	Board approves lowest bidder, Zovich construction. Gets budget adjustment of \$4.490M. Money to come from WUE Fund reserves.	\$17,540,329
Sep 16, 2008	Reported Lab 'finalized' construction Final Labor Construction Contract	\$17,802,255
Nov.12, 2008	Lab Declared COMPLETE Other Costs as reported by CFO SCVWD Labor Design phase Consultant Design Fee Lab Construction Contract Consultant engineer support SCVWD Labor construction phase TOTAL	\$1,570,519 1,140,084 17,895.003 590,060 TBD <u>\$21,195,666</u>

APPENDIX B
Santa Clara County
Environmental Laboratory Accreditation Program (ELAP)
Fields of Testing

			Microbiology	Inorganic Chemistry	Toxic Chemical Elements	Volatile Organic Chemistry	Semi-Volatile Organic Chemistry
Lab Type	Lab Name	City	Drinking Water Field of Test				
City	PALO ALTO REGIONAL WATER QUALITY CONTROL LABORATORY	PALO ALTO	x	x	x	x	
Commercial	ACCUTEST LABORATORIES - NORTHERN CALIFORNIA	SANTA CLARA		x			
Commercial	ACCUTEST LABORATORIES - NORTHERN CALIFORNIA	SANTA CLARA		x			
Commercial	ANACON TESTING LABORATORIES, INC.	MOUNTAIN VIEW	x	x	x		
Commercial	AQUALAB INCORPORATED	SANTA CLARA					
Commercial	CM ANALYTICAL, INC.	GILROY	x	x			
Commercial	DATALAB	SAN JOSE					
Commercial	EMSL ANALYTICAL, INC.	SAN LEANDRO	x		x		
Commercial	MACS LAB, INC.	HAYWARD			x		
Commercial	TESTAMERICA LABORATORIES, INC.	MORGAN HILL	x	x	x	x	
Commercial	TESTAMERICA LABORATORIES, INC.	MORGAN HILL					
Commercial	TORRENT LABORATORY, INC.	MILPITAS		x	x		
County	SANTA CLARA COUNTY PUBLIC HEALTH LAB	SAN JOSE	x				
Public Water System	CITY OF SUNNYVALE	SUNNYVALE	x	x	x	x	
Public Water System	SANTA CLARA VALLEY WATER DISTRICT	LOS GATOS	x	x	x	x	x

APPENDIX C

Recently Built Water Quality Laboratories in California

Orange County Water District Lab

- 20 chemists and lab technicians, 10 water-quality monitoring personnel
- 350,000 analyses of 18,000 water samples each year
- 39,000 sq ft
- \$24M
- Completion Spring 2009
- Environmentally efficient (Labs 21 laboratory spec)

Alameda Water Quality Laboratory

- 60,000 analyses/year
- 10 people
- Size: 7195 SF
- Cost: \$3.3 million
- Completion: July 2005

Marin Municipal Water District Water Quality Lab

- 5300 sq feet
- 120,000 water quality tests/yr
- Completed 2004

MWH Labs, Monrovia, CA

- This is the lab used by SCVWD when it sends out samples for testing
- \$3M in “State-of-the-art” instrumentation
- Staff is > 90
- 34,000 sq. ft., including 24,000 sq ft of lab space
- \$6M lab building
- Moved in Jan 2003

Metropolitan Water Quality Lab, La Verne, CA

- 58,000 square feet facility
- Serves 18 million Southern Californians
- Staff = 120
- 320,000 analytical tests on more than 50,000 samples per year

This report was **PASSED** and **ADOPTED** with a concurrence of at least 12 grand jurors on this 13th day of April, 2009.

Don Kawashima
Foreperson

June Nishimoto
Foreperson pro tem