

# White Paper #2: The Impact of TNI on Government Owned Laboratories in California, Florida, and New York

By David Kimbrough, Pasadena Water & Power

When the States of Florida and New York required all laboratories to be NELAP/TNI compliant the number of government owned laboratories decreased while when California allowed laboratories to choose to the use TNI, the number of government owned laboratories increased.

Presented to the Environmental Laboratory Technical Advisory Committee, June 15, 2016

# 1. Background

In 2015 the State Water Resources Control Board established The Expert Review Panel (ERP) was created to address the many shortcomings of the previous management of the Environmental Laboratory Accreditation Program (ELAP). The ERP made a number of recommendations, one of which was for ELAP to adopt a new Accreditation Standard. Here is what the ERP wrote:

"Adopt laboratory accreditation standards: The use of an appropriate accreditation standard by which laboratories are assessed is critical to ELAP's credibility, to the usability of the data generated, and to the general success of the program. The laboratory standards ELAP is using are insufficient and out of date. The State should adopt an existing, external set of accreditation standards as an immediate remedy and, in the future, refine it to enhance alignment with State-specific needs. The accreditation standards chosen must include quality system and method-based requirements."

No one to date has disagreed with the general point, ELAP's Accreditation Standard, which is its regulations, is badly out of date. The portion of ELAP's regulations dealing with data quality is very thin. No one has disagreed that ELAP needs a new Accreditation Standard. The main area of contention to date has been whether a new Accreditation Standard really needs to include a Quality System and if so, how that Quality System should be structured.

The ERP provided Three Options, or general approaches, for how to develop a Quality System. The ERP has suggested that accreditation requirements found in the documents of The NELAC Institute (TNI) would be helpful to ELAP, either in part or in their entirety, as a basis for the Quality System component of the new Accreditation Standard. Since the ERP's report has been released this one part of the ERP report has been the source of considerable controversy. Many

laboratories have objected to the use of TNI as the basis for the Quality Systems component of a new Accreditation Standard. They argue that the requirements found in the TNI documents are vague, ambiguous, and onerous. Further they do little if anything to improve data quality. They also note that the documents contain a vast number of requirements that produce an undue burden on laboratories. For example, in just Volume 1, Module 2 alone there are 231 separate management requirements and 300 technical requirements which every laboratory, no matter how large or small, must comply with. There are many more requirements found in the other modules of Volume 1 and 2. While this is a considerable amount of work for any laboratory to comply with, it is particularly a problem for smaller laboratories. 80% of laboratories accredited by ELAP have five staff members or fewer and many do not even have full time dedicated laboratory staff member. Many smaller treatment facilities have certified operators and other staff who share the laboratory work.

Most of the discussion to date has been about the **potential impact** of using TNI quality systems as part of the Accreditation Standard on smaller laboratories. There has been little discussion about the **actual impact** of the use of TNI on real laboratories where TNI quality systems have already been implemented. Among first states to adopt TNI were California, Florida, and New York. So in an attempt to measure the real effects of TNI in practice a study was conducted to assess the impact of TNI on laboratories owned by governments in these three states.

## 2. Study Design

The approach of this study was to examine the number of accredited laboratories owned by governments in a state where TNI quality systems were implemented and how those numbers changed over the years and compare that to the change in numbers of government owned laboratories in a state where TNI quality systems were not required.

In 2000 the State of Florida adopted the November 1998 National Environmental Accreditation Conference (NELAC, the predecessor of TNI) and adopted the 2003 NELAC requirements in 2002. California likewise authorized ELAP to adopt regulations to enforce the 1998 NELAC requirements. Other state laboratory accreditation programs did the same thing, such as New York and California.

Some states, like Florida and New York, required all laboratories to comply with the TNI quality systems requirements. Other state programs, such as California and Louisiana allowed each laboratory to choose whether they wanted to use the TNI quality system or not. Virginia and Wisconsin require commercial laboratories to use TNI quality system but not non-commercial laboratories.

So Florida and New York represent good test cases for the impacts of requiring TNI requirement on smaller government owned laboratories. More importantly the Florida Department of Environmental Protection maintains two databases that are available on line. One is a list of all currently accredited laboratories, the "Active" database. The other database includes all laboratories which were once accredited by the Florida Department of Health (FDOH) but are no longer. New York likewise has an on-line database for currently accredited laboratories and the author of this report has a database of TNI (NELAP) accredited laboratories from 2001.

California represents the other extreme; no government owned laboratories were required to use the TNI quality system and none chose to do so. The California Environmental Laboratory Accreditation Program (ELAP) has a database of currently accredited laboratories. This can be compared to past versions of that database. The author has a database of California ELAP laboratories from 2001 and downloaded both the list of currently accredited laboratories and a database from 2008.

By comparing how the number of government owned laboratories changed between these three states, the actual impact of requiring the use of the TNI quality system on government owned laboratories can be assessed.

#### 3. Results

#### a. Florida

The Florida DOH databases contain the dates of when the status of a laboratory was changed, e.g. from "State" to "NELAP" or "State" to "Inactive" for each Field of Accreditation that the laboratory had. Addresses and telephone numbers were also available in both databases. Laboratories physically located in the State of Florida and those without are both included. These databases were created in March of 2002 and records of changes in status prior to that are not available.

# https://fldeploc.dep.state.fl.us/aams/index.asp

There are a total of 376 laboratories in the Inactive database and 368 in the Active database. There were 202 Inactive laboratories which were physically located in Florida as were 233 Active laboratories. 89 of these inactive laboratories are associated with local municipalities and other government agencies, mostly laboratories associated with sewage treatment plants but also drinking water facilities, county and state public health laboratories, and university laboratories. Among the active laboratories located in Florida, there

were 109 utility owned (both public and private), 77 commercial, 21 Environmental Pollution laboratories, 11 Department of Health (State or County) laboratories, six university laboratories, three Federal laboratories, and 12 "others". Non-government laboratories on the inactive list included bottled water companies (Zephyrhills Spring Water Company), private utilities (The Villages Environmental Laboratory), commercial laboratories (Advanced Environmental Laboratories, Inc. – Gainesville), in-house laboratories (Tropicana), and so forth.

Not all of these inactive laboratories actually ceased to exist or even lost accreditation. This could be determined by determining which county the Inactive laboratory was physically located and then checking all laboratories in that county in the Active database. Some laboratories had simply changed their names, or moved to new locations, or were purchased by other laboratories, or were consolidated after a parent company was purchased. Zephyrhills Spring Water Company was purchased by a larger firm which already had a laboratory at another facility. Advanced Environmental Laboratories, Inc. – Gainesville simply moved a few blocks away and got a new certificate number.

However those reasons rarely apply to the government laboratories listed, although it did in some cases. Port St. Lucie Utility Systems Department Laboratory (E56489) was listed as inactive but had simply been renamed and given a new Department of Health (DOH) certificate number (E56718). In another case the City of Cocoa had had two laboratories, one for their wastewater treatment plant and one for their drinking water plant. After NELAP was implemented, the two were consolidated and the wastewater laboratory was closed. There were 10 government owned laboratories that were either moved, had a name change, or were consolidated. There were 79 that closed altogether.

For example of how this analysis worked, the City of Atlantic Beach had a laboratory (E52465) in their small Wastewater Treatment Plant (3.5 MGD). In the Inactive database this laboratory was recorded as analyzing Biochemical Oxygen Demand (BOD), Fecal Coliforms, Dissolved Oxygen, Chlorine Residual, Total Suspended Solids, Temperature, and pH. When these analytes were queried as to when the laboratory the results indicated that it had closed before March of 2002. A review of all laboratories in Duval County revealed no laboratories in Atlantic Beach at all and none associated with the City of Atlantic Beach anywhere in Duval County. The Director of the City's plants was contacted via email. He indicated in an email response that the City had closed its laboratory because of the expenses associated with NELAP accreditation (see below).

The City of Bartow Wastewater Treatment Plant Laboratory (E54339) is also listed as inactive. However a review of the database revealed no information about when the City of Bartow relinquished its accreditation. A telephone call to the treatment plant operator on duty revealed that the plant had indeed dropped their accreditation as soon as the TNI requirements were added

Of the 78 government owned laboratories located in Florida that actually closed completely, 44 of these laboratories closed within six years of Florida requiring all laboratories to comply with NELAP/TNI requirements. These laboratories tended to be smaller, performing smaller numbers of tests which were generally simpler and were associated with utilities, such as a sewage treatment plant. For example the City of Belle Glade's Wastewater Treatment Plant had been accredited for 17 analytes, including pH, NH3, NO3, NO2, TKN, Organic Nitrogen, BOD, DO, Chloride, Phosphorus, Conductivity, TDS, TSS, Total Coliforms, Fecal Coliforms, and E. coli. This laboratory, which is located in Palm Beach County, relinquished its accreditation in 2003. The laboratories that closed after the first six years tended to be the State and County public health laboratories. A few of these laboratories performed more complex tests, such as the Polk County Health Department laboratory analyzed Gross Alpha, Gross Beta, Radium 226, and Radium 228 which closed in 2016.

See Figure 1

#### b. California

In contrast, in California, in 2001 there were 727 certificates of accreditation issued to laboratories both physically in California and outside. Today there are 734 certificates, 108 of which are for laboratories located outside the State of California. Some certificates were for mobile laboratories and some laboratories held two certificates, one for NELAP accreditation and one for non-NELAP accreditation. So there is not a one to one correspondence between the number of certificates and the number of laboratories but the number of laboratories with more than one certificate is not large. Moreover, government owned laboratories do not have multiple certificates except when they have separate multiple fixed location laboratories.

In 2001 there were 284 government owned laboratories that were accredited by ELAP. By 2008 the number had grown to 312 and by 2015 the numbers was 345, an increase of 61. This despite the fact that 35 government owned laboratories had closed or were consolidated. For example, the Ventura Regional Sanitation District closed their laboratory in 2005 and contracted out all of their laboratory work. Scott Valley Water District made a similar decision about the

same time. Many of the government owned laboratories that closed were military facilities which closed, such as Brooks Air Force Base which closed in 2002. The City of Oxnard had two laboratories listed in 2001 but now only has one. The Elsinore Valley Municipal Water District closed its Canyon Lake Treatment Plant laboratory but maintains their Regional Laboratory. Los Alisos Water District merged with the Irvine Ranch Water District so their laboratories merged as well. Despite these closings many more government owned laboratories opened. Alameda County Water District, the California Men's Colony, and East Bay Municipal Utilities District all had laboratories in 2001 but opened second laboratories after 2008. The Cities of Arcata, Auburn, Banning, Calistoga, Pacifica, Paso Robles, Pismo Beach, and Hollister opened new laboratories after 2001. Cambria Community Services District (CSD, Quincy CSD, Rancho Murrieta CSD, Quartz Valley Indian Reservation all added new laboratories.

See Figure 2

## c. New York

As noted earlier, the New York Environmental Laboratory Accreditation Program (NY ELAP) has an on-line database of currently accredited laboratories.

# http://www.wadsworth.org/regulatory/elap/certified-labs

This database was queried for all government owned laboratories that were physically located in the State of New York. There were 121. The 2001 database was queried for all laboratories physically located in the State of New York. There was no field in the database for whether they were government owned or not. Then the list from the 2001 database was compared to the 2016 database and all of the laboratories that were on both lists were laboratories were identified. Then the 2001 database was searched for government laboratories not found in the 2016 database. There were 221 government owned laboratories in the 2001, a difference of 100. Actually more than 100 government laboratories were no longer accredited but there were a number of new government laboratories that added accreditation. One laboratory that closed was actually moved and renamed. The Hawthorne Laboratory in Hawthorne had been the Kensico Laboratory in Vahalla.

## 4. Conclusions

All three states, California, Florida, and New York had adopted the use of TNI requirements at the same time. Florida and New York required all laboratories to comply with the TNI requirements while California allowed laboratories to choose. Between 2001 and 2015 the number of government laboratories, particularly smaller utility laboratories decreased in both Florida and New York while in California the numbers increased. The data would indicate that the undue burden and excessive efforts to maintain TNI accreditation was the cause of the decline in the number of government laboratories in these two states.

## Addendum 1

# Email from the City of Atlantic Beach

#### Mr. Kimbrough

Yes, If was cast effect for us to sent to brook out than keep our accreditation. We have a small Wastewater Florit (3,5 MGO) with minimum staff.

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Please rate. Florida has a very bond public records law. Must written communications to or from day officide regarding city business are public records mustable to the public and musta-upon request. You a-mail communications only be subject to public disclosure.

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Mr. McMally

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If you so not mind my asking why aid the VIIP drop th accrecitation? Citi it has something to do with NEAP accrecitation?

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# Addendum 2

# Email from the Orange County, Florida

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Figure 1

# Government Run Laboratories on the Inactive List With Department of Health ID#, Organization Name, Year Accreditation was Relinquished, and Current Status

DOH ID	Organization	Year	County	Status
E72949	UF-IFAS Wetland		Alchua	Moved
	Biogeochemistry Laboratory	<u>.</u>		
E22794	FL Dept. of Health - Bradford	2005	Bradford	No Lab
	County Health Department	<u> </u>		
E63359	Kennedy Space Center		Brevard	Renamed
	Laboratory for Sewage			
	Treatment Operations			
E53727	City of Cocoa Water Treatment		Brevard	Consolidated
	Plant	ļ		
E53456	Brevard County Utility Services -	2001	Brevard	No Lab
	Mims Water Treatment Plant			
E56756	City of Lauderhill Water	2003	Broward	No Lab
	Treatment Plant	<u> </u>	· · · · · ·	
E56300	City of Pembroke Pines	2013	Broward	No Lab
	Wastewater Treatment Plant			
E56721	City of North Lauderdale Water	2004	Broward	No Lab
	Plant			
E56725	City of Tamarac Utilities	2015	Broward	No Lab
E	Laboratory			
E46093	Coral Springs Improvement	2002	Broward	No Lab
	District Laboratory	0001	<u> </u>	` \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
E56744	City of Hallandale Beach Water	2006	Broward	No Lab
EQ 1000	Treatment Plant	2222		
E34830	FL DEP - South District	2008	Charolette	No Lab
E0.477.0	Laboratory	0010	O:tom	N. I. a. I. a. I.
E24768	FL Dept. of Health - Citrus	2012	Citrus	No Lab
F0/7//	County Health Department	0011	Develo	Natala
E96766	Miami-Dade County Public	2011	Dade	No Lab
	Schools, Department of			
EZZ1070	Materials Testing and Evaluation NOAA - AOML Nutrient	2012	Dada	Nolah
E661069		2013	Dade	No Lab
E06897	Laboratory UF-TREC Soil and Water	2011	Dado	Nolah
LU007/	Laboratory	2011	Dade	No Lab
E32890	FL DEP - NE District	2008	Duval	No Lab
LUZ07U	LIFDEL - MF DOUGT	2000		LING FOR

E52465	City of Atlantic Beach Wastewater Treatment Plant	2001	Duval	No Lab
E11062	FL Department of Health - Pensacola Branch Laboratory	2015	Escambia	No Lab
E31887	FL DEP - NW District Chemistry Laboratory	2008	Escambia	No Lab
E71176	University of West Florida Wetlands Research Laboratory		Escambia	Moved
E51289	City of Port St. Joe Wastewater Treatment Plant Laboratory	2005	Gulf	No Lab
E54466	City of Wauchula Wastewater Treatment Plant	2003	Hardee	No Lab
E24704	FL Dept. of Health - Hernando County Health Department	2002	,Hernando	No Lab
E55378	City of Sebring Wastewater Treatment Plant	2003	Highland	No Lab
E25705	FL Dept. of Health - Highlands County Health Department	2013	Highland	No Lab
E34886	FL DEP - SW District Chemistry Laboratory	2008	Hillsborough	No Lab
E44301	Plant City Water Pollution Control Laboratory	2003	Hillsborough	No Lab
E43877	City Of Vero Beach, Wastewater Treatment Plant	2012	Indian River	No Lab
E53303	City of Vero Beach Environmental Control Laboratory	2005	Indian River	No Lab
E53306	City of Leesburg Wastewater Utility Laboratory	2014	Lake	No Lab
E51431	Florida State Hospital Wastewater Treatment Plant	2005	Lee	No Lab
E45849	Fiesta Village Wastewater Laboratory	2014	Lee	No Lab
E55419	Bonita Springs Utilities WRF Lab	2001	Lee	No Lab
E31640	FL DEP - Central Laboratory/Innovation Park Satellite Laboratory		Leon	Moved
E54461	City of Bradenton Water Reclamation Laboratory	2012	Manatee	No Lab
E54712	City of Bradenton Water Treatment Plant Laboratory	2005	Manatee	No Lab
E23708	FL Dept. of Health - Marion County Health Department	2011	Marion	No Lab

E63507	U.S. Geological Survey, WRD, OWQRL	2005	Marion	No Lab
E52335	City of Fernandina Beach Wastewater Treatment Plant	2006	Nasau	No Lab
E51561	Niceville, Valparaiso, Okaloosa County Regional Sewer Board, Inc.		Okaloosa	Renamed
E51497	City of Mary Esther Wastewater Treatment Plant	2003	Okaloosa	No Lab
E56584	Okeechobee Utility Authority Wastewater Treatment Plant Laboratory	2014	Okeechobee	No Lab
E56970	Okeechobee Utility Authority Wastewater Treatment Plant	2002	Okeechobee	No Lab
E56723	Okeechobee Utility Authority Water Treatment Plant	2005	Okeechobee	No Lab
E33863	FL DEP - Central District Laboratory	2008	Orange	No Lab
E13800	FL Dept. of Health - Bureau of Radiation Control	2012	Orange	No Lab
E53136	City of Winter Park Estates Laboratory	2007	Orange	No Lab
E43155	Orange County Environmental Protection Division	2004	Orange	Moved
E53321	City of Winter Garden Wastewater Pollution Control Facility		Orange	Renamed
E53421	City of St. Cloud Water and Wastewater Facilities	2002	Osceola	No Lab
E16122	FL Department of Health - West Palm Beach Branch Laboratory	2011	Palm Beach	No Lab
E56264	City of Royal Palm Beach Utilities Dept. Wastewater Treatment Plant Laboratory	2006	Palm Beach	No Lab
E56034	City of Belle Glade Wastewater Treatment Plant	2003	Palm Beach	No Lab
E24709	FL Dept. of Health - Pinellas County Health Department	2010	Pinellas	No Lab
E54369	City of Tarpon Springs Wastewater Treatment Plant	2005	Pinellas	No Lab
E54508	City of Dunedin Wastewater Treatment Plant	2010	Pinellas	No Lab
E54743	City of St. Petersburg - Cosme	2005	Pinellas	No Lab

	Water Treatment Plant	1		
E74916	Laboratory	2012	Pinellas	No Lab
	University of South Florida		<del>-</del>	
E54020	City of Clearwater - Marshall	2003	Pinellas	No Lab
	Street Water Pollution Control			
E0 (710	Laboratory	0017	Б	
E24710	FL Dept. of Health - Polk County	2016	Polk	No Lab
E 7 1000	Health Department	0001	D. II	
E54339	City of Bartow Wastewater	2001	Polk	No Lab
F 5 40 70	Treatment Plant Laboratory	0005	D	NI - 1 - I
E54373	City of Haines City Wastewater	2005	Polk	No Lab
	Treatment Plant	0001	D 11	<b>.</b>
E84746	FL DACS Central Dairy	2001	Polk	No Lab
FF 400 /	Laboratory	0001		
E54336	City of Fort Meade Wastewater	2001	Polk	No Lab
EE (0.1.1	Treatment Plant Laboratory	0007		
E54066	City of Winter Haven	2006	Polk	No Lab
FF. 100 F	Wastewater Treatment Plant #3	200.4	D 11	<b>N.1</b>
E54305	City of Winter Haven	2004	Polk	No Lab
	Wastewater Treatment Plant #2			
F5.40.4.4	- Lake Conine	0000	D - II.	NI - I - I-
E54266	City of Auburndale Wastewater	2003	Polk	No Lab
FF0474	Laboratory City of Balatka Wastowatan	2004	Duthompo	No Loib
E52474	City of Palatka Wastewater	2004	Putnam	No Lab
E22779	Treatment Plant	2005	Putnam	No Lab
EZZ//9	Dept. of Health - Putnam	2005	Fullani	NO LOD
*.	County Environmental Health Department			
E54426	City of Venice - Eastside	2003	Sarasota	No Lab
C344Z0	Wastewater Treatment Plant	2003	Salasola	NO LOD
E54524	Florida Governmental Utility	2003	Sarasota	No Lab
E34324	Authority - Gulf Gate Laboratory	2003	Sarasora	INO EGD
E24711	FL Dept. of Health - Sarasota	2009	Sarasota	No Lab
L24/11	County Health Department	2007	Salasola	INO EGO
E54736	City of Sarasota Water Plant		Sarasota	Moved
L34730	Laboratory		Surasora	Moved
E54326	City of Venice Water	2004	Sarasota	No Lab
LU4020	Reclamation Laboratory	2004	Janasola	THO EGO
E53372	City of Sanford Water	2004	Seminole	No Lab
LUUU/ Z	Reclamation Facility Laboratory	2004	1 2011 III IOIO	INO EGID
E53390	Seminole County Environmental	2002	Seminole	No Lab
LUUU7U	Services Greenwood Lakes	2002		I NO EGO
	Treatment Plant			
L	<u> Luodintorii iditi</u>	l	<u></u>	

E53416	City of Winter Springs Wastewater Reclamation Facility	2015	Seminole	No Lab
E22770	FL Dept. of Health - St. Johns County Health Department - Environmental Eng.	2011	St. Johns	No Lab
E76888	University of Florida Soil and Water Science Laboratory	2012	St. Lucie	No Lab
E26789	FL Dept. of Health - St. Lucie County Health Department	2007	St. Lucie	No Lab
E76857	UF / IFAS / IRREC - Lab 25 (C. Wilson)	2015	St. Lucie	No Lab
E56489	Port St. Lucie Utility Systems Department Laboratory		St. Lucie	Moved
E36885	FL DEP - SE District Lab	2007	St. Lucie	No Lab
E52400	City of Perry Wastewater Treatment Plant	2002	Taylor	No Lab
E23111	Volusia County Environmental Health Laboratory	2014	Volusia	No Lab
E53732	City of New Smyrna Beach Water Treatment Plant Laboratory	2006	Volusia	No Lab
E53758	Port Orange Utility - Garnsey Water Treatment Plant Laboratory		Volusia	Consolidated
E53343	City of Ormond Beach Public Utilities	2005	Volusia	No Lab

Figure 2

Government Run Laboratories Accredited by California ELAP in 2001, 2008, and 2016 and Current Status

2001	2008	2015	Status
AGUA DE LEJOS TREATMENT	Х	Agua De Lejos Treatment	
PLANT LABORATORY		Plant Laboratory	
ALAMEDA COUNTY			Consolidated
ENVIRONMENTAL HEALTH			
LABORATORY			
ALAMEDA COUNTY PUBLIC	X	Alameda County Public	
HEALTH LABORATORY		Health Laboratory	
ALAMEDA COUNTY WATER	Х	Alameda County Water	
DISTRICT		District Water Quality Lab	
		Alameda County Water	·
		District Water Treatment	*
		Plant 2	, , , , , , , , , , , , , , , , , , , ,
		Alvarado Wastewater	
		Chemistry Lab.	
	X	American Canyon	
		Wastewater Treatment	
		Laboratory	
ANTELOPE VALLEY-EAST KERN	Х	Antelope Valley-East Kern	
WATER AGENCY	10	Water Agency	
,		Arcata - City Water Quality	
		Laboratory	
	X	Banning - City WWTP	
		Laboratory	
BARSTOW WASTEWATER	X	Victor Valley Wastewater	
RECLAMATION LABORATORY		Reclamation Authority Lab	
BIG BEAR AREA REGIONAL	X	Big Bear Area Regional	
WASTEWATER AGENCY		Wastewater Agency	
BRYTE BEND WATER	Х	Bryte Bend Water	
TREATMENT PLANT		Treatment Plant - City of	
LABORATORY		Sacramento	
BURBANK CITY WATER	X	Burbank City Water and	
DEPARTMENT		Power	
BROOKS AIR FORCE BASE			Closed
ARMSTRONG LABORATORY /			
OEA			
BURBANK WASTEWATER	X	City of Burbank Water	
TREATMENT FACILITY		Reclamation Plant	

LABORATORY		Laboratory	
CALIFORNIA DEPARTMENT OF	х	CA Dept of Water	
WATER RESOURCES		Resources Bryte Chemical	
		Laboratory	
CALIFORNIA DEPARTMENT OF	Х	California Men's Colony	
CORRECTIONS		Wastewater Treatment	
		Plant	
	х	California Men's Colony	
		Water Treatment Plant	
CALIFORNIA DEPARTMENT OF	Х	CA Dept of Fish & Game,	
FISH AND GAME		Fish & Wildlife Water	
		Pollution	
	X	CA Dept.of Food & Ag,	
		Center for Analytical	
		Chemistry	· ·
DEPT OF PARKS AND	Х	Cal Dept of Parks and	
RECREATION LABORATORY		Recreation Laboratory	
	Х	California Fish & Game -	
		Aquatic Toxicology Lab	
CAMARILLO SANITARY		Camrosa Water	
DISTRICT		Reclamation Facility	
		Laboratory	
	Х	Cambria Community	
		Services District	
		Calistoga City Dunaweal	
		WWTP Laboratory	
CAMROSA WATER DISTRICT	X	. Camrosa Water District	
LABORATORY		Laboratory	
CANYON LAKE WATER		(EVMWD)	Consolidated
TREATMENT PLANT LAB			
CARMEL AREA WASTEWATER	x	Carmel Area Wastewater	
DISTRICT		District	
CARMEL VALLEY COUNTY			Closed
SANITATION DISTRICT			
CARPINTERIA SANITARY	x	Carpinteria Sanitary District	
DISTRICT LABORATORY			
CASITAS MUNICIPAL WATER	x	Casitas Municipal Water	
DISTRICT		District	
CASTAIC LAKE WATER	×	Castaic Lake Water	
AGENCY		Agency.	
CENTRAL COAST WATER	×	Central Coast Water	
AUTHORITY		Authority	
CENTRAL CONTRA COSTA	Х	Central Contra Costa	

SANITARY DISTRICT		Sanitary District	
CENTRAL MARIN SANITATION AGENCY	X	Central Marin Sanitation Agency	
CHINO BASIN MUNICIPAL WATER DISTRICT		/ goney	Closed
CITY OF ANAHEIM WATER QUALITY LABORATORY	Х	City of Anaheim Water Quality Laboratory	
CITY OF ANTIOCH WATER TREATMENT PLANT	X	City of Antioch	
		City of Auburn - Operation Management International	
CITY OF ATWATER	X	City of Atwater Wastewater Treatment Facility Lab.	
CITY OF AVALON	X	City of Avalon Wastewater Treatment Facility Laboratory	
CITY OF BAKERSFIELD - WASTEWATER TREATMENT PLANT 3	x	City of Bakersfield - Wastewater Treatment Plant #3	
CITY OF BAKERSFIELD WASTEWATER TREARMENT PLANT 2	Х	City of Bakersfield Wastewater Treatment Plant #2	
	Х	City of Banning WWTP Laboratory	
CITY OF BENICIA WASTEWATER FACILITY	Х	City of Benicia Wastewater Laboratory	
CITY OF BENICIA WATER TREATMENT PLANT LABORATORY	Х	City of Benicia Water Plant Laboratory	
		City of Brentwood Water Quality Laboratory	
CITY OF BRAWLEY	Х	City of Brawley Wastewater Laboratory	·
CITY OF BURLINGAME WASTEWATER TREATMENT PLANT	X	Veolia Water ~ Burlingame Wastewater Facility	
CITY OF CHICO WATER POLLUTION CONTROL PLANT	X	City of Calexico City of Chico Water Pollution Control Plant Lab	
CITY OF COALINGA WATER TREATMENT PLANT LAB		, one norr confiner familia	Closed
	Х	City of Corning -	

		T.14.	
		Wastewater Treatment	
		Plant	
	Х	City of Davis Wastewater	
·		Treatment Plant	
EL CENTRO WASTEWATER	Х	City of El Centro .	
TREATMENT PLANT		Wastewater Treatment	
		Plant	
CITY OF ESCONDIDO WATER	X	City of Escondido Water	
QUALITY LABORATORY		Quality Laboratory	
CITY OF EUREKA WATER AND	Х	City of Eureka Water &	
WASTEWATER LABORATORY		Wastewater Laboratory	
CITY OF FAIRFIELD WATER	Х	City of Fairfield	
TREATMENT PLANT		,	
CITY OF FORTUNA	Х	City of Fortuna Wastewater	
WASTEWATER TREATMENT		Treatment Plant	
PLANT			
·· ··	X	City of Fresno Surface	
	'`	Water Treatment Facility	
CITY OF FRESNO	X	City of Fresno Wastewater	:
WASTEWATER MANAGEMENT	^	Management Division Lab	
LABORATORY		Trianagornom Division Lab	
CITY OF GRASS VALLEY	X	City of Grass Valley - Water	
CITY OF ORAGS VALLET	^	Quality Laboratory	
CITY OF HANFORD -	x	City of Hanford	
WASTEWATER TREATMENT	^	Wastewater Treatment	•
PLANT LAB		Plant	
The state of the s	\	The state of the s	
CITY OF HAYWARD WPCF	X	City of Hayward Wpcf	
LABORATORY	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Laboratory City of Hollister Transforment	
CITY OF HOLLISTER	X	City of Hollister Treatment	·
TREATMENT PLANT		Plant	Class
CITY OF HOLTVILLE	1		Closed
CITY OF IMPERIAL			Closed
WASTEWATER PLANT			
LABORATORY			
CITY OF LIVERMORE WATER	X	City of Livermore Water	
RÉCLAMATION PLANT		Reclamation Plant	
CITY OF LODI WHITE SLOUGH	X	City of Lodi White Slough	
WPCF		WPCF Lab	
CITY OF LOMPOC WATER	X	City of Lompoc Water	
TREATMENT PLANT		Treatment Plant Lab	
CITY OF LOS ANGELES DEPT	X	City of Los Angeles DWP	
OF WATER & POWER			,
CITY OF LOS ANGELES DEPT.	Х	City of Los Angeles DWP	

OF WATER & POWER		Environmental Lab.	
	- L		
CITY OF LOS ANGELES	X	City of Los Angeles DWP-	
STANDARDS TESTING		Standards Testing Labor	
LABORATORY	<u> </u>	City of Mandage MANATO	
	X	City of Madera WWTP	
OITY OF MANITEON WOOD		Laboratory	
CITY OF MANTECA WQCF	X	City of Manteca WQCF	
LAB	1.	Lab	
CITY OF MARTINEZ WATER	X	City of Martinez	
TREATMENT PLANT			
CITY OF MERCED	X	City of Merced	
WASTEWATER TREATMENT		Wastewater Laboratory	
PLANT			
CITY OF MILLBRAE WATER	Х	City of Millbrae Water	
POLLUTION CONTROL		Pollution Control	
CITY OF MODESTO	Х	City of Modesto Water	
		Quality Laboratory	
CITY OF MT. SHASTA	х	City of Mt Shasta	
WASTEWATER LABORATORY		Wastewater Laboratory	
CITY OF NAPA, PUBLIC	Х	City of Napa	
WORKS DEPT.		,	·
CITY OF NEEDLES			Closed
CITY OF OCEANSIDE	X	City of Oceanside Water	
		Utilities Department Lab	
CITY OF ORANGE WATER	1 <sub>x</sub>	City of Orange	
DEPARTMENT	``	2, 3. 3.39	•
CITY OF OXNARD	X	City of Oxnard	
LABORATORY SERVICES			
PROGRAM			
CITY OF OXNARD WATER			Consolidated
LABORATORY			Johnson
		City of Pacifica, Calera	
		Creek Plant	
CITY OF PALM SPRINGS	x	Palm Springs Wastewater	
CITT OF FALM SEKINGS	^	Treatment Plant	
CITY OF PASADENA WATER	+		
	X	City of Pasadena Water	
QUALITY LABORATORY		Quality Laboratory	
		City of Paso Robles Water	
		Quality Laboratory	
CITY OF PETALUMA	X	City of Petaluma Water	
WASTEWATER TREATMENT		Quality Laborator	
PLANT			
İ	1	City of Pismo Beach Water	

		Quality Laboratory	
CITY OF PLACERVILLE,	x	City of Placerville Water	
HANGTOWN CREEK WWTP	^-	Reclamation Facility	
CITY OF POMONA WATER	x	Pomona Treatment Plant	
DIVISION LABORATORY	^	Laboratory	
CITY OF PORTERVILLE	×	City of Porterville	
LABORATORY	** •	Laboratory	
CITY OF POWAY WATER			Closed
TREATMENT PLANT			
CITY OF RED BLUFF WATER	X	City of Red Bluff Water	
RECLAMATION PLANT LAB.		Reclamation Plant Lab	
CITY OF REDDING PUBLIC	Х	City of Redding Clear	
WORKS DEPARTMENT		Creek Lab	
CITY OF REDDING STILLWATER	X	City of Redding Stillwater	
WW TREATMENT FACILITY		Lab	
CITY OF REDLANDS	X	City of Redlands Joint	
LABORATORY		Utilities Lab	
CITY OF REEDLEY	Х	City of Reedley	
WASTEWATER TREATMENT		Wastewater Treatment	
PLANT LAB.		Plant Lab	·
CITY OF RICHMOND	Х	City of Richmond	
WASTEWATER POLLUTION		Wastewater Treatment	
CONTROL PLT		Plant L	
CITY OF RIVERSIDE	X	City of Riverside -	
LABORATORY SERVICES		Laboratory Services	
CITY OF ROSEVILLE	x	City of Roseville Dry Creek	
		Water Quality Lab	
·	İ	City of Roseville Pleasant	
		Grove Water Quality Lab	
CITY OF SACRAMENTO	X	City of	·
WATER QUALITY		Sacramento, Water	
LABORATORY		Quality Lab	
CITY OF SAN BERNARDINO			Closed
WATER DEPARTMENT		444-447-448	
CITY OF SAN BUENAVENTURA	X	City of San Buenaventura	
SANITATION LABORATORY		Laboratory	
CITY OF SAN CLEMENTE	X	City of San Clemente	
WATER QUALITY		Water Quality Laboratory	
LABORATORY			
CITY OF SAN DIEGO - MARINE	Х	City of San Diego's	
MICRO LABORATORY		Industrial Waste Laboratory	
CITY OF SAN DIEGO	X	City of San Diego - Marine	
INDUSTRIAL WASTE		Microbiology Lab	,

LABORATORY	·		
CITY OF SAN DIEGO	Х	City of San Diego Met.	
WASTEWATER CHEMISTRY		Wastewater Dept. Tox Lab	
LABORATORY			
CITY OF SAN DIEGO WATER	х	City of San Diego Water	
QUALITY LABORATORY		Quality Laboratory	
CITY OF SAN LUIS OBISPO	Х	City of San Luis Obispo	
WATER RECLAMATION			
FACILITY			
CITY OF SAN MATEO	Х	City of San Mateo	
		Wastewater Treatment	
•		Plant	
CITY OF SANTA BARBARA	Х	City of Santa Barbara -	
		Water Resources Lab	
CITY OF SANTA MARIA	Х	City of Santa Maria	
WASTEWATER TREATMENT LAB		Wastewater Treatment	
		Plant Lab	
CITY OF SANTA MONICA	Х	City of Santa Monica	
WATER DIVISION		Water Quality Laboratory	
CITY OF SCOTTS VALLEY	Х	City of Scotts Valley	
		Wastewater Reclamation	
		Facility Lab	
CITY OF SHASTA LAKE	Χ .	City of Shasta Lake	
,		Wastewater Treatment	
		Facility	
	X	City of Simi Valley Water	
		Quality Control Laboratory	
	X	City of South San	
		Francisco-San Bruno	
CITY OF STOCKTON	Х	City of Stockton, Municipal	
MUNICIPAL UTILITIES DEPT.		Utilities Department	
LAB			
CITY OF ST. HELENA			Closed
CITY OF SUNNYVALE WATER	Х	City of Sunnyvale	
POLLUTION CONTROL LAB		Environmental Laboratory	
CITY OF THOUSAND OAKS			Closed
UTILITIES DEPARTMENT			
CITY OF TRACY PUBLIC	Х	City of Tracy Public Works	
WORKS DEPARTMENT		Department Laboratory	
CITY OF TULARE WATER	Х	City of Tulare	
POLLUTION CONTROL			
FACILITY	I		

CITY OF VACAVILLE WATER	X	City of Vacaville Water	
QUALITY LABORATORY		Quality Laboratory	
CITY OF VALLEJO WATER	X	City of Vallejo Water	
DEPARTMENT LABORATORY		Department Laboratory	
CITY OF VISALIA	X	City of Visalia Water	
WASTEWATER TREATMENT		Conservation Plant	
PLANT		Laboratory	
CITY OF WATSONVILLE	X	City of Watsonville Utilities	
		Department Laboratory	
CITY OF WEST SACRAMENTO	X	George Kriskoff Water	
WW TREATMENT PLANT LAB		Treatment Plant	
·	X	City of Woodland	
		Wastewater Operations	
		Lab	
	X	Coachella Sanitary District	
COACHELLA VALLEY WATER	X	Coachella Valley Water	
DISTRICT		District Laboratory	
COUNTY OF ORANGE PUBLIC			Closed
FACILITIES & RESOURCES			
COUNTY OF RIVERSIDE			Closed
DEPARTMENT OF HEALTH			
COUNTY OF SAN LUIS OBISPO	X ·	San Luis Obispo County	
WATER QUALITY LAB		Water Quality Lab	
		CSUMB Los Huertos Lab	
	Х	Contra Costa Water District	
		Lab	
DESERT WATER AGENCY	Х	Desert Water Agency	
	Х	Crescent City Water	
		Quality Laboratory	
·	х	Delta Diablo Sanitation	
		District Laboratory	
DUBLIN SAN RAMON	Х	Dublin San Ramon Services	
SERVICES DISTRICT		District	
EAST BAY MUNICIPAL UTILITY	Х	East Bay Municipal Utility	
DISTRICT		District	
		East Bay Municipal Utility	
		District Emergency Facility	
EASTERN MUNICIPAL WATER	Х	Eastern Municipal Water	
DISTRICT - PERRIS		District	
EL DORADO COUNTY HEALTH	X	El Dorado County Public	
DEPARTMENT		Health Department	
EL TORO WATER DISTRICT	Х	El Toro Water District	
LABORATORY		Laboratory	

Closed

HEALTH LABORATORY		Health Laboratory	
		IIRMES	
IMPERIAL COUNTY PUBLIC	Х	Imperial County Public	·
HEALTH LABORATORY		Health Laboratory	
INYO COUNTY	X	Inyo County Environmental	
ENVIRONMENTAL HEALTH		Health Services	
LABORATORY	,	·	
		Inyo County Water Lab	
	Х	Inland Empire Utilities	
		Agency Laboratory	
IRVINE RANCH WATER	Х	Irvine Ranch Water District	
DISTRICT LABORATORY		<i>y</i>	
		Jamieson Canyon Water	
		Treatment Plant	
	X	John C. Bargar Water	
		Treatment Plant	
KERN COUNTY PUBLIC	X	Kern County Public Health	
HEALTH LABORATORY		Laboratory	
KERN COUNTY WATER	Х	Kern County Water	
AGENCY	<u> </u>	Agency, Water Quality Lab	
KERN SANITATION AUTHORITY	×	Kern Sanitation Authority	
KINGS COUNTY PUBLIC	X	Kings County Public Health	
HEALTH LABORATORY		Laboratory	
	Х	Kirkwood Meadows Public	
		Utilities District	
LAGUNA COUNTY	x	Laguna County Sanitation	
SANITATION DISTRICT		District	
LAGUNA ENVIRONMENTAL	x	Laguna Environmental	
LABORATORY		Laboratory	
LAKE ARROWHEAD	X	Lake Arrowhead	
COMMUNITY SERVICES		Community Services District	·
LAS PALMAS RANCH WATER	X	Lake Bard Water Filtration	
RECLAMATION FACILITY		Plant Laboratory	•
	X	Lake Wildwood	
		Wastewater Treatment	
		Plant	
	×	Las Gallinas Valley Sanitary	
		District	
LAS VIRGENES MUNICIPAL	X	Las Virgenes Municipal	
WATER DISTRICT		Water District Laboratory	
	x	Latham Regional	,
		Treatment Plant Laboratory	
LAWRENCE BERKELEY	X	LBNL Environmental	

LABORATORY	T	Measurements Laboratory		
LAWRENCE LIVERMORE NATIONAL LABORATORY	Х	Lawrence Livermore National Laboratory		
	X	Linda County Water District WTP		
LOMPOC REGIONAL WASTEWATER RECLAMATION LAB.	X	Lompoc Regional Wastewater Reclamation Lab		
LONG BEACH TREATMENT PLANT LABORATORY	Х	Long Beach Treatment Plant Laboratory		
	Х	Long Beach Public Health Laboratory		
	X	Long Beach Water Department Water Quality Lab		
LOS ALISOS WATER DISTRICT		(El Toro Water District)	Consolidated	
LOS ANGELES COUNTY	Х	Los Angeles County		
AGRICULTURAL COMMISSION		Agricultural Commissioner		
LOS ANGELES COUNTY	x	Los Angeles County Public		
PUBLIC HEALTH LABORATORY		Health Lab		
LOS ANGELES COUNTY	Χ	Joint Water Pollution	4	
SANITATION DISTRICT		Control Water Quality Lab		
LOS ANGELES COUNTY	×	Los Coyotes Treatment		
SANITATION DISTRICT		Plant Laboratory		
LOS ANGELES COUNTY	Х	Saugus Treatment Plant	·	
SANITATION DISTRICT		Laboratory		
LOS ANGELES COUNTY	х	Water Pollution Control		
SANITATION DISTRICT		Laboratory	and the second s	
LOS ANGELES COUNTY	X	Valencia Treatment Plant		
SANITATION DISTRICT		Laboratory		
LOS ANGELES COUNTY	×	Whittier Narrows Treatment		
SANITATION DISTRICT		Plant Laboratory		
LOS ANGELES COUNTY	×	Pomona Treatment Plant	· [	
SANITATION DISTRICT		Laboratory		
LOS ANGELES COUNTY	×	Lancaster Treatment Plant		
SANITATION DISTRICT		Laboratory		
los angeles harbor	х	Port of Los Angeles Testing		
DEPARTMENT TESTING LAB		Laborator		
MADERA COUNTY PUBLIC	X	Madera County Public		
HEALTH LABORATORY		Health Laboratory		
MALIBU MESA WATER	X	Malibu Mesa Water		
RECLAMATION FACILITY		Reclamation Plant Lab		
MAMMOTH COUNTY WATER	Х	Mammoth Community		
1717 1171171 COOITH 1777 (161)		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		

DISTRICT LAB		Water District	
MARIN COUNTY PUBLIC	χ .	Marin County Public Health	
HEALTH LABORATORY		Laboratory	
MARIN MUNICIPAL WATER	Х	Marin Municipal Water	
DISTRICT	-	District	
MARINA COAST WATER	Х	Marina Coast Water District	
DISTRICT		·	
MARIPOSA PUBLIC UTILITY	Х	Mariposa Public Utility	
DISTRICT		District	
		Meadowlark Water	
		Reclamation Facility Lab	
MERCED COUNTY	x	Merced County Public	
DEPARTMENT OF PUBLIC		Health Laboratory	
HEALTH LAB			
	X	Metro Biosolids Center	
·		Wastewater Chemistry SD	
METROPOLITAN WATER	X	MWDSC- Joseph Jensen	
DISTRICT OF SO. CAL.		WTP Lab.	
METROPOLITAN WATER	X	MWDSC - F.E. Weymouth	
DISTRICT OF SO. CAL.		WTP Laboratory	
METROPOLITAN WATER	Х	MWDSC - Henry J. Mills WTP	ĺ
DISTRICT OF SO. CAL.		Lab	
ROBERT B. DIEMER FILTRATION	X	MWDSC - Robert B. Diemer	
PLANT LABORATORY		WTP Lab.	
METROPOLITAN WATER	X ·	MWDSC - Robert A. Skinner	
DISTRICT OF SO. CAL.		WTP Lab	
METROPOLITAN WATER	×	MWD - La Verne Water	
DISTRICT OF SO. CAL.		Quality Laboratory	
MISSION SPRINGS WATER	X	Mission Springs Water	
DISTRICT		District	
MODESTO REGIONAL WATER	×	Modesto Regional Water	
TREATMENT PLANT		Treatment Plant	
		Montecito Sanitary District	
· · · · · · · · · · · · · · · · · · ·		Laboratory	
MONTEREY COUNTY	×	Monterey County	
CONSOLIDATED		Consolidated	
LABORATORY		Environmental Lab	
MONTEREY REGIONAL WATER	Х	Monterey Regional Water	
POLLUTION CONTROL AGCY		Pollution Control Agency	
MORRO BAY - CAYUCOS WW	Х	Morro Bay - Cayucos	
TREATMENT PLANT		Wastewater Treatment	
		Plant City	
	Х	Mt. Shasta - City	

	·- [	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
		Wastewater Laboratory	
MOULTON NIGUEL WATER	X	South Orange County	
LABORATORY		Wastewater Authority Reg.	
		Lab	
MT. VIEW SANITARY DISTRICT	Х	Mt. View Sanitary District	
NAPA COUNTY HEALTH &	X	Napa - Solano County	,
HUMAN SERVICES		Public Health Laboratory	
LABORATORY			
NAPA SANITATION DISTRICT	Х	Napa Sanitation District	
		Laboratory	
NAVAL WEAPONS STATION			Closed
NEVADA IRRIGATION	Х	Nevada Irrigation District	
DISTRICT WATER		Water Laboratory	
LABORATORY			
NEWPORT BEACH CITY	1		Closed
WATER LABORATORY			
NILAND SANITARY DISTRICT	X	Niland Sanitary District	
NORTH BAY REGION WATER	X	North Bay Regional Water	
TREATMENT PLANT		Treatment Plant	
TIX box / XII V 3 box / XI I box / XI V /	X	North City Wastewater	
	\ \frac{1}{\cdot}	Chemistry Lab	
NORTH COAST COUNTY	1 <sub>x</sub>	North Coast County Water	
WATER DISTRICT	^	District	
NORTH MARIN WATER	1 <sub>x</sub>	North Marin Water District	
DISTRICT	^	110111111111111111111111111111111111111	
	X	North of River Sanitary	
		District No. 1	
		North San Mateo County	
		Sanitation District	
NOVATO SANITARY DISTRICT	1 <sub>x</sub>	Novato Sanitary District	
LABORATORY	``	Laboratory	
OCEANSIDE WPCP	1 <sub>×</sub>	Oceanside - City Water	
LABORATORY DIVISION	^`	Utilities Department Lab	
OJAI VALLEY SANITATION	· X	Ojai Valley Sanitation	
DISTRICT	^	District	
OLIVEHURST PUBLIC UTILITY	X	Olivehurst Public Utility	
DISTRICT	^	District Lab	
ORANGE COUNTY PUBLIC	X	Orange County Public	
HEALTH LABORATORY	^	Health Laboratory	
ORANGE COUNTY	X	Orange County Sanitation	
SANITATION DISTRICT	^	District	
ORANGE COUNTY WATER	X	Orange County Water	
DISTRICT MAIN LABORATORY	^	District	
DISTRICT MAIN LADORATORT		DISTRICT	

ORO LOMA SANITARY	Х	Oro Loma Sanitary District	
DISTRICT	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Source Connection	
	Х	Sewerage Commission - Oroville Region	
OROVILLE - WYANDOTTE			Closed
IRRIGATION DISTRICT		1	
OTAY WATER DISTRICT	X	Otay Water District	
PADRE DAM MWD,	X	Padre Dam WD	
WASTEWATER TREATMENT			
PLANT	<u> </u>		
PALMDALE WATER DISTRICT	Х	Palmdale Water District	p p
PALO ALTO REGIONAL	X	Palo Alto Regional Water	
WATER QUALITY CONTROL		Quality Control Lab	
LAB		Deligen Dev State Diese	
PELICAN BAY STATE PRISON	X	Pelican Bay State Prison	
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Water Quality Lab	
	X	Petaluma City Water Quality Laboratory	
PINOLE-HERCULES WATER	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Pinole-Hercules Water	
POLLUTION CONTROL PLANT	X	Pollution Control Plant	
PITTSBURG MUNICIPAL WATER	x	Pittsburg Municipal Water	
WORKS	X	Treatment Plant Lab	
PLACER COUNTY PUBLIC	X	Placer County Public	
HEALTH LABORATORY	^	Health Laboratory	
PLEASANTON CITY WATER	X	Pleasanton City	
DEPARTMENT LABORATORY	^	Water Laboratory	
how home 1 / 111 to 1 1 to 1 1 to 1 1 1 1 1 1 1 1 1		Plumas County	
		Environmental Health	
		Point Loma Wastewater	
		Chemistry Lab	
	х	Porterville City Laboratory	
		Quartz Valley Indian	
		Reservation Microbiology	
		Lab	
	X	Quincy Community	
		Services District	
	. X	Rancho Murieta	
		Community Services District	
		Lab	
		Robinson Ranch Water	
		Reclamation Plant	
RIVERBANK ARMY	×		Closed
AMMUNITION PLANT			

RIVERSIDE COUNTY SERVICE AREA #51			Closed
	X	Rio Vista, North West Wastewater Treatment Plant	
	Х	Rodeo Sanitary District	
	Х	R.E. Badger Filtration Plant	
SACRAMENTO COUNTY PUBLIC HEALTH LAB.	X	Sacramento County Public Health Laboratory	
SACRAMENTO COUNTY REGIONAL PLANT CONTROL LAB	Х	Sacramento Regional County Sanitation District	
SAN BERNARDINO COUNTY PUBLIC HEALTH LABORATORY	Х	San Bernardino County Public Health Laboratory	·
	X	San Clemente - City Water Quality Laboratory	
SAN DIEGO COUNTY PUBLIC HEALTH LABORATORY	Х	San Diego County Public Health Laboratory	
SAN ELIJO JOINT POWERS AUTHORITY LABORATORY	Х	San Elijo Joint Powers Authority Laboratory	
SAN FRANCISCO AIRPORT - FACILITES O&M	x	Mel Leong Treatment Plant Laboratory	
SAN FRANCISCO DEPT. OF PUBLIC HEALTH	Х	San Francisco Public Utilities Commission WQD	
SAN FRANCISCO WATER DEPARTMENT	Х	San Francisco Puc - Moccasin Laboratory	
SAN FRANCISCO WATER DEPARTMENT	X	San Francisco Puc - Sunol Valley WTP Lab	-
	X	Searles Valley Minerals Regulatory Compliance Lab	
TREASURE ISLAND SEWAGE TREATMENT PLANT LAB	X	SFPUC WQD Treasure Island WPCP Lab	
SOUTH EAST REGIONAL RECLAMATION AUTHORITY	Х	Southeast Laboratory San Francisco PUC	
SAN JOAQUIN COUNTY PUBLIC HEALTH LABORATORY	Х	San Joaquin County Public Health Laboratory	
SAN JOSE/SANTA CLARA WATER POLLUTION CONTROL PLANT	X	San Jose/ Santa Clara WPCP Laboratory	-
SAN LEANDRO WATER POLLUTION CONTROL PLANT LAB	X	San Leandro Water Pollution Plant	

SAN LORENZO VALLEY	×	San Lorenzo Valley Water	
SURFACE WATER TREATMENT		District	
SAN LUIS OBISPO COUNTY	X	San Luis Obispo County	
PUBLIC HEALTH LABORATORY		Public Health Dept. Lab	
SAN MATEO COUNTY PUBLIC	X	San Mateo County Public	
HEALTH LABORATORY		Health Lab	
	X	San Simeon Wastewater	
		Treatment Plant Lab	
	X	Santa Rosa Water	
CAN HELDY DIOTRICT VIC. 5. OF		Reclamation Facility Lab	
SANITARY DISTRICT NO. 5 OF	X	Sanitary District No. 5 of	
MARIN COUNTY		Marin County	Classel
SANTA BARBARA COUNTY			Closed
HEALTH CARE SERVICES		C L. D L	
SANTA BARBARA COUNTY	X	Santa Barbara County	
PUBLIC HEALTH LABORATORY		Public Health Lab	
SANTA CLARA VALLEY WATER	Х	Santa Clara Valley Water	
DISTRICT LABORATORY		District	
		Santa Cruz County	
		Sanitation District Lab	
	X	Santa Cruz County - Health	
CANTA ODLIZANINIODAL		Services Agency Lab	
SANTA CRUZ MUNICIPAL	X	Santa Cruz - City Water	
UTILITIES  SANTA CRUZ DURUG MORKS		Lab	
SANTA CRUZ PUBLIC WORKS	X .	Santa Cruz - City - WWTF Lab	
DEPARTMENT SANTA MARGARITA WATER	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
DISTRICT	X	Santa Margarita Water District	
SAUSALITO - MARIN CITY	X	Sausalito - Marin City	
SANITARY DISTRICT	^	Sanitary District	
SANTA CLARA COUNTY	X	Santa Clara County Public	
PUBLIC HEALTH LABORATORY	^	Health Lab	
SCOTTS VALLEY WATER	<u> </u>	HOGHIT LGD	Closed
DISTRICT			Closed
SELMA-KINGSBURG-FOWLER	X	Selma-Kingsburg-Fowler	-
COUNTY SAN, DIST.	^	County Sanitation District	
SEWER AUTHORITY MID-	X	Sewer Authority Mid-	
COASTSIDE	^	Coastside	
SEWERAGE AGENCY OF	X	Sewerage Agency of	
SOUTHERN MARIN	^	Southern Marin	
SEWERAGE COMMISSION -	x	Sewerage Commission -	
OROVILLE REGION	``	Oroville Region	
	X	Shasta County Public	
		01,0010 000111/100110	L

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				_
		Health Laboratory		
SIMI VALLEY COUNTY	Х	Simi Valley - City Water	<u> </u>	
SANITATION LABORATORY		Quality Control Laboratory	!	
		Soledad City Water Quality	<u> </u>	
		Control Laboratory	·	
SONOMA COUNTY PUBLIC	Х	Sonoma County Public	!	
HEALTH LABORATORY		Health Laboratory		
SONOMA COUNTY WATER	Х	Sonoma County Water		
AGENCY		Agency - Russian River		
SONOMA COUNTY WATER	Х	Sonoma County Water	Ţ	
AGENCY		Agency - Sonoma		
SOUTH BAYSIDE SYSTEM	X	South Bay Wastewater		
AUTHORITY		Chemistry Laboratory		
SOUTH SAN LUIS OBISPO	Х	South San Luis Obispo	!	
COUNTY SANITATION		County Sanitation District	1	
DISTRICT				
SOUTH TAHOE PUBLIC UTILITY	Х	South Tahoe Public Utility	. !	
DISTRICT		District		
SOUTH SAN JOAQUIN	X	Nick C. Degroot Water		
IRRIGATION DISTRICT		Quality Laboratory		
	Х	SPAWAR Systems Center		
		San Diego Bioassay Lab	<u> </u>	
	X	SRCSD Environmental		
		Laboratory		
STANISLAUS COUNTY PUBLIC	X	Stanislaus County Public		
HEALTH LABORATORY		Health Laboratory	. !	_
STOCKTON EAST WATER	X	Waidhofer Water		
DISTRICT	-	Treatment Plant - Stockton		_
ST. HELENA HOSPITAL	Х	St. Helena Hospital Clinical		
CLINICAL LABORATORY	<del>                                     </del>	Laboratory	<u> </u>	-
SUSANVILLE CONSOLIDATED	X	Susanville Sanitary District		
SANITARY DISTRICT	<del> </del>	WWTP Lab	<u> </u>	-
SWEETWATER AUTHORITY	Х	Sweetwater Authority	<u> </u>	_
TAHOE TRUCKEE SANITATION	X	Tahoe-Truckee Sanitation		
AGENCY	—	Agency	ļ	ļ <sup>.</sup>
THE WATER LABORATORY OF			Closed	
SOUTH LAKE TAHOE	—		<u> </u>	_
THREE VALLEYS MUNICIPAL	X	Three Valleys Municipal	!	
WATER DISTRICT	<b></b>	Water District		_
	X	Travis AFB - Water	.	
TULARE COUNTY HEALTH	<del> </del>	Laboratory		_
	X	Tulare County Public	,	

TULELAKE WATER			Closed
LABORATORY			
•		Twin Oaks Valley Water	
		Treatment Plant	
,		UC Davis Aquatic	
		Toxicology Laboratory	
	X	Ukiah Wastewater	
LIVILONI CANIITA DV DICTRIOT		Treatment Plant	
UNION SANITARY DISTRICT		Union Sanitary District	
	X	United States Mint San	
		Francisco Lab	
	X	UC Davis, Wastewater Treatment Plant Lab	
US ARMY HEADQUARTERS -		Treatment Flant Lab	Closed
CA MEDICAL DETACHMENT	•	·	Ciosea
US NATIONAL PARK SVC.	1 <sub>x</sub>	US NPS - Yosemite - El Portal	
YOSEMITE WW FACILITY	^	OSTATO POSCITITO ELITORIAL	
JS NAVY, ENVIRONMENTAL			Closed
ANALYSIS FACILITY			
JS NAVY, ENVIRONMENTAL			Closed
CHEMISTRY LABORATORY			
U.S. ARMY CENTER FOR			Closed
HEALTH PROMOTION			
J.S. MARINE CORPS			Closed
OGISTICS BASE			
/ALLEJO SANITATION AND	Х	Vallejo Sanitation & Flood	
LOOD CONTROL DISTRICT		Control District	
		Valley Center Municipal	
		Water District Lab	
VALLEY SANITARY DISTRICT	X	Valley Sanitary District	
	Х	Vandenberg AFB -	
		Aerospace Fuels	
		Laboratory	
VENTURA COUNTY HEALTH	X	Ventura County Health	
DEPARTMENT		Department Laboratory	
VENTURA COUNTY	X	Ventura County	
WATERWORKS DISTRICTS		Waterworks Districts	
VENTURA REGIONAL			Closed
SANITATION DISTRICT			
ABORATORY		<del>                                     </del>	
	X	Veolia - City of Rialto	
		Waste Water Treatment	
		Plant	

285	310	343	35
,,		Laboratory	
ZONE 7 WATER AGENCY	X	Zone 7 Water Quality	,
DISTRICT			
YUCAIPA VALLEY WATER			Closed
LABORATORY		Laboratory	
WATER/WASTEWATER		Water/wastewater	
YUBA CITY	x	Yuba City	
DEPARTMENT LABORATORY		Department	
YOLO COUNTY HEALTH	Х	Yolo County Health	
WILLITS WATER QUALITY  CONTROL PLANT	X	Willits City Laboratory	
		District	
	Х	West County Wastewater	Closed
WESTERN MUNICIPAL WATER DISTRICT			
NAME CTERNIALINICIRAL NAVATER		District	
	X	Walnut Valley Water	
LABORATORY		Laboratory	
WEST BASIN WATER QUALITY	x	West Basin Water Quality	
DISTRICT	^	VYCGYCIVIIC Saintary District	
WEAVERVILLE SANITARY	X	Weaverville Sanitary District	
WAWONA WATER AND WASTEWATER LABORATORY	X	Wawona Water And Wastewater Laboratory	
VISTA IRRIGATION DISTRICT	X	Vista Irrigation District	
VICTA IRRIGATION DISTRICT	1	Reclamation Authority Lab	
	×	Victor Valley Wastewater	

Figure 3

Government Run Laboratories Accredited by New York ELAP in 2001 and 2016

Laboratory	County	City	200	201
Plant				
AMHERST (T) WPCF	Erie	Ahmerst		Х
AKRON (V) SEWAGE PLANT	Erie	Akron	X	X
NYSDOT Materials Bureau	Albany	Albany	Х	
NYSDOH ORG ANALYTICAL	Albany	Albany	х	X
CHEMISTRY LAB				
NYSDOH INORGANIC & NUCLEAR	Albany	Albany	Х	Х
CHEMISTRY				
WADSWORTH CENTER BIODEFENSE	Albany	Albany	· · · · · · · · · · · · · · · · · · ·	Χ.
LABORATORY				
NYSDOH ENVIRONMENTAL	Albany	Albany	X	X
BIOLOGY LABORATORY				
Albany County Sewer District	Albany	Albany	X	x
ALBANY WATER QUALITY LAB	Albany	Albany		Х
ALBION POLLUTION CONTROL FAC	Orleans	Albion	X	Х
Alden Public Works Lab	Erie	Alden	×	
Erie County Sewer District #4 & #5	Erie	Alden	X	
AMSTERDAM WATER TREATMENT	Montomery	Amsterdam	х	Х
Erie County Sewer District #2	Erie	Angola	. X	

Arcade Waste Treatment Plant	Wyoming	Arcade	Х	
Bowery Bay Water Pollution Control Plant	Queens	Astoria	X	
GREATER ATLANTIC BEACH WATER RECLAMATION DISTRICT	Nasaau	Atlantic Beach	X	Х
Attica Sewage Treatment Plant	Wyoming	Attica	Х	
AUBURN WPCP (LAB)	Cayuga	Auburn	Х	×
Auburn Memorial Hospital Lab	Cayuga	Auburn	Х	
AUBURN WATER TREATMENT PLANT	Cayuga	Auburn		×
Somerset-Barker Sewage Trmt pl	Somerset	Baker	Х	
BATAVIA WASTEWATER TREATMENT FACILITY	Genesee	Batavia	X	Х
BATAVIA (C) WATER TREATMENT PLANT	Genesee	Batavia	х	Х
Beacon (C) STP	Duchess	Beacon	X	
Bear Mountain Regional Lab	Rockland	Bear Mountain	X	
BINGHAMTON WATER TREATMENT PLANT	Broome	Binghamton	Х	X
Blasdell (V)	Erie	Blasdell	Х	
Bloomfield (V)	Ontario	Bloomfield	X	
Rensselaer Darrin Fresh Water Institute	Warren	Bolton Landing	X	
Boonville (V) Sewage Treatment Plant	Oneida	Boonville	X	
SUNY Brockport	Monroe	Brockport	X	

Hunts Point WPCP	Bronx	Bronx	X	,
Coney Island Plant (WPCP)- NYCDEP	Kings	Brooklyn	×	
Owls Head Plant (WPCP) - NYCDEP	Kings	Brooklyn	X	
26th Ward WPCP - NYCDEP	Kings	Brooklyn	Х	
Owl's Head Process Lab-WPCP- NYCDEP	Kings	Brooklyn	х	
Red Hook Water Poll Plant- NYCDEP	Kings	Brooklyn	X	
Red Hook Water Pollution Control Lab	Kings	Brooklyn	X	
NEWTOWN CREEK PROCESS CONTROL LAB	Kings	Brooklyn	×	×
Keyspan Energy System Lab/Brooklyn	Kings	Brooklyn	X .	
NEWTOWN CREEK MICROBIOLOGY LABORATORY	Kings	Brooklyn	Х	×
KINGS COUNTY HOSPITAL CENTER/PATHOLOGY DEPT	Kings	Brooklyn	X	×
ERIE COUNTY PUBLIC HEALTH	Erie	Buffalo	X	X
BUFFALO SEWER AUTHORITY	Erie	Buffalo	Х	X
Erie County Southtowns Agency	Erie	Buffalo	Х	×
BUFFALO WATER AUTHORITY FILTRATION PLANT LABORATORY	Erie	Buffalo	X	×
Canajoharie Wastewater Trmt Pl	Montomery	Canajoharie	×	

CANANDAIGUA WASTEWATER TREATMENT FACILITY	Ontario	Canandaigua	Х	
CANANDAIGUA WATER TREATMENT PLANT	Ontario	Canandaigua	X	
Canastota Water Poliution Control Plant	Madison	Canastota	Х	
CANISTEO WASTEWATER PLANT LAB	Steuben	Canisteo	Х	Х
Canton Water Filtration Plant	St. Lawrence	Canton	Х	
Carthage - W Carthage Water Poll Control	Jefferson	Carthage	X	
Castleton Wastewater Lab	Rensselaer	Castleton	х	
Catskill (Village)	Greene	Catskill	х	
Cedarhurst Water Poll Cntl Plt	Nassau	Cedarhurst	Х	
SOUTH & CENTER CHAUTAUQUA LAKE SEWER DISTRICT	Chautauqua	Celoron	Х	×
Chateaugay (V)	Franklin	Chateaugay	X	
main pump station no 5	Erie	Cheektowag a	X	X
Tallman Island WPCP	Queens	College Point	х	
Cornwall (T) Sewer Department	Orange	Cornwall	х	
DIST WATER QUAL OPS NYCDEP DISTRIBUTION LAB	Queens	Corona	Х	X
NYCDEP BEC - ASBESTOS LABORATORY	Queens	Corona		Х
LEFRAK CITY PRIORITY POLLUTANTS LAB-NYCDEP	Queens	Corona	Х	X

NORTHERN WESTCHESTER JOINT	Westchester	Cortlandt		Х
WATER WORKS		Manor	į	
Cortland Wastewater Treatment	Courtland	Courtland	Х	
Plant				
STURGEON POINT WATER	Erie	Derby		X
TREATMENT PLANT				
Dolgeville Wastewater Treatment	Fulton	Dolgeville	Х	
Plant				
DUNKIRK WWTP LAB	Chautauqua	Dunkirk	X	×
Dunkirk Steam Station	Chautauqua	Dunkirk	X	
DUNKIRK WATER TREATMENT PLANT	Chautauqua	Dunkirk	X	X
LAB				
Ellicottville (V)	Cattaraugus	Ellicottville	X	
ELMA (T) SEWER DISTRICTS-	Erie	Elma	X	X
ROLLING GREEN LANE				
ELMIRA WATER BOARD	Chemung	Elmira	X	×
Chemung Co Sewer District #1	Chemung	Elmira	X	X
CHEMUNG CO ELMIRA SD	Chemung	Elmira	Х	
ENDICOTT WASTEWATER	Broome	Endicott	х	X
TREATMENT				
BROOME-TIOGA BOCES	Broome	Endicott		X
Endicott Water Lab	Broome	Endicott	Х	
Jamestown WWTP Lab	Chautauqua	Falconer	Х	
NYCDEP HAZARDOUS MATERIALS	Queens	Flushing	×	Х
LAB				
Fonda Fultonville Wastewater	Montomery	Fonda	X	

				<del>-  </del>
Washington Co Sewer Dist #2 STP	Washington	Fort Edward	X	X
FULTON SEWAGE TREATMENT PLANT	Oswego	Fulton	X	X
GASPORT SD#1 STP	Niagra	Gasport	X	Х
Marsh Creek WWTP	Seneca	Geneva	Х	
WATERLOO WATER TREATMENT PLANT LAB	Seneca	Geneva		х
Glens Falls WWTP	Warren	Glen Falls	X	
Finch Pruyn Waste Treatment	Warren	Glen Falls	Х	
NMPC Albany Steam Results Lab	Albany	Glenmont	Х	
Gloversville Water Works	Fulton	Glowersville	Х	
Gouverneur WWTF	St. Lawrence	Gouverneur	х	
GRAHAMSVILLE LABORATORY	Sullivan	Grahamsville	Х	Х
GRAND ISLAND WASTEWATER PLANT	Erie	Grand Island	X	Χ -
Granville Sewage Treatment Plant	Washington	Granville	х	
Great Neck Wtr Poll Cntrl Dist	Nassau	Great Neck	×	
Nott Road Wastewater Treatment	Albany	Guilderland	х	
Brockport (V) Water Plant	Monroe	Hamlin	X .	
Orange Co Dept of Environ Facilities & Srvcs	Orange	Harriman	×	
SUFFOLK CO PUBLIC & ENV HEALTH LAB	Suffolk	Hauppauge	X	×
SUFFOLK COUNTY WATER AUTHORITY LABORATORY	Suffolk	Hauppauge	X	

HAWTHORNE LABORATORY	Westchester	Hawthorne		;
ROCHESTER (C) WATER BUREAU	Lingston	Hemlock	Х	<del> </del> ;
NASSAU COUNTY DEPT OF HEALTH	Nasaau	Hempstead	X	;
Herkimer Water Pollution Control Plant	Herkimer	Herkimer	X	
Erie County Sewer District #3	Erie	Holland	X	
Holley Water Pollution Control	Orleans	Holley	Х	
Honeoye Falls WWTP	Monroe	Honeoye Falls	Х	
Hoosick Falls (V) WWTP	Rensselaer	Hoosick falls	Х	
HORNELL (C) WATER TREATMENT PLANT	Steuben	Hornell	×	,
Hornell Water Poll Control Plt	Steuben	Hornell	х	1
CITY OF ITHACA WATER TREATMENT PLANT LABORATORY	Tompkins	Ithaca		,
Cornell University Filtration Plant	Tompkins	Ithaca	X	
ITHACA AREA WASTE WATER TREATMENT FACILITY	Tompkins	Ithaca	X	7
SOUTHERN CAYUGA LAKE INTERMUNICIPAL WATER	Tompkins	Ithaca	X	>
Jamaica Water Pollution Control Plant	Queens	Jamaica	X	
GLOVERSVILLE-JOHNSTOWN JWTF	Fulton	Johnstown	X	>
JORDAN (V) WATER POLLUTION CONTROL PLANT	Onondaga	Jordan	Х	>
KINGSTON WATER DEPARTMENT LAB	Ulster	Kingston		×

KINGSTON LABORATORY - NYC DEP	Ulster	Kingston		X
Kingston Universal Community Laboratory	Ulster	Kingston	X	
Erie Co Water Auth - D F Kane W Q Lab	Erie	Lackawanna	X	
Erie County Sewer District #6	Erie	Lackawanna	Х	
LAKE PLACID VILLAGE	Essex	Lake Placid	Х	Х
Lakeville Sewage Treatment Plt	Lingston	Lakewille	Х	
MOHAWK VIEW LABORATORY	Albany	Latham	Х	Х
MOHAWK VIEW WATER POLLUTION CONTROL PLAN	Albany	Latham	X	Х
Lawrence (V) Water Poliution Control Inc	Nassau	Lawrence	X	-
Leroy Sewage Treatment Plant	Genesee	Leroy	Х	
TOWN OF LEWISTON	Niagra	Lewiston	Х	X
Liberty (V)	Sullivan	Liberty	Х	
LITTLE FALLS WASTEWATER TREATMENT PLANT	Herkimer	Little Falls		X
BELGRAVE WATER POL CNTRL DIST	Queens	Little Neck	X	X
ONONDAGA COUNTY DEPT WATER ENV PROTECTIO	Onondaga	Liverpool		х
LOCKPORT WASTEWATER TREATMENT PLANT	Niagra	Lockport	Х	X .
LOCKPORT WATER TREATMENT PLANT LAB	Niagra	Lockport	Х	X
OTISCO WATER TRMT PLANT	Onondaga	Marcellus	Х	Х

MARION (T) WASTEWATER TREATMENT PLANT	Wayne	Marion	X	X
CHAUTAUQUA COUNTY HEALTH	Chautauqua	Mayville	Х	Х
SARATOGA CO SEWER DIS #1	Saratoga	Mechanicville	Х	Х
MIDDLEPORT TREATMENT FACILITY	Niagra	Middleport	х	Х
MINETTO NY LABORATORY	Oswego	Minetto	х	X
Herkimer Co Wastewater Plant	Herkimer	Mohawk	Х	
MONTICELLO (V)	Sullivan	Montecello	Х	Х
North River Laboratory	New York	New York	X	
NYC DOHMH PUBLIC HEALTH LAB - BIOTHREAT RESPONSE LAB	New York	New York	X	X
WARDS ISLAND PROCESS CONTROL LAB	New York	New York	X	Х
North River WPCP	New York	New York	Х	
CCNY ENVIRONMENTAL LAB	New York	New York	Х	Х
ENVIRONMENTAL SCIENCES AND TOXICOLOGY LABORATORY	New York	New York		X
Newark (V) Wastewater Treatment Plant	Erie	Newark	X	
Chadwick Lane Filter Plant	Orange	Newburgh	Х	
Niagara Falls Wastewater Laboratory	Niagra	Niagara Falls	x	
NIAGARA COUNTY WATER DISTRICT	Niagra	Niagra Falls	x	Х
Niagara Falls Drinking Water Lab	Niagra	Niagra Falls	Х	
OCC Niagara Works Laboratory	Niagra	Niagra Falls	х	

•		•		
NIAGARA FALLS WATER BOARD WASTEWATER LABORATORY	Niagra	Niagra Falls	Х	Х
Northport Sewage Treatment Plant	Suffolk	Northport	X	
Quest International (Norwich) WWTP	Chenango	Norwich	X	
NORWICH WATER SYSTEM	Chenango	Norwich:	×	х
OGDENSBURG WATER POLLUTION CTR PT	St. Lawrence	Ogdensburg	Х	X
Néwfane Wastewater Trmt Plt	Niagra	Olcott	X	
TOWN OF OYSTER BAY ENVIRONMENTAL LABORATORY	Nasaau	Old Bethpage	Х	Х
CATTARAUGUS COUNTY LABORATORY	Cattaraugus	Olean	Х	X
OLEAN (C) WATER TREATMENT PLANT	Cattaraugus	Olean	X	X
OLEAN WASTEWATER TREATMENT PLT	Cattaraugus	Olean ·	Х	X
ONEIDA (C) WATER POLLUTION CONTROL PLANT	Madison	Oneida	Х	X
ONEONTA (C) WATER LABORATORY	Otsego	Oneonta	X	X
Oneonta WWTP	Otsego	Oneonta	Х	
ONTARIO WATER UTILITIES DEPT	Wayne .	Ontario	×	X
ROCKLAND COUNTY SEWER DISTRICT #1 LABORA	Rockland	Orangeburg	X	X
TOWN OF ORANGETOWN, SEWER DEPARTMENT	Rockland	Orangeburg	х	X
		1 '	ł	

OSSINING (V) WATER DEPT LAB- INDIAN BROOK	Westchester	Ossining	X	X
OSWEGO WATER TREATMENT PLANT LAB	Oswego	Oswego	Х	X '
METROPOLITAN WATER BOARD	Oswego	Oswego		х
CONSOLIDATED LABORATORIES	Oswego	Oswego		Х
Oswego Harbor Power	Oswego	Oswego	Х	
Owego (V) Police Dept/sewer Dept	Tioga	Owego	Х	
Lederle Waste Treatment Lab	Rockland	Pearl River	Х	
Campfield Reservoir & Filter Plant	Westchester	Peekskill	Χ .	х
Crawford (T) Water and Sewer	Orange	Pine Bush	X	
PLATTSBURGH WPCP LABORATORY	Clinton	Plattsburgh		×
HEMPSTEAD DEPT CONSERVATION & WATERWAY	Nasaau	Point Lookout	Х	Х
Port Chester WWTP	Westchester	Port Chester	Х	
PORT WASHINGTON WPCD	Nasaau	Port Washington	Х	X
Port Washington WPCD	St. Lawrence	Potsdam	Х	:
Poughkeepsie (C) Water Works	Dutchess	Poughkeepsie	X ,	
NYSDEC Div of Environ Remed Lab	Rensselaer	Rensselaer	Х	
East Greenbush Sewage Trmt Plant	Rensselaer	Rensselaer	×	
MONROE COUNTY ENVIRONMENTAL LABORATORY	Monroe	Rochester	×	Х
MONROE COUNTY WATER	Monroe	Rochester	Х	X

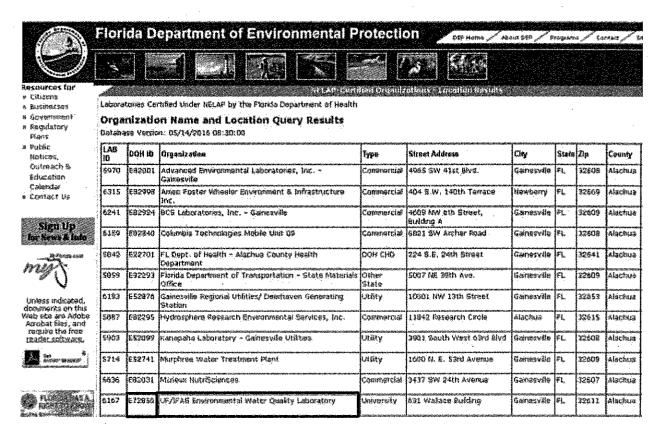
AUTHORITY WTP				
Rockaway WPCP - NYCDEP	Queens	Rockaway Park	Х	
Salamanca Wastewater Treatment Plant	Cattaraugus	Salamanca	Х	
SCHENECTADY (C) WATER LABORATORY	Schenectady	Schenectady	х	X
Tom Whitbeck - Water Laboratory	Otsego	Schenevus	Х	
Sherman (V) Wastewater Treatment Plant	Chautauqua	Sherman	x	
Ben Nesin Laboratory - NYC DEP	Ulster	Shokan	Х	
Yorktown Cons Water & Storage Dist.#1	Westchester	Shrub Oak	X	
Fallsburg (T) Env Lab	Sullivan	South Fallsburg	X	X
Spencerport Wastewater Trmt	Monroe	Spencerport	Х	
OAKWOOD BEACH PROCESS CONTROL LAB	Richmond	Staten Island	х	
INTERSTATE ENVIRONMENTAL COMMISSION	Richmond	Staten Island	х	X
Port Richmond Water Pollution Ctrl Plant	Richmond	Staten Island	X .	
Oakwood Beach WPCP	Richmond	Staten Island	Х	X
STONY POINT (T)	Rockland	Stoney Point	Х	X
St Johnsville Waste Trmt Plant	Montomery	St. Johnsville	Х	
SUFFERN VILLAGE WATER SUPPLY	Rockland	Suffern	Х	X
Onondaga County D & S	Onondaga	Syracuse	Х	

ONONDAGA CO WATER AUTHORITY	Onondaga	Syracuse	Х	X
Upstate Freshwater Institute	Onondaga	Syracuse	Х	
Oneida Water Treatment Plant	Oneida	Taberg	Х	
TONAWANDA (T) WATER TREATMENT PLANT	Erie	Tonawanda	х	Х
Toṇawanda (T) Wastewater	Erie	Tonawanda	Х	X
VAN DE WATER TREATMENT PLANT	Erie	Tonawanda	Х	Х
NORTH TONAWANDA WWTP	Niagra	Tonawanda	X	X
Tonawanda (C) Water Plant	Erie	Tonawanda	x	
RENSSELAER CO. SEWER DISTRICT #1	Rensselaer	Troy	×	Х
USGS NEW YORK WATER SCIENCE CENTER	Rensselaer	Troy		Х
TROY (C) PUBLIC UTILITY DEPARTMENT	Rensselaer	Troy	X	X
Brookhaven National Lab - SEP Division	Suffolk	Upton	×	×
ONEIDA COUNTY WATER POLLUTION CONTROL	Oneida	Utica .	×	X
Upper Mohawk Valley Reg Water Board	Oneida	Ufica	X	
MOHAWK VALLEY WATER AUTHORITY	Oneida	Utica		X
Kensico Lab NYC DEP- B W S DWQC	Westchester	Valhalla	X	
WESTCHESTER COUNTY	Westchester	Valhalla	X	X

BIODEFENSE LABORATORY				
BINGHAMTON-JOHNSON (C) STP	Broome	Vestal	Х	X
WALWORTH WATER POLLUTION CONTROL FAC	Wayne	Walworth	Х	X
Cedar Creek Wpc Plant	Nassau	Wäntagh	Х	
Cedar Creek Special Projects Lab	Nassau	Wantagh	Х	
WARDS ISLAND PRIORITY POLLUTANTS LAB- NYCDEP	New York	Wards Island	X	X
ALBION (V) WATER PLANT	Orleans	Waterport		Х
WATERTOWN (C) WATER PLANT	Jefferson	Watertown	Х	Х
WATERTOWN POLLUTION CONTROL PLANT LABORA	Jefferson	Watertown	X	X
Webster (T) Wastewater Treatment Plant	Monroe	Webster	X	X
MCWA WEBSTER WTP	Monroe	Webster		Х
WELLSVILLE WASTEWATER TRMT PLANT	Allegany	Wellsville	X	х
SCDPW SANITATION DIVISION LABORATORY	Suffolk	West Babylon		×
JOINT REGIONAL SEWERAGE BOARD	Rockland	West Haverstraw	X	X
West Hempstead Water District	Nassau	West Hempstead	X	
US Military Academy Target Hill WWTP	Orange	West Point	X	
US Military Academy Lusk Water Plant	Orange	West Point	X	

ERIE 1 BOCES	Erie	West Seneca	
NIAGARA CO SEWER DISTRICT #1	Niagra	Wheatfield	Х
Whitehall (V) Wastewater Treatment Facility	Washington	Whitehall	X
Yonkers Joint Treatment Plant	Westchester	Yonkers	X
Bureau of Water Sanitation Lab	Westchester	Yonkers	Х
NYC DEP Croton Laboratory	Westchester	Yorktown	X
Yorktown Medical Laboratory Inc	Westchester	Yorktown Heights	X
248			221

#### Alachua County



AND INFLAD-Contined Laboratories

Darbur Verson 05/14/2016 09:30/0

Laboratories no langue section limbs Will AP by the Florida Department of Health

пон ист	919	33 0 11 90 001 10 10 001 51 THE TOTAL			•		
Program	Method	Analyte	Date Effective	Status	Accreditation Type	Primary AA	Date Entere
Hon-Potable Weter	2PA 300.1	Appropria as N	12/20/2004	Franc Papins To Japins	Dælap Dælap	FI. FL	1/6/2005
Non-Poisble Water	EPA 353 I	Ammion as N	7.Cti/2006	Franc No Cassicator In Applies	MELAP MELAP	a.)	1/6/2005
Non-Potable Water	EFA 380.1	Ангасы 25 %	10/12/2006	Franc Popies Te: Accesses	HELAP PELAP	FL. FL	10/16/2005
Mosi-Poishle Water	EPA 350 I	Astronia as N	tricixii	From: Accressed Tex Justine	Acelad Deelad	FL. FL	7/19/2007
Non-Paistob Water	en manua e	Pes sirented	1/35/2006	Franc Hs Controver In: Papins	OVens MELAP	FT.	SUPSTIFF
Men-Potskie Water	SM expand G	Asservata es N	ewam	Directly conference contracts	Dielap Dielap	FI. FI.	9/16/20/S
lian-Penshie Water	S INHE GOVERNOR	Acomosos as 4	33/2016	Franc (screenad) Fac Scopended	relap Melap	FI.	YY2015
(Kon-Patiskie Weier	3M 4900 HIRD G	Ammona sa N	711/2015	Fank: Bernedef Refeative	Stelad Stelad	FL.	771/2015
lolds .	100.43	Ammonia sa M	12/20/2004	Name: Na Cathrean Tec legino	Ucus HELAF	E]	1/6/2095
Solds	EPA 300 1	Aumonis as it	9787806	Summer company of the	DOLAP DOLAP	ji ji	8/27/2005

**Bradford County** 

Bay Brevard Broward Charlotte Citrus Collier Columbia Dade Duval Escambia Flagler Hamilton Hendry Hernando Hillsborough Indian River Jackson Lake Lee linn

There are no Laboratories Currently Accredited in Bradford County

NELAP-Certified Laboratories

Laboratories no longer certfied Under NFLAP by the Florida Department of Health

### Transaction History Query Results

Database Version: 01/23/2016 8:18:22 AM

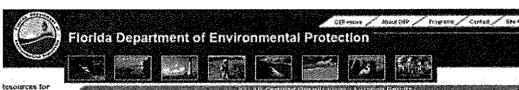
Organization: FL Dept. of Health - Bradford County Health Department

DOH ID: E22794

Program	Method	Analyte	Date Effective	Status	Accreditation Type	Laurence and the second	Date Entered
Drinking Water	SM 9223 8	Total coldomis randr E. cok	11/14/2002	The Research		ir iv	1/17/2003
Drinking Water	SM 9223 8	Total coliforms -and- E. coli	5/31/2005	From: Accredited To: Relinquished		FL FL	6/13/2005

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Last updated: April 23, 2015



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- A BUSINESSES
- Göveryytent
- s Regulatory
- Plans s Public
- Notices; Quittenin 6 Education
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#### Laboratories Cartified Lindar NELAP by the Florida Department of Health

#### Organization Name and Location Query Results

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LA# ID	оон ю	Organization	Тура	Strent Address	city	Braid	Zip	County
6251	263374	Andybral Laborataries of Florida - Mobile Lab #1	Conversal	2265 (abrida Cimpt	लक्ष्मात (इस्क्रिय	FL.	32952	Brevand
6402		Amalytical Cabonatones of Florida, Inc Michael Eath #2	Commercial	2265 Lassoe Court	Merritt Island	FL.	12352	Brevard
5674	E532K0	Greverd County Water Resources Laboratory	July	3630 kerth Courtenay Pawy	Merritt Island	PI.	32953	Breverd
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5001	£83330	OB Environtal Laboratories, Inc.	Commercial	365 Gus Hop Sv4	Accase (5ga	Fi.	32955	Breverd
5907	563470	Kernedy špace Cerder Environmentsi Morošiology Laboratory	ederal	Buking M7-ESS, Room 2772	Kermedy Space Center	FL	12859	Brevard
6040		US As Porce - Cape Canaverel APS Chirconnectal Caboratory	resets	54731 Save by Ra	CPS.	FL	32925	Steres
5901	643362	Water Quality Assurance Laboratory	Utility	351 Shearer Blvd.	Cocca	FL.	37922	etraga

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#### Transaction History Query Results

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**Brevard County Utilities** 

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Transaction History Query Results

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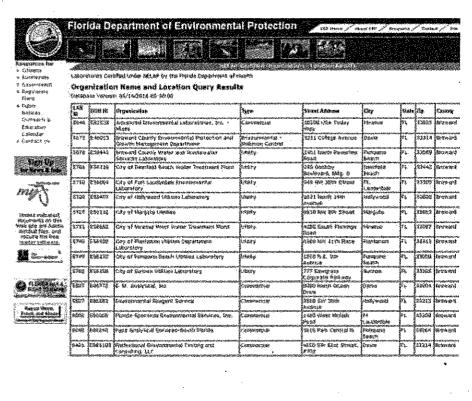
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#### **Broward County**



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### Charlotte County



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Organization Name and Location Query Results Database Vernon: 03/14/2016 09:30:60

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15663	easong .	banchesade EA South	Commercial	1901 Corporate Avenue, Stata 1902	North Part	FL.	34260	Charlaces	(941) 625-3137
1082	684439	Charactia County Utiliaes - Bast Part Laboratory	Ulišty	SIGO Loveland livid	Port Chadotta	31,	2366Q		(941) 764-4337
2753	655724	City of Punta Gooda Water Treatment Mant	Utišty	30100) Washington Loop Road	Amia Gorda	¥¥.	X3V662	Chariotta	(941) 839-2067

MELAP-Certified Laboratories

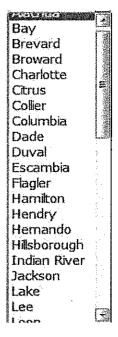
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### Transaction History Query Results

Database Version: 05/14/2016 06 30 00 Organization: FL DEP - South District Laboratory DOH ID: E34830

Program	Method	Analyte	Date Effective	Status	Accreditation T	ype	Primary AA	Date Entered
Han-Potable Water	SM 52 IU S	Bicchemical oxygen distand	1/22/2003	From: No Centrator	None	-		12/20/2002
				To: Augusta	nela)		h-mm-id	
Hon-Potable Water	SM 52108	Guebernek oxygen danand	7/1/2003	From: Aggieu	NELAP I	energene (	FL.	B/13/2003
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### Chatham County



There are no Laboratories Currently Accredited in Chatham County

NELAP-Certified Laboratories

Laboratories no longer certified Under NELAP by the Florida Department of Health

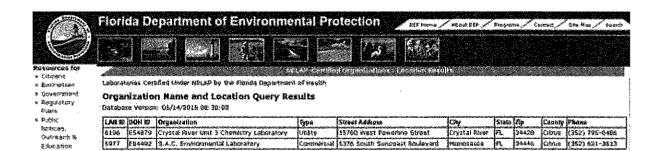
### Transaction History Query Results

Database Version: 05/14/2016 08:30:00

Manager 4	DELAÇASE (CI SIO	E 037 14 89 10 VOI 20.00
	Organization:	Chatham County Health Department Laboratory
	DOH ID:	E37980

Program	Method	Analyte	Date Effective	Status	Accreditation Type	Primary AA	Date Entered
Non-Potable Water	EPA 1600	Enterococci	12/19/2005	F 79 10 17	NELAP NELAP	FL FL	12/21/2005
Non-Potable Water	EPA 1600	Enterococci	12/19/2005	From: No Certification To: Accredited	None NELAP	FL	12/21/2005
Non-Potable Water	EPA 1600	Enterococci	12/21/2005		NELAP NELAP	FL FL	12/21/2005
Non-Potable Water	EPA 1600	Enterococci	4/24/2006	Transfer and the self-	NELAP NELAP	FL FL	5/19/2006
Non-Potable Water	EPA 1600	Enterococci	4/24/2006	16 (i. i	NELAP NELAP	FL FL	5/19/2006
Non-Potable Water	EPA 1600	Enterococci	11/1/2012	To Dalla and about	NELAP NELAP	FL FL	11/7/2012

### Citrus County

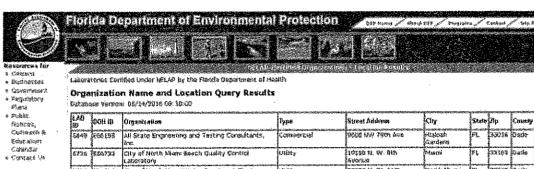


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Dreiting Wozer	9M 9223 D	Escharichea cub	12/1/20190	From: Puziedład Im Buspanies	HELAP HELAP			12/7/2010
Crinking Water	SM 9223 B	Escharchia coli	1/53/2011	From Suspended In: Pagnetied	PIELAP PIELAP		FI.	IV-430II
Crakes Waser	SM 9223 B	Eschericha celi	70/2013	From: Boaches To: postion	HELAP HELAP	en interestation as such		7/17/2012
Dendang Water	3M 9223 B	Escherchis coli	7/1/2012	Barger Searches Tax Searches	HELAP HELAP			7/17/2012
Crokey Water	SM 9723 B	Estherchia culi	70(2012	Faum Periodean	TELAP	400406404	FZ.	วกผวงเว

### Dade County



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6726	E50733	City of North More Beach Quality Cordici Lateratory	Utikiy	14110 n. W. Bin	Plani	FL.	anioa	වශ්ණ
2737	636722	City of North Mann Water Freshment Flank	Viéty	Tangs N. W. Lipi Averae	North Mani	F.	33/48	Caribs
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#### Transaction History Query Results

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#### Transaction History Query Results

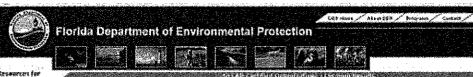
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### **Duval County**



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	6300	6051021	ADPON Laboratories, Inc.	Commercial	11757 Careral Pertiass	lasteonylla	rī,	32224	Dure	(904) 645-9169
	5786	E82502	A.S Erostoropotyl - latinomila	Commercial	Olaj Graips Highway	Jackscew NS	FL.	32256	(Kora)	(\$04) 739-2277
8			Advanced Bringonmental Laboratories. Inc.	Commercial	0601 Southpoint Parkway	latisomilia		35310		(904) 363-4350
-	6374	6821059	Oneshed Environmental Laboratores, Inc.	Commercial	3653 Repart Boules and, Suita 300	larkstotydis	FI,.	32224	Curat	(\$04) 807-4625
	3622		Erwickmental Cargerration Laboratories, Inc. (ENCO) - Jackscowske	Capatherpol	-1810 Exercive Park Court, Suite 111	laci zomribe	FL.	32216	Carron St	(904) 298-3067
1	esec		Pichala DCH Stanuar of Lacorationas - lacosatoria	DOM LAB	1513 com phon	lacks devile	řt,	32202	Caning	(3834) 701-3508
	6238		Pova DOH Bureau of Labs Environmental Monabologa	DCH LAB	1217 Pourist.	lathsomilie	A.	32503		(904) 791-1668
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NELAP-Certified Laboratories

Laboratories no longer certfied Under NELAP by the Florida Department of Health

### Transaction History Query Results

There are no transaction entries for this FOA. Please note that the AAMS Database was created in March 2002. No transaction history entries exist prior to this date. If you have further questions regarding this FOA please contact the DOH Lab Certification Program (904-791-1599).

City of Atlantic Beach Wastewater Treatment Plant

Last updated: April 23, 2015

### Escambia County



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#### Organization Name and Location Quary Results

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6927	EST301	Emerald Coast Utlaties Authority	Utildy	9850 Stundevard Street	Pensacols	FL.	32514		(990) 968-9688
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#### Transaction History Query Results

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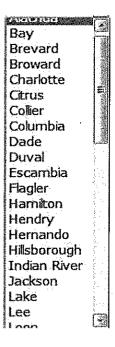
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Gulf County



There are no Laboratories Currently Accredited in Gulf County

NELAP-Certified Laboratories

Laboratories no longer certfied Under NELAP by the Florida Department of Health

## Transaction History Query Results

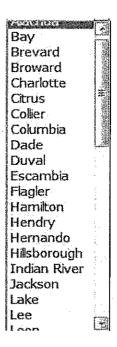
Database Version: 05/14/2016 08:30:00

Organization: City of Port St. Joe Wastewater Treatment Plant Laboratory

DOH ID: E51289

Program	Method	Analyte	Date Effective	Status	Accreditation Type	Primary AA	Date Entered
Drinking Water	SM 9221 E	Fecal coliforms	7/1 <u>/2</u> 003	From: Accredited	NELAP	FL	7/24/2003
				To: Inactive	NELAP	FL	
Non-Potable Water	SM 9221 C	Fecal coliforms	7/1/2003	From: Accredited	NELAP	FL	7/24/2003
				To: Inactive	NELAP	FL	

Hardee County



There are no Laboratories Currently Accredited in Hardee County

NELAP-Certified Laboratories

Laboratories no longer certfied Under NELAP by the Florida Department of Health

### Transaction History Query Results

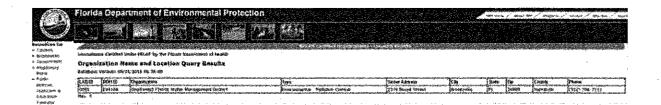
Database Version: 05/14/2016 08:30:00

Organization: City of Wauchula Wastewater Treatment Plant

DOH ID: E54466

Program			Date Effective		Accreditation Type	Primary AA	
Non-Potable Water	SM 5210 B	Carbonaceous BOD (CBOD)	·	From: Accredited	STATE	Ħ	6/26/2003
		, , , , , , , , , , , , , , , , , , , ,	·	To: nactive	STATE		

## Hernando County



NELAP-Certified Laboratories

Laboratories no longer certified Under NELAP by the Florida Department of Health

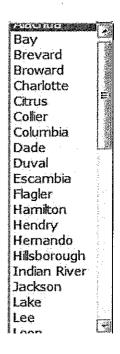
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Database Version: 05/14/2016 08:30:00

	·		
	Organization:	FL Dept. of Health - Hernando County Health Department	
	рон ю:	E24704	
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Program	Me Me	thod	Analyte	Date Effective	Status	Accreditation Type	Primary AA	Date Entered
Drinking V	Vater SM	19221 E	Fecal coliforms	4/17/2002	From: Accredited To: Accredited	STATE NELAP	hp ]	2/27/2003
Drinking V	Vater SM	19221 E	Fecal coliforms	10/1/2003	From: Accredited To: Relinquished		FL]	9/30/2003

Highland County



There are no Laboratories Currently Accredited in Highland County

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#### Transaction History Query Results

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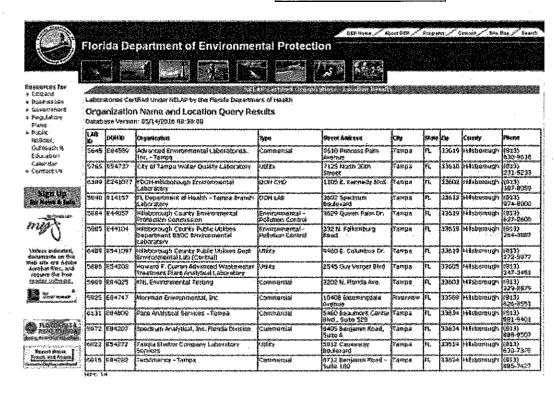
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#### Hillsborough County



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#### Transaction History Query Results

FL DEP - 8W District Countrity Laboratory DOHRO: DURBS Dete Effective Status Accreditation Type Primary AA Date Entered Program Method Analyte brilas boray Has-Fatatio Willia em acce d University Wass SM TZZ S Non-South Water 1986 2222 E eren a MELAP MELAP 271102004

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#### Transaction History Query Results

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4/15/2008

### Indian River County



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Laboratories Cartified Uniter NELAD by the Florida Department of Health

Organization Name and Location Query Results

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AND AP-Contined Laboratories

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### Transaction History Query Results

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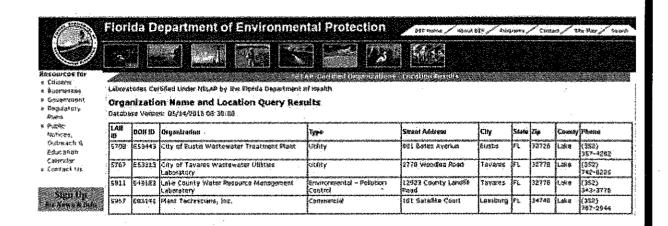
#### Transaction History Query Results

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40/18/10			Paudice spolitorephe (1981)			nglap Nelap	- 3	ri. Pi.	8.5-2007

Last updated April 23, 2015

### Lake County



MELAP-Certified Laboratories

Laboratories no longer certified Under NELAP by the Florida Department of Health

### Transaction History Query Results

Organization: City of Leesburg Wastewater Utility Laboratory

DOH ID: R53306

Program Method Analyte Date Effective Status	Accreditation Type Primary AA Date Entered
Non-Potable Water SM 5210 B Carbonaceous SOD (CBOD) 2/28/2014 From: Accredite	
Ta: Pasnquisi	DELAP FL



### Florida Department of Environmental Protection















Resources for » CRIZERS

» Businesses

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Laboratories Certified Under NELAP by the Florida Department of Health

#### Organization Name and Location Query Results

Database Version: 05/14/2016 08:30:00

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LAB IO	ронір	Organization	Type	Street Address	City	State	Жp	County
5695	E55261	City of Cape Coral ERD Laboratory	Utility	3310 GM S044	Cape Coral	PL.	33914	Les
5712	E55617	City of Fort Nipers, Central Laboratory	Utility	idis Matthew Çawa	FL Myers	AL.	33907	Lee
5851		Ft. Dept. of Health - Lee County Health Department	рансно	60 Dardey Drive. Unit 1	Ft. Myars	FL.	33907	Les
5916	E45049	Lae County Environmental Laboratory	Environmental - Pollution Control	60-2 Danley Drive	Ft. Nyers	A.	33907	Lea
6262		Lee County Invacintin Control Distinct Water Quality Laboratory	Environmental – Psilutjon Control	15191 Homestead Road	Lahigh Áores	FL	33971	Lêé
5981	685457	Sanders Laboratories, Inc. (South)	Constructed	10090 Bayana Road	Ft. Myers	PL.	33913	L68

#### Transaction History Query Results

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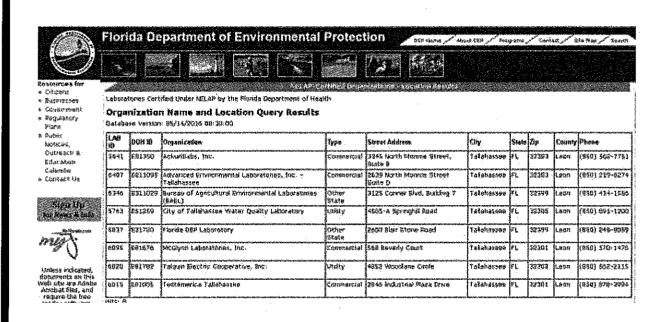
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#### Leon County



NELAP-Certified Laboratories

Laboratories no longer certfied Under NELAP by the Florida Department of Health

Database Versio	n: 05/	/14/2016 08	3:30:00	***************************************				
Organization:	FLI	DEP - Cer	itral Laboratory/Ir	novation Park	Satellite Laborator	у		
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Non-Potable W	later	EPA 624	1,1,1-Trichloroethane	10/19/2011	From: Accradited To: Inactive	NELAP NELAP	FL FL	1/17/2012
Non-Potable W	Tater	EPA 8260	1,1,1-Trichloroethane	7/1 <i>1</i> 2003	From: No Certification To: Accredited	None NELAP	EL ]	9/24/2003
Non-Potable W	later	EPA 8260	1,1,1-Trichloroethans	10/19/2011	From: Accredited To: Inactive	NELAP NELAP	FL: FL	1/17/2012
Solids	(*************************************	EPA 8260	1,1,1-Trichloroethane	10/19/2011	From: Accredited To: Inactive	NELAP NELAP	FL FL	1/17/2012

### Manatee County



Florida Department of Environmental Protection

Resources for

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- a Regulatory
- \* Public Nonces. Cutteeds & Edicator Cannoa

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Laboratories Certified Linder NELAP by the Florida Department of Health

#### Organization Name and Location Query Results

Database Version: 05/14/2016 08:30:00

LAB IO	роню	Organization	typ:	Street Address	City	State	Dp	County	Phone
5660	E84167	Benchmerk Environsalytical, Inc	Construid	1711 120) Street Sast	Palmettö	FL.	34221	Manatee	(941) 723-9986
5919			Environmental – Posizion Control	1501 Cam Rosei	Bradenton	FL.	34212	Maratee	(941) 742-5960
\$924		Manatea Coursy Unitoes Department WTPQC Laboratory	ASST Y	17915 Waterline Road	Bradenbon	FL.	34513		(941) 246-3020
5920		Manates County USKy Department Central Laboratory	Nuty	4751 66th Street West	Brødenton	n.	34210		(941) 792-8811
5892	E84576	Mosaic Fartilizer LLC Environmental Laboratory	Colabada	7450 County Read 850	Muserry	ጤ	32860		(863) 472-4436

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#### Transaction History Query Results

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	Taidung Water	964 3177 B	Bee	n toxta		MELAP GEAV		7442912
	ihiday Wasi	au im s	Ase.	1184				1820

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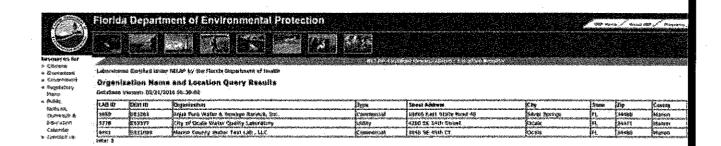
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Last options April 28, 2917

### Marion County



NELAP-Certified Laboratories

Laboratorius no longer cartifod Under NELAP by the Florida Department of Health

### Transaction History Query Results

Database Verse	n: 05/14/201	6 (8 3%00	n to the accommentation of the accomment					
Organization:	FL Dept. o	of Health - Mar	ion County He	akh Department				
роню:	E23708							
Program	Method	Analyte	Date Effective	Status	Accreditation	Тура	Primary AA	Date Entered
Drinking Water	SM 9223 B	Escherotse edi	1177/2002	Franc No Coblication To: Accredited	Noce MELAP	e:** **(**********	FL.	5/19/2/08
Drinking Water	SM 9223 B	Eschenchia coli	7/1/2011	Thursday of the same of	MELAP MELAP		FL FL	7/11/2011

NELAP-Centified Laboratories

Laboratories no longer certified Under NELAP by the Florida Department of Health

### Transaction History Query Results

Database Version: 01/23/2016/8/18/23/AM

Organization: U.S. Geological Survey, WRD, OWORL

DOH ID: E63597

Program	Method	Analyte	Date Effective	Status	Accreditation Type	Primary AA	Date Entered
New Forable Water	EPA 410.4	Chemical axygen demand	7/15/2000	1 11 11 11 11	STATE NELAP	Constitution of	8/15/2003
Non-Potable Water	EPA 410.4	Charrical axygen demarca	97578814	From: Accredited To: Relanguished	NELAP	Ē.	5/12/2005

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Last updated: April 23, 2015

### Nasau County



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Laboratories Certified Under HELAP by the Florida Department of levelin

Organization Hame and Location Query Results

Database Versien: 05/14/2016 08:30:00

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LAB ID	DONIO	Organization	Type	Street Address	City	\$148¢	Zip	County	Phone	1
6179	€92860	Paydrser Performance Fibers, LLC	Otter	10 Gan Subet	Fernandna Beach	Ħ.	32635	tieksey	(904) 277-1460	, l
6223	E92906	WestPork CP, U.C	oner	North Bill Street	Pemandna beath	FL.	32034	Massau	(904) 277-7731	i
4 5 N m - 16	,,,,									1

NELAP-Certified Laboratories

Laboratories no longer certified Under NELAP by the Florida Department of Health

### Transaction History Query Results

Database Version: 01/23/2016 8:18:22 AM

Organization: City of Fernandina Beach Wastewater Treatment Plant

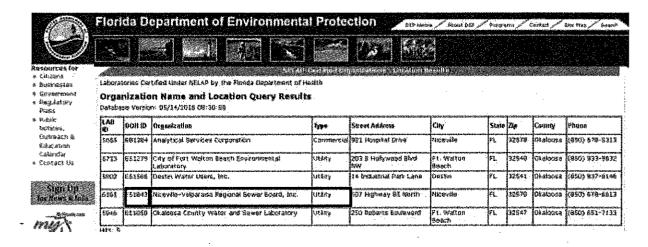
DOH ID: E52335

Program	Method	Analyte	Date Effective	Status	Accreditation Type	Primary AA	Date Entered
Non-Potable Water	SM 9222 D	Fecal coliforms	7/8/2003	From: Accredited To: Accredited	STATE NELAP	L. 1.2 Innaneurus	8/21/2003
Non-Potable Water	SM 9222 D	Fecal coliforms	10/28/2005	From: Accredited To: Relinquished	NELAP NELAP	FL FL	10/28/2005

top

Last updated: April 23, 2015

#### Okaloosa County





Laboratories no longer certfied Under NELAP by the Florida Department of Health

### Transaction History Query Results

There are no transaction entries for this FOA.

Please note that the AAMS Database was created in March 2002.

No transaction history entries exist prior to this date.

If you have further questions regarding this FOA please contact the DOH Lab Certification Program (904-791-1599).

NICEVILLE-Valparaiso Okaloosa

# Sewage Board

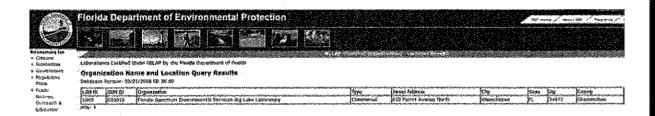
Last updated: April 23, 2015

MINIAP-Certained Laboratories

Laboratories <u>no longer corriled</u> Under NELAP by the Florida Department of Health

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Organization:	City	of Mary E	ather Wastewater Treat	ment Plant				
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### Okeechobee County



MELAP-Certified Laboratories

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### Transaction History Query Results

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rs. Example (mp.	Organization: Okeechobee Utility Authority Water Treatment Plant										
DOHID:	E5671)				•						
Program	Method	Analyte	Date Effective	Stalus	Accreditation	Type Pr	SHEY AA	Date Entered			
Orinkang Water	BM 2001 C	Facel collisms	KO/10/2002	From: Accresose In: Membra	STATE	*		10/19/2002			
Croking Water	экомг	Focal colitoria	10/11/2002	Fram: (fested Ta: Josephs	STATE.			10/18/2002			

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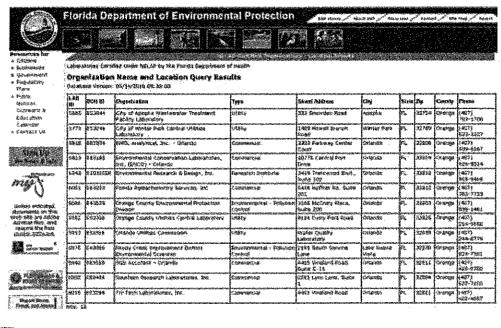
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## Orange County



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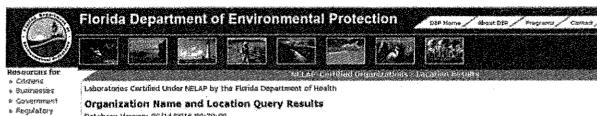
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# Osceola County



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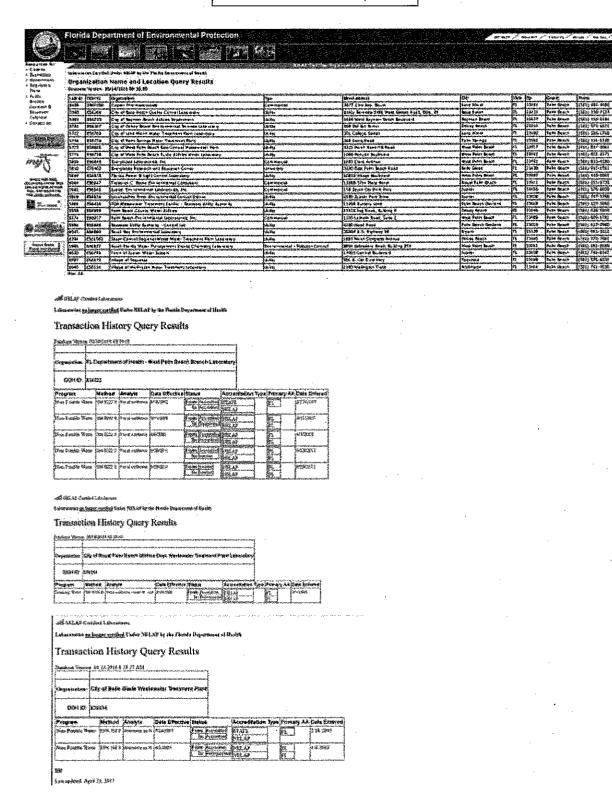
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# Transaction History Query Results

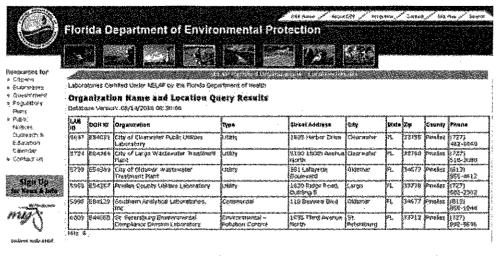
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## Palm Beach County.



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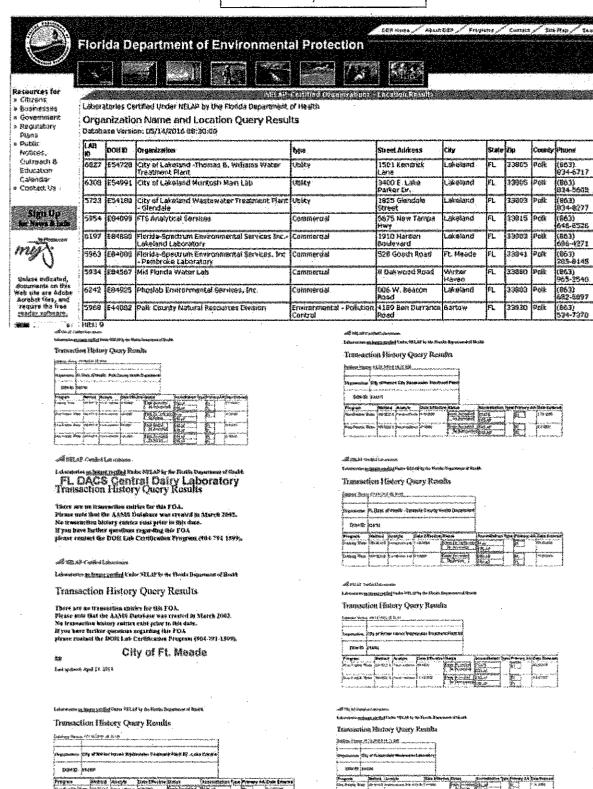
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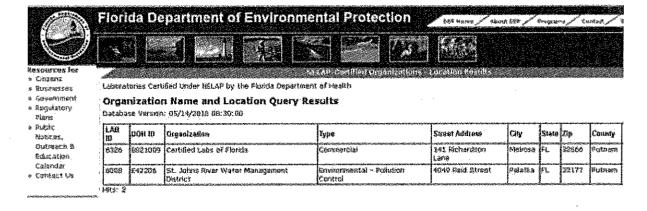
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## Polk County



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## Putnam County



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NELAP-Certified Laboratories

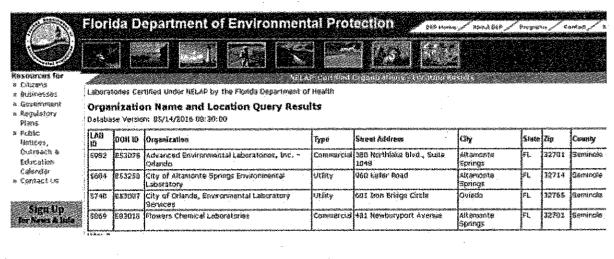
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## Seminole County



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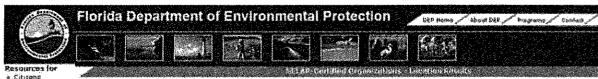
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# St. John's County



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Laboratories Certified Under HELAP by the Florida Department of Health

Organization Name and Location Query Results

Database Version: 05/14/2016 08:30:00

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15	750	E52406	City of St. Augustine Water Pollution Control Laboratory	Utility	501 Riberia Street	St. Augustra	FL	22085	St. Johns
le	057	652495	St. Johns County Utility Department Environmental Leboratory	Utary	000 W. 16th Street	St. Augusting	E.F.	32000	St. Julys
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MELAP-Certified Laboratories

Laboratories no longer cortfied Under NELAP by the Florida Department of Health

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# St. Lucie County

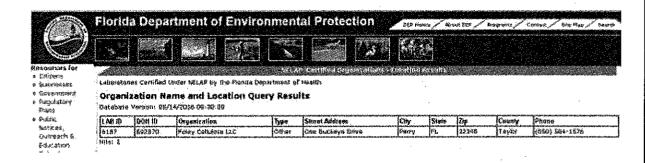
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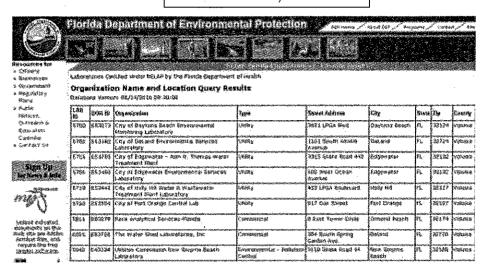
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Organization:	City of Perry Wastewater Treatment Plant
DOH ID:	E52400

Program	Method	Analyte	Date Effective	Status	Accreditation Type	Primary AA	Date Entered
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## White Paper #4: A Quality Management System for ELAP

By David Kimbrough, Pasadena Water & Power

Presented to the Environmental Laboratory Technical Advisory Committee, August 24, 2016

The Environmental Laboratory Technical Advisory Committee voted to recommend to the Environmental Laboratory Accreditation Program to adopt a Quality Management System that was not based on documents of The NELAC Institute. This paper is a straw man for how such a Quality Management System would look.

## 1) Introduction

The Environmental Laboratory Accreditation Program (ELAP) posed four questions to the Environmental Laboratory Technical Advisory Committee (ELTAC) in regards to creating a new Accreditation Standard.

- a) What should the standard be for Performance Testing Samples (PTS) in terms of how many studies per year should a laboratory participate in?
- b) What should the Technical Standard be?
- c) Should ELAP require laboratory have a Quality Management System (QMS) as a condition of accreditation?
- d) If a QMS is required, which one should be required?

At the June meeting of ELTAC a vote was taken and the committee recommended that only one PTS study per year. This effectively eliminated using The NELAC Institute (TNI) documents as a whole for a QMS as the TNI documents require the two PTS studies per year.

At the July meeting, ELTAC voted that the Technical Standard of the overall Accreditation Standard should be made up of the requirements of the test methods themselves and nothing from other sources. ELTAC also voted that it wanted to recommend ELAP require a QMS as condition of accreditation. Since TNI as whole had been excluded by the June vote, the question was raised as to which non-TNI QMS should be recommended. The suggestion was raised that a "TNI Lite" QMS could be recommended but a straw poll showed that the Committee was not interested in such a proposal. The Committee voted to hold a meeting in August to propose a QMS for ELAP.

This paper is proposal for a QMS based upon the Quality Systems used by the United States Environmental Protection Agency and California State Regulatory Agencies.

## 2) Quality Management System

- The USEPA QMS necessarily begins with the needs of the data users. The data users for this case are the California State Regulatory Agencies of the State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW), the SWRCB Division of Water Quality (DWQ, including the Regional Water Quality Control Boards RWQCB), the Department of Toxic Substances Control (DTSC), and the Department of Fish and Wildlife (DFW). Frequently at least some of these agencies already use the USEPA QMS. Therefore it is only logical that this be the basis for ELAP's QMS.
- b) Data Quality Objectives - QMSs begin with the Data Quality Objectives (DQOs). DQOs are qualitative and quantitative statements that, among other things, specify tolerable limits on decision errors which will be used as the basis for establishing the quantity and quality of data needed to support the decision. The DQO Process helps ensure that data users are assured that the type, quantity, and quality of environmental data appropriate for the intended application. Sampling and analysis plans can be developed from DQOs. Variables such as precision, accuracy, representativeness, data completeness, comparability, and sensitivity are commonly used in environmental monitoring. Depending on the nature of the project, different data quality needs might be emphasized over others. For example if regulatory compliance with threshold concentration is the goal, accuracy and precision might be more important than comparability. The activities of laboratories are only a very small part of DQOs.
- c) Data Quality Indicators Data Quality Indicators provide quantitatively assessable measures of DQOs. For example accuracy can be assessed by the use of reference materials, continuing calibration verification standards (CCVS), matrix spikes and other similar tools. For each DQO, a DQI can be determined and used to assess the quality of the data generated.
- d) Measurement Quality Objectives Measurement Quality Objectives (MQOs) are the specific laboratory based measures to determine acceptance or rejection of data. For the DQO of accuracy and

the DQI of Continuing Calibration Verification Standards, the MQO could be a recovery of 25%. For the DQO of precision and the DQI of laboratory duplicates the MQO could be the relative percent difference of 20%.

- e) The DQOs, DQIs, and MQOs are found in Quality Assurance Project Plans (QAPP), Sampling and Analysis Plans (SAP), but also in other documents.
- f) Data Quality Assessment The core of QMS is the Data Quality Assessment (DQA). The data users examine the entire universe of laboratory results, including MQOs, and determine if the data is of sufficient quality to allow him or her to make the needed decisions. If not, changes to the QS have to be made and more samples collected and analyzed. Attachment A shows a typical QMS used by the USEPA in their Clean Air Act program.
- g) As can be seen, only a small part of the QMS actually involves laboratories, mainly the MQOs. So for ELAP to create a QMS that will be a requirement for laboratory accreditation, is should only include those parts of the QMS that impact laboratory functions.

## 3) ELAP Required QMS

- a) The proposed QMS was not designed to be a separate "add-on" feature separate from the larger Accreditation Standard but is rather it was rather woven into the fabric of the Accreditation Standard at each point. The core elements of the QMS are found in almost every part of the Accreditation Standard
- b) While the QMS has many elements, there were three core elements that hold it all together:
  - i. "Data User" means an individual or group within a State regulatory agency that has unique data quality objectives and measurement quality objectives.
  - ii. "Measurement Quality Objective" or "MQO" is an individual performance or acceptance goals for a laboratory determined by a data user.
  - iii. "State regulatory agency" means an agency that requires the analysis of environmental samples that has been established under regulatory and/or statutory requirements by the State

Water Resources Control Board (SWRCB), Regional Water Quality Control Boards (RWQCBs), the Department of Toxic Substances Control (DTSC), the California Environmental Protection Agency (Cal/EPA), the Department of Health Services (DHS), the Department of Food and Agriculture (DFA), Department of Fish and Wildlife (DFW), or any successor agencies.

The proposed QMS is divided up into Articles and numbered in a fashion similar to how California regulations are organized except that Articles are numbered rather than lettered.

Article A – Definitions

Article B - Purposes

Article C - Accreditation Process

Article D - Quality Management Systems

Article E – Measurement Quality Objectives

Article F - Personnel

Article G – Facilities and Equipment

Article H - Required Tests Methods

Article I – Fields of Accreditation

Article J – Quality Assurance Manual

Article K – Standard Operating Procedures

Article L - Records Retention

Article M – Standards

Article N - Sample Handling

Article O - Corrective Actions

Article P - Notification and Reporting

Article Q - On-Site Assessment

- In each article, the requirements placed upon laboratories as a condition of accreditation are defined relative to the MQOs of the data users in the California state regulatory agencies. If the data users do not provide any MQOs, the quality control and quality assurance requirements in the test methods are still required. If there are no quality control requirements found in the test methods themselves, default MQOs are found in Article E.
  - i. These three core elements are defined in Article A.
  - ii. In Article B, the purpose of ELAP and laboratory accreditation is defined relative to the needs of data users from state regulatory agencies as expressed as MQOs.
  - iii. Article C requires that when a laboratory applies for accreditation it has to list the data users, state regulatory agencies, and MQOs that it is to use.

- iv. Article D and Article I require that the laboratory include the MQOs of the data users be incorporated into the day to day activities of the laboratory.
- v. Article K requires that the MQOs be incorporated into the SOPs of the laboratory.
- vi. Article P indicates that when an on-site assessment is to be performed, the assessor will review the laboratory for compliance with the MQOs of the data users.
- vii. Other Articles incorporate the MQOs in different ways.
- e) At each point in the process of accreditation, ELAP ensures that accredited laboratories are complying with the MQOs of the data users.

## 4) Recommendations

- The proposed QMS would well serve the interests of the data users in the state regulatory agencies as it would tie the performance of individual laboratories to the data quality needs of the individual projects and programs through the MQOs.
- b) The proposed QMS would well serve the interests of ELAP as it would provide a standard that would easy to implement while robust enough to be enforceable and specific to California's needs.
- c) The proposed QMS would well serve the interests of the accredited laboratory community well as it is comparatively short, simple, and publically available for free.

#### **Article A Definitions**

"Acceptable Results" means proficiency testing (PT) study findings that the PT study provider or ELAP has determined meet acceptance criteria specified for the study undertaken.

"Accuracy" means the closeness of a measured value to an accepted reference value or standard.

"Accreditation" A determination by ELAP that an environmental laboratory is capable of performing one or more units of accreditation in accordance with this chapter for California state regulatory agencies.

"Accredited laboratory" means a laboratory that has been granted certificate of accreditation by the agency directly or through reciprocal recognition under this chapter.

"Analyte" means the chemical substance, physical property

or organism analyzed in a sample.

"Analytical Specialist" means a person who either supervises the activities of others in, or is otherwise responsible for the results produced by, the analysis of environmental samples using sophisticated laboratory instruments, such as gas chromatograph/mass spectrometers (GC/MS), inductively coupled plasma atomic emission spectrometers (ICP-AES), inductively coupled plasma mass spectrometers (ICP-MS), liquid chromatograph/mass spectrometers (LC-MS), atomic absorption spectrophotometers (AA), gas chromatographs (GC), alpha particle or gamma ray spectrophotometer, electron microscopes (EM), polarized light microscope (PLM), high performance liquid chromatographs (HPLC), ion chromatography (IC), or liquid scintillation counter (LSC), or bioassay testing.

"Analytical staff" includes, but is not limited to, laboratory directors, supervisory personnel, quality assurance personnel, technicians, chemists, biologists, personnel performing extractions and analysts.

"Assessor" means the person who performs on-site assessments of laboratories' capability and capacity for meeting the requirements under this chapter by examining the records and other physical evidence for each one of the tests for which certification has been requested.

"Batch" means a set of samples prepared or analyzed together under the same process, instrumentation, personnel, and lots of reagents. An analytical batch refers to a set of any number of prepared samples, such as extracts, digestates or concentrates or samples requiring no preparatory steps analyzed together as a group in an uninterrupted sequence, and may consist of samples of various quality system matrices. A preparation batch refers to a batch of samples, excluding quality control samples, of the same quality system matrix which can be processed simultaneously using the same equipment, reagents and staff. Preparation batch processing shall be completed in a 24-hour period from the start of the processing of the first sample to the start of the processing of the last sample. For laboratories that do not analyze more than 7 samples for a given test and quality system matrix per week, a preparation batch may consist of up to 7 samples, excluding quality control samples, processed during the course of no more than a week.

"Bias" means the consistent deviation of measured values from a true value caused by systematic errors in a procedure or a measurement process.

"Chain of custody" means the procedures and records that document the possession and handling of samples from collection through disposal. A chain-of-custody form is used to document, with a signature, date and time, transfer of the sample from collector to transport/delivery service and then to the laboratory staff receiving the samples.

"Corrective Action Report" means a report documenting actions taken by a laboratory following the identification of non-compliance with the requirements of this Chapter.

"Data User" means an individual or group within a State regulatory agency that has unique data quality objectives and measurement quality objectives.

"Deficiency" means an existing nonconformity, defect or other undesirable inconsistent with the requirements of this chapter.

"Demonstration of technical capability" means a document that provides to ELAP the information necessary to determine whether a laboratory has the capability to conduct the analysis for a specific UoA, including:

"ELAP" means the California Environmental Laboratory Accreditation Program.

"Environmental sample" means a collected volume of potable or not-potable surface or ground water, soil, sediment, hazardous waste, or any other material analyzed for a State regulatory agency.

"Facilities" means fixed or portable building(s), including storage areas, that contain the analytical and ancillary operating equipment, supplies and space necessary to perform the analyses in the FoAs for which a laboratory is accredited.

"Field of Accreditation" or "FoA" means a group of UoAs related by which state regulatory agency results to be reported to and analytical technology or analyte type.

"Interim certificate" means a temporary certificate of ELAP accreditation listing UoAs that a laboratory has requested be added to its existing certificate, that allows the laboratory to report analyses for regulatory purposes for the additional UoAs.

"Laboratory" means a facility that performs tests in connection with a agency which requires data from a certified or registered laboratory. A facility consisting of a principal laboratory and annexes within 5 miles of the principal laboratory may be considered a single laboratory at the discretion of the department.

"Laboratory director" means the laboratory staff person who is responsible for actual day-to-day supervision of all technical, analytical and data reporting operations in the laboratory for the fields of accreditation listed on the laboratory's certificate.

"Laboratory equipment" means any support equipment or analytical instrument necessary to or involved in generating the results of an analysis.

"Laboratory management" The individuals responsible for the overall operation, all personnel and the physical plant of an environmental laboratory which includes a laboratory supervisor.

Laboratory supervisor—A technical supervisor of an environmental laboratory who supervises laboratory procedures and reporting of analytical data.

"MCL" means maximum contaminant level and is the maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

"Measurement Quality Objective" or "MQO" is an individual performance or acceptance goals for a laboratory determined by a data user.

"Method blank" means a sample of a matrix devoid of or having a consistent concentration or amount of the analytes of interest processed simultaneously with and under the same conditions, preparatory and analyses steps as the associated samples. A method blank is a negative control sample for chemistry UOAs.

"Negative Control" is a quality control procedure to identify if samples as subject to contamination.

"Negative Control Sample" is a sample analyzed for a given UOA which is expected to produce a negative or zero response and is used as part of negative control procedure.

"Not Acceptable" means that the PT study provider or ELAP has determined that the PT study findings do not meet acceptance criteria specified for the study undertaken.

"On-Site Assessment" means a systematic evaluation by ELAP staff of a laboratory's compliance with the requirements of this chapter.

"Owner" means any person who is a sole proprietor of a laboratory, or any person who holds a partnership interest in a laboratory, or 5% (five percent) or more shareholder in a corporation which owns a laboratory.

"Owner's agent" or "agents of owners" or "officer", means those persons who have been designated by the Owner(s) of the laboratory to act in its behalf for purposes of complying with this chapter or the statutes under which this chapter has been adopted.

"Quality control" means the overall system of technical activities designed to measure and control the quality of a product or service that meets the stated needs of users.

"Quality management system" means a structured and documented management arrangement describing the policies, objectives, principles, organizational authority, responsibilities, accountability, and implementation plan of an organization for ensuring quality in its work processes, products and services.

"Revocation" means cancellation of a laboratory's certification of accreditation on permanent basis

"State regulatory agency" means an agency that requires the analysis of environmental samples that has been established under regulatory and/or statutory requirements by the State Water Resources Control Board (SWRCB), Regional Water Quality Control Boards (RWQCBs), the Department of Toxic Substances Control (DTSC), the California Environmental Protection Agency (Cal/EPA), the Department of Public Health (DPH), the Department of Food and Agriculture (DFA), Department of Fish and Wildlife (DFW), or any successor agencies.

"Support equipment" means devices that may not be analytical instruments, but that are necessary to support laboratory tests and operations. These devices include, but are not limited to, autoclaves, balances, ovens, refrigerators, freezers, incubators, water baths, temperature measuring devices, sample preparation devices and volumetric dispensing devices when quantitative results depend on the accuracy of the support equipment.

"Suspension" means a temporary cancellation of a laboratory's certificate of accreditation.

"Test method" means an analytical testing technique or procedure that a State regulatory agency requires to be used to determine the level of a designated analyte in an environmental sample for the purposes of assessing compliance with its statutes, regulations and/or permits.

"Unit of accreditation" or "UoA" means a specific combination of: (a) for ELAP accreditation, a State regulatory agency, or for NELAP accreditation, a matrix, (b) a test method or technology, and (c) a designated analyte or analyte group for which accreditation may be obtained.

#### ARTICLE C. Accreditation Process

#### **SECTION 1 Accreditation Process**

- (a) To obtain a certificate of accreditation (certificate), a laboratory shall meet the following requirements:
- (1) Submit an application, pursuant to Section 2;
- (2) Except for interim and reciprocal certificates, complete an on-site assessment, pursuant to Article Q for ELAP accreditation;
- (3) Achieve Acceptable Results in the required proficiency testing studies (PT studies) pursuant to Article Q for ELAP accreditation; and
- (4) Pay the required fees pursuant to Article X.
- (b) The period of the certificate shall be based on the anniversary of the initial certificate of accreditation and shall be as follows:
- (1) For an ELAP certificate, two years;
- (2) For an amended ELAP certificate, the time remaining on the certificate from the date it was amended.
- (c) To renew a certificate, at least ninety days prior to its expiration date, a laboratory shall submit a renewal application pursuant to Section 2.

SECTION 2 Application for Accreditation.

- (a) To apply for an initial, renewed, or amended ELAP certificate, a laboratory shall submit an application to ELAP that includes the following:
- (1) Details on the laboratory's type, location, contact information and ownership;
- (2) Qualifications of personnel, addressing the requirements in Article F including, Laboratory Director, Supervisors, and Analytical Specialist(s);
- (3) FoA(s) and/or UoA(s) for which accreditation is being requested;
- (4) A list of all California State regulatory agencies and data users with unique measurement quality objectives.
- (5) Quality assurance manual pursuant to Article I for ELAP accreditation
- (6) Fees, pursuant to Article X
- (7) Signature of the Laboratory Owner, owner's agent, or officer, and date signed.

- (b) To remove one or more UoAs or FoAs from its certificate:
- (1) In between renewals, the laboratory shall submit a written request to ELAP and receive an amended certificate.
- (2) At the time of renewal, the laboratory shall indicate the requested changes on its renewal application.

## Article B — Purposes of Laboratory Accreditation

- (a) This chapter was promulgated for the following purposes:
- (1) The purpose of this chapter is to protect public health, safety, welfare and the environment by ensuring the accuracy, precision, representativeness, comparability, completeness, sensitivity, and reliability of data generated by environmental laboratories by establishing an accreditation program for environmental laboratories which report results to California state regulatory agencies.
- (2) To link the data quality needs of the data users of the California state regulatory agencies to the laboratories that analyze sample through measurement quality objectives
- (3) To establish an accreditation program for laboratories performing analyses for California state regulatory agencies;
- (A) State Water Resources Control Board Division of Drinking Water
- (B) State Water Resources Control Board Division of Water Quality / Regional Water Quality Control Boards
- (C) Department of Toxic Substances Control
- (D) Department of Food and Agriculture
- (E) Department of Public Health
- (F) Department of Fish and Wildlife
- (4) To confine a laboratory's scope of accreditation to the Units of Accreditation for which the laboratory is conducting compliance monitoring for the above agencies;
- (5) To establish the procedures to be followed by accredited environmental laboratories, and by laboratories seeking to become accredited environmental laboratories;
- (6) To require that accreditation be contingent upon continued compliance with the standards of performance set forth in this chapter; and
- (7) To establish the enforcement procedures that the ELAP shall follow to ensure that a certified environmental laboratory is in compliance with this chapter.
- (b) Compliance with this chapter will assist a laboratory in meeting the data quality objectives of California state regulatory agencies with regard to accuracy, precision, completeness, comparability, and representativeness. The laboratory shall produce data with known quality assurance and quality control procedures, and in accordance with the Units of Accreditation for which it is accredited.

## Article D — Quality Management Systems

- (a) All laboratories seeking certification in any Unit of Accreditation as identified in Section 64823 within Field(s) of Accreditation 101 through 129, as listed in Health and Safety Code, Section 1017, are conducting analytical activities for environmental regulatory agencies of the State of California for compliance purposes.
- (b) This Article establishes the requirements for laboratories seeking accredited under this chapter for personnel, facilities, equipment, standard operating procedures, records, standards, quality assurance, quality control, method selection, sample handling, corrective action, notification, and documentation requirements for laboratories to meet the measurement quality objectives of those environmental regulatory agencies of the State of California.
- (c) Laboratories shall conduct their analytical activities under a quality system that incorporates the provisions of this section. The quality system must incorporate the measurement quality objectives of the appropriate data user from California state regulatory agency.
- (1) Laboratories accredited in Fields of Accreditation 101 106 and 129 shall use measurement quality objectives used by the data users from the State Water Resources Control Board Division of Drinking Water Programs.
- (2) Laboratories accredited in Fields of Accreditation 107 113 shall use measurement quality objectives used by the data users from the State Water Resources Control Board Division of Water Quality or the Regional Water Quality Control Boards or Department of Fish and Wildlife.
- (3) Laboratories accredited in Fields of Accreditation 114 121 shall use measurement quality objectives used by the data users from the Department of Toxic Substance Control.
- (4) Laboratories accredited in Fields of Accreditation 124 125 shall use measurement quality objectives used by data users from the Department of Food and Agriculture.
- (5) Laboratories accredited in Fields of Accreditation 126 shall use measurement quality objectives used by the Department of Public Health.
- (d) Measurement quality objectives may vary with different projects and programs from different data users in different California state regulatory agencies may be found in Quality Assurance Project Plans, Sampling and Analysis Plans, or other similar documents.
- (e) If no measurement quality objectives are available, laboratories shall use the measurement quality objectives identified in Article E.
- (f) The laboratory's quality management system shall be described in a Quality Management System Manual which will include all elements required in this chapter.

(g) At least one individual, however named, within a laboratory's organization or under the laboratory's employment shall be identified to the program and in the Quality Management System Manual as responsible for establishing, implementing, assessing, and revising, as needed, a laboratory's quality system. This individual may perform other activities.

## **Article E Measurement Quality Objectives**

- (a) As identified in Article D of this chapter accredited laboratories are required to incorporate the measurement quality objectives of the data users in California state regulatory agency to which the results are to be reported. However not all data users and California state regulatory agencies have data quality objectives for every sample submitted for analysis. This Article establishes the measurement quality objectives for laboratories to use when the California state regulatory agency or data user does not provide them.
- (b) Laboratories will use the appropriate quality control procedures identified in the approved methods identified in unit of accreditation for which the laboratory is accredited and which the data user has requested.
- (c) Those units of accreditation which identify methods that do not have their own quality control requirements shall use the following measurement quality objectives.
- (1) Negative Controls shall be processed along with and under the same conditions, including all sample preparation steps, as the associated samples in a preparation batch. The purpose of negative controls is to identify contamination.
- (A) Method Blanks are not appropriate or required for analysis of pH, alkalinity, conductivity, disinfectant residuals, color, odor, radiochemistry methods, and bio-assay methods.
- (B) Method Blanks shall be processed at a frequency of at least one per preparation batch.
- (C) Whenever a method blank contains analytes of interest above the detection limit of an analysis, the laboratory shall evaluate the nature of the interference and its effect on each sample in a preparation batch.
- (D) A sample in a batch shall be reanalyzed or qualified if the concentration of an analyte of interest in the associated method blank exceeds the highest of any of the following values:
- (i) For FOAs 102 105 the Detection Limit for Reporting or Minimum Reporting Level where they exist and the Method Detection Limit where they do not.
- (ii) five percent (5%) of the Maximum Contaminant Level or Action Level.
- (iii) For FOAs 107 111 the Minimum Level as identified in the State Implementation Plan or
- (iv) five percent (5%) of the lowest criterion in the California Toxics Rule
- (iii) For FOAs 114-117, ten percent of the measured concentration of any sample in the batch.
- (E) For FOAs 101, 106, and 127 negative controls consist of sterility checks and negative control cultures. These procedures are described in Standard Methods 9020 and 9050 22<sup>nd</sup> Edition.

- (2) Positive Controls shall be processed along with and under the same conditions, including all sample preparation steps, as the associated samples in a preparation batch. The purpose of positive controls is to identify contamination or loss of analyte.
- (A) For FOAs 102 105, For FOAs 107 111, and FOAs 114-117 Laboratory Fortified Blanks shall be processed along with and under the same conditions, including all sample preparation steps, as the associated samples in a preparation batch as positive controls.
- (B) Laboratory Fortified Blanks are not appropriate or required for analysis of pH, alkalinity, conductivity, disinfectant residuals, color, or odor.
- (C) Laboratory Fortified Blanks shall be processed at a frequency of at least one per preparation batch.
- (D) The recovery of analytes should be between 50% and 150%.
- (E) For FOAs 101, 106, and 127 positive controls consist of positive control cultures. These procedures are described in Standard Methods 9020 and 9050 22nd Edition.

## **Article F Laboratory Personnel**

- (a) The laboratory shall have management and analytical staff with education, training or experience that allows them to comply with the requirements of this chapter and the measurement quality objectives of the particular data user or California state regulatory agency to which they are reporting results.
- (b) Each laboratory shall designate a laboratory director. Except as provided in Subsections (c) and/or (d), the laboratory director shall have as a minimum:
- (1) A baccalaureate degree in chemistry, biochemistry, biology, microbiology, environmental, sanitary or chemical engineering, natural or physical science; and
- (2) Three years of experience in the analysis of chemical, biological, or microbiological samples, prior to being designated laboratory director, subject to the following allowances:
- (A) A master's degree in chemistry, biochemistry, biology, microbiology, environmental, sanitary or chemical engineering, natural or physical science may be substituted for one year of the required experience.
- (B) A doctorate in chemistry, biochemistry, environmental, sanitary or chemical engineering, biology, microbiology, natural or physical science may be substituted for two years of the required experience.
- (c) Except as provided in Subsections (d) and/or (e), prior to being designated a laboratory supervisor an analytical specialist, a person shall have as a minimum a baccalaureate degree in chemistry, biochemistry, biology, microbiology, environmental, sanitary or chemical engineering, natural or physical science; and, if working for the laboratory, be under the supervision of a laboratory director or analytical specialist; and have:
- (1) A certification of completion for a course taught by the manufacturer of the sophisticated laboratory instrument which is being used or supervised by the analytical specialist; or
- (2) Six months experience operating a sophisticated laboratory instrument to analyze water, wastewater, solid waste, hazardous waste or other environmental samples, or food.
- (d) In lieu of meeting the requirements specified in Subsections (a) or (b), a laboratory director or analytical specialist(s) employed by a laboratory owned by a public drinking water or wastewater utility shall have an Analyst/Water Quality Analyst Certificate from the California Water Environment Association (CWEA) or the California-Nevada Section of the American Water Works Association (CA-NV/AWWA), pursuant to Table 64814, as follows:
- (1) A laboratory director shall have, or obtain within one year of assuming the position, the highest certificate grade required for the performance of any FoA for which the laboratory is accredited.

(2) An analytical specialist shall have, or obtain within one year of assuming the position, the certificate grade required for the FoA(s) and UoAs for which the analytical specialist conducts, analyses, or supervises others conducting analyses for the laboratory.

Table 64814
Minimum Personnel Certification

Fields of Accreditation	Minimum	UoAs Allowed
(FoAs)	<u>Certificate</u>	·
	<u>Grade</u>	
101, 108	Ī	All
102, 109	Ī	Alkalinity, Hardness, Total Filterable Residue,
		Conductivity, Chloride
109	II	Acidity, BOD, COD, Chlorine Residual, DO, pH, Turbidity,
		Residues
102, 109	III	<u>All</u>
103, 110	III	All, except those using ICP-MS
104, 111	Ш	All, except those using GC-MS or LC-MS

- (e) The following shall be exempt from meeting Subsections (a), (b) and (c):
- (1) A laboratory director, laboratory supervisor, or analytical specialist who was employed by an environmental testing laboratory at the time that the laboratory was accredited, provided that the accreditation date was on or before December 31, 1994.; and
- (2) A director of a public health laboratory, pursuant to Health and Safety Code Sections 101150 and 101160.
- (f) A laboratory director, or his/her designee, shall be responsible for:
- (1) All analytical and operational activities of the laboratory; and
- (2) The accuracy and quality of all data reported by the laboratory.
- (g) A laboratory director shall assume the position of, or shall designate another person as, the analytical specialist responsible for the use of each sophisticated laboratory instrument in the laboratory.
- (h) If a laboratory director leaves and is not replaced within 15 days by a person meeting the laboratory director requirements in this section, a person or persons with lesser qualifications may serve as a temporary director for a period not to exceed ninety days, provided that the laboratory notifies ELAP, describing the qualifications of the temporary director and receives written approval from ELAP. Additional extensions of no more than ninety days beyond the original 90-day period may be granted by ELAP; provided the laboratory can document that its good-faith efforts to fill the position with a qualified director were unsuccessful for reasons beyond its control.
- (i) The laboratory director shall ensure that when analytical staff are to begin using a new method, they must be trained and then conduct an initial demonstration of capability.

- (1) When the method that the laboratory is accredited for contain protocols for demonstrating initial capability personnel performing analyses using these methods for units of accreditation that the laboratory is accredited for shall perform the protocols and shall meet any associated evaluation criteria and document results.
- (2) When the method that the laboratory is accredited for does not contain protocols for demonstrating initial capability, personnel performing analyses using this method for units of accreditation that the laboratory is accredited for, the laboratory shall require that the analyst perform the protocols similar to those of methods with protocols. These may include:
- (A) Method blanks with results shall be consistent with requirements in Article E
- (B) Certified Reference Materials with a recovery within +/-25% of the target value
- (C) Laboratory Fortified Blanks with a recovery within +/-25% of the target value
- (D) Matrix Spike Samples with a recovery within +/-25% of the target value
- (E) The laboratory may propose alternative protocol to the program which achieve the same objective.
- (3) The laboratory director shall ensure that documentation that each person performing a given test on compliance samples has satisfied the demonstration of capability criteria established by the laboratory is retained.
- (4) The laboratory director shall ensure that standard operating procedures consistent with Article K are produced and represent current laboratory practice
- (5) The laboratory director shall ensure that a quality management system consistent with Article D are produced and represent current laboratory practice.
- (6) The laboratory director shall ensure that a quality management system consistent is accurately summarized and described in the quality assurance manual consistent with Article I
- (5) The laboratory director and laboratory supervisor shall ensure that the analytical staff are familiar with standard operating procedures and are actually implementing them
- (6) The laboratory director and laboratory supervisor shall ensure that the analytical specialist are properly trained on the specialized equipment that they assigned and are using the appropriate standard operating procedures.

## Article G Laboratory Facilities and Equipment

A laboratory shall be arranged and operated so that:

- (a) Utilities are maintained to allow the laboratory equipment to function and produce analyses for each unit of accreditation for which the laboratory is accredited and meeting for the measurement quality objectives for the data users and California state regulatory agency to which the results are to be reported to;
- (b) Ventilation and environmental control are maintained to ensure that analytical results do not exceed quality control limits as specified in the approved test methods or in the laboratory's quality assurance manual consistent with Article I and meeting for the measurement quality objectives for the California state regulatory agency to which the results are to be reported to;
- (c) The potential for sample contamination is minimized; and
- (d) Analytical equipment conforms to analytical method requirements and allows compliance with the appropriate measurement quality objectives.
- (e) All support equipment including but not limited to refrigerators, freezers, ovens, autoclaves, scales, mechanical and automatic volumetric dispensing devices, including pipettes, micro-pipettes, burettes and automatic dilutors and dispensers and thermometers shall be kept in working order by submitting it to routine and preventive maintenance. Standard Operating Procedures consistent with Article F shall be developed for operation and maintenance of support equipment. Records of maintenance shall be kept and made available for review consistent with Article L.
- (f) All analytical instruments shall be properly operated and maintained.
- (1) All analytical instruments shall be operated by personnel trained in their use as described in Article F. Standard Operating Procedures for the use and maintenance of equipment shall be prepare in accordance with Article K and shall be available to instrument operators.
- (2) All instruments shall be properly maintained, inspected and cleaned according the SOP. Records of operation and maintenance activities shall be maintained and made available for review.
- (3) Analytical instruments have been shown to be defective or outside of performance specifications identified in the SOP shall be taken out of service and either retired or brought back into specifications.
- (4) When analytical instruments leave the direct control of the laboratory for maintenance or for any other reason, the laboratory shall ensure that the functional and calibration status of those analytical instruments are checked or demonstrated to be satisfactory before the instruments are returned to service.

# **Article H Required Test Methods**

- (a) Any laboratory requesting accreditation from the ELAP for Units of Accreditation in Fields of Accreditation 101 through 106 and/or 128 as identified in Article J, shall employ those methods identified in H&SC 100852 or as identified by the Division of Drinking Water for regulatory compliance purposes. If a Public Water System has a permit issued by the Division of Drinking Water which requires that Public Water System to use a test method for a specific analyte that had once been listed in the Code of Federal Regulation Title 40 Part 141 but is no longer so listed, a laboratory may seek accreditation for that test method and analyte combination but may only use that combination for samples from that Public Water System. If the permit is updated by the Division of Drinking Water and that requirement to use that method analyte combination is removed, the accreditation for the laboratory shall be revoked.
- (b) Any laboratory requesting ELAP accreditation from the State Board / ELAP for Units of Accreditation in Fields of Accreditation 107 through 113 as identified in Article J, shall employ those methods identified in H&SC 100852 or as identified by the State Water Resource Control Board or a Regional Water Quality Control Board or the Department of Fish and Wildlife for regulatory compliance purposes. If a National Pollutant Discharge Elimination System (NPDES) permittee or a Waste Discharge Requirement (WDR) holder or other permit issued by the State Water Resource Control Board or a Regional Water Quality Control Board or the Department of Fish and Wildlife which requires that permittee to use a test method for a specific analyte that had once been listed in the Code of Federal Regulation Title 40 Part 136 but is no longer so listed, a laboratory may seek accreditation for that test method and analyte combination but may only use that combination for samples from that permittee. If the permit is updated by the SWRCB or RWQCB and that requirement to use that method analyte combination is removed, the accreditation for the laboratory shall be revoked.
- (c) Any laboratory requesting ELAP accreditation from the State Board / ELAP for Units of Accreditation in Fields of Accreditation 114 through 121 as identified in Article J, shall employ those methods identified in 22 CCR § 66261.24 or as identified by the Department of Toxic Substance Control for regulatory compliance purposes.
- (d) Any laboratory requesting accreditation from ELAP for Units of Accreditation in Fields of Accreditation 122 through 125 as identified in Article J, shall employ those methods identified in X or as identified by the Department of Food and Agriculture for regulatory compliance purposes.
- (e) Any laboratory requesting accreditation from the ELAP for Units of Accreditation in Fields of Accreditation 126 as identified in Article J, shall employ those methods identified by the Department of Public Health for regulatory compliance purposes.

#### **Article I Quality Assurance Manual**

- (a) To obtain and maintain ELAP accreditation, each laboratory shall establish, have available for review by ELAP, and implement a quality management system consistent with Article D for all UoA for which it seeks, or is maintaining, accreditation which is summarized and described in a quality assurance manual:
- (b) The quality manual shall have a format, however conceived, that addresses the content elements specified in this section. Content elements may be presented in narrative, tabular, schematic or graphical form. The manual shall be a document in hard copy or electronic format traceable to the laboratory.
- (c)The quality assurance manual shall address all quality assurance and quality control practices to be employed by the laboratory and shall at least, include the quality assurance and quality control requirements specified in the test methods in the UOAs for which the laboratory holds, or seeks, certification. The quality manual shall include, address or refer to, at a minimum, the following elements:
- (1) A description of the Quality Management System consistent with Article D, including.
- (A) A list of all FoAs and UoAs consistent with Articles H and J.
- (B) A list of all data users from California state regulatory agencies to which the laboratory submits results consistent with the information in the application for accreditation in Article C.
- (C) A list of all measurement quality objectives consistent with Article E
- (D) A list of all SOPs consistent with Article K
- (E) A list of all standards consistent with Article M
- (2) Organization and management structure of the laboratory.
- (3) Procedures for retention, control and maintenance of documents used in or associated with analyses consistent with Article L.
- (4) Procedures for achieving traceability of standards, reagents and reference materials used to derive any results or measurements consistent with Article M.
- (5) Procedures for handling samples and documenting chain of custody consistent with Article N.
- (6) Lists of major analytical instruments and support equipment consistent with Article G.
- (7) Description of the facilities consistent with Article G.
- (8) Procedures for evaluating quality control samples, such as method blanks, laboratory fortified blanks, laboratory control samples, matrix fortified samples and replicates consistent with Articles D and E.

- (9) Procedures for initiating, following up on and documenting corrective action addressing quality assurance and quality control failures, discrepancies or nonconformance consistent with Article O.
- (10) Procedures for reviewing analytical data and reporting analytical results consistent with Article P.
- (d) The Laboratory Director shall review, and amend if necessary, the quality management system, and quality program manual, standard operating procedures at least annually. The Laboratory Director shall also review and amend the quality assurance program and manual whenever there are changes in methods or laboratory equipment employed, in the laboratory structure or physical arrangements, or changes in the laboratory organization.

# **Article J Fields of Accreditation**

Pursuant to Article C of this Chapter, a laboratory seeking accreditation shall specify the individual units of accreditation (UoAs) within the Fields of Accreditation (FoAs) in Table 1

# Table 1

# Fields of Accreditation

FOA	State Regulatory Agency	FOA Name
101	SWRCB – Division of Drinking Water	Microbiology
102	SWRCB – Division of Drinking Water	General Physical and Inorganic Tests
103	SWRCB – Division of Drinking Water	Spectroscopy and Ion Chromatography
104	SWRCB – Division of Drinking Water	Volatile Organic Compounds
105	SWRCB – Division of Drinking Water	Semi-Volatile Organic Compounds
106	SWRCB – Division of Drinking Water	Radiochemical Techniques
107	SWRCB – Division of Water Quality	Microbiology
108	SWRCB – Division of Water Quality	General Physical and Inorganic Tests
109	SWRCB – Division of Water Quality	Spectroscopy and Ion Chromatography
110	SWRCB – Division of Water Quality	Volatile Organic Compounds
111	SWRCB – Division of Water Quality	Semi-Volatile Organic Compounds
112	SWRCB – Division of Water Quality	Radiochemical Techniques
113	SWRCB – Division of Water Quality	Whole Effluent Toxicity
114	Department of Toxic Substances Control	Spectroscopy and Ion Chromatography
115	Department of Toxic Substances Control	Waste Extraction Test
116	Department of Toxic Substances Control	Volatile Organic Compounds
117	Department of Toxic Substances Control	Semi-Volatile Organic Compounds
118	Department of Toxic Substances Control	Radiochemical Techniques
119	Department of Toxic Substances Control	Whole Effluent Toxicity
120	Department of Toxic Substances Control	Physical Properties of Hazardous Waste

	121	Department of Toxic Substances Control	Bulk Asbestos Analysis of Hazardous Waste
:	122	Reserved	
:	123	Department of Food and Agriculture	Inorganic Chemistry
:	124	Department of Food and Agriculture	Pesticide Residues by GC-MS
:	125	Department of Food and Agriculture	Pesticide Residues by GC
;	126	Reserved	
	127	Department of Public Health	Shellfish Sanitation
;	128	Reserved	
:	129	SWRCB – Division of Drinking Water	Cryptosporidium

#### **Article K Standard Operating Procedures**

- (a) Laboratories shall maintain written standard operating procedures that document or reference activities needed to maintain their quality management systems and that enable performing or reproducing an analysis in its entirety as performed at the laboratory.
- (b) Standard operating procedures shall, where available, incorporate the measurement quality objectives of the data users of the California state regulatory agency to which results are routinely reported. Otherwise the quality control procedures found in methods identified in the UoAs for which the laboratory has or is seeking accreditation or found in Article E if the standard operating procedure is for a test method.
- (c) Standard operating procedures may be documents written by laboratory personnel or may consist entirely of copies of published documents, manuals or procedures if the laboratory follows the chosen source exactly.
- (d) Standard operating procedures may consist in part of copies of published documents, manuals or procedures if:
- (1) Modifications to the published source are described in writing in additional documents.
- (2) Clarifications, changes or choices are completely described in additional documents, when published sources offer multiple options, ambiguous directives or insufficient detail to perform or reproduce an analysis.
- (e) Standard operating procedures shall indicate their dates of issue or revision.
- (f) There shall be standard operating procedures for test methods performed for programs covered by this chapter.
- (g) The standard operating procedures for test methods may consist of published or referenced test methods, or standard operating procedures written by the laboratory as allowed in this section.
- (h) The essential elements standard operating procedures for test methods may be presented in narrative, tabular, schematic or graphical form. The analytical methods manual shall be an identifiable document in hard copy or electronic format traceable to the laboratory.
- (i) When the analytical methods manual consists of standard operating procedures written by the laboratory, each standard operating procedure shall include, address or refer to, at a minimum, the following elements:
- (1) Identification of the test method consistent with Articles H and I.
- (2) Applicable analytes consistent with the UOAs listed on the laboratories certificate of accreditation.
- (3) Applicable matrices.

- (4) Method sensitivity.
- (5) Potential interferences.
- (6) Equipment and analytical instruments consistent with Article G and the test methods in the UOAs listed on the laboratories certificate of accreditation.
- (7) Consumable supplies, reagents and standards identified in the UOAs listed on the laboratories certificate of accreditation.
- (8) Sample preservation, storage and hold time.
- (9) Quality control samples and frequency of their analysis.
- (10) Calibration and standardization.
- (11) Procedure for analysis.
- (12) Data assessment and acceptance criteria for quality control measures.
- (k) When a procedure or test method is used to produce results to be reported to different data users with different measurement quality objectives, a separate standard operating procedure will be prepared for each different user.
- (I) Standard operating procedures, whether they describe test methods or not, shall have a standard format in the following order.
- (1) Name of the laboratory
- (2) Title describing what standard operating procedure encompasses.
- (3) Summary of the procedure
- (4) Data user of the California state regulatory program to which the results are being submitted
- (5) Measurement Quality Objective to be met
- (6) Equipment and Supplies
- (7) Reagents and Standards
- (8) Sample Collection, Preservation, and Storage
- (9) Quality Control /Quality Assurance
- (10) Calibration and Standardization
- (11) Procedure

(12) Data Analysis

#### **Article L Records and Documents**

- (c) The laboratory shall establish procedures to control and manage all records and documents that form part of its quality system and that are required to demonstrate compliance with this chapter.
- (d) The procedures shall be written and consistent with Article K and be part of the Quality Assurance Manual described in Article I.
- (e) Each laboratory shall maintain comprehensive records of all laboratory activities, including original observations, calculations and derived data, calibration records and copies of test reports for a minimum of five (5) years
- (f) The department may require in writing that records be retained for a longer period than that specified in paragraph (c) if ELAP or a data user from a California state regulatory agency has initiated legal action involving test results or the certification or registration status of the laboratory.
- (g) The laboratory shall identify to ELAP a responsible party for retaining documents and records for the required period in the event the laboratory changes ownership or ceases to be accredited.
- (h) Records and documents shall be handled and stored in a manner that ensures their permanence and security for the required retention period, and that facilitates their retrieval to demonstrate compliance with this chapter.
- (i) Records and documents shall be legible and their entries shall be safeguarded against obliteration, erasures, overwriting, and corruption.
- (1) Handwritten records shall be recorded in black or blue ink.
- (2) Records and documents that are stored only on electronic media shall be supported by the hardware and software necessary for their retrieval and reproduction into hard copy.
- (3) Corrections or other alterations made to entries in records or documents may not obscure the original entry, must be dated and initialed.
- (4) The laboratory shall have procedures to prevent unauthorized access or amendments to records and documents.
- (j) Administrative records that laboratories shall maintain include:
- (1) Certificates of certification or registration issued by ELAP.

- Records of personnel qualifications, experience and training when personnel are required to possess or maintain specific Records of demonstration of capability for each analyst required to perform the demonstrations consistent with Article F
- (3) Copies of or access to other standards and documents necessary for the laboratory to operate or to maintain compliance with this chapter.

## **Article M Standards**

- (k) The laboratory shall ensure that results of analyses can be linked to all the standards and reagents used to derive results. Standards and reagents used in analyses shall conform to the purity specifications contained in approved methods identified in the units of accreditation for which the laboratory is accredited. When approved methods do not specify the purity of the standards and reagents to be used, the laboratory shall choose standards and reagents of sufficient purity to ensure the results consistent with measurement quality objective identified in Article E.
- (I) The laboratory shall certify the accuracy of all reference materials used to calibrate or verify the calibration of analytical support equipment. Reference materials shall be calibrated by a body independent of that in charge of analytical operations that can provide traceability to primary standards maintained by National Institute of Standards and Technology.
- (m) When reference materials traceable to NIST are not produced, manufactured or commercially available, the laboratory shall use materials of a quality that will ensure the accuracy of the calibrated or verified support equipment for its intended use and consistent with the measurement quality objectives in Article E.
- (n) The laboratory may not use standards and reagents beyond the expiration dates identified by the manufacturer, unless the laboratory can verify their reliability in a defensible manner.
- (o) The laboratory shall document the identity, source and purity of all standards and reagents used in tests methods performed. The laboratory shall retain records of certificates of analysis or purity, when the records are provided by the supplier, and are necessary to establish the identity, source or purity of standards and reagents.
- (p) Original containers of standards and reagents shall be labeled with a receipt and an expiration date.
- (q) The laboratory shall document the lot number, manufacturer, date of receipt and the date of expiration of stock standards and reagents separately from their containers to ensure this information will be retained when the containers are discarded.
- (r) The laboratory shall maintain records that detail the preparation of intermediate and working standards and reagents consistent with Article L. These records shall link the intermediate and working standards and reagents to their respective originating stocks or neat compounds and shall indicate their date of preparation, expiration and the identity of the preparer.
- (s) The laboratory shall retain records and certificates that trace reference materials used to calibrate or verify analytical support equipment to the source of the corresponding reference materials.

(t) The laboratory shall retain records demonstrating that the accuracy of the reference materials has been certified or verified, at the required frequencies, by a body outside of that in charge of analytical operations.

## **Article N Sample Handling and Chain of Custody**

- (u) The laboratory shall have and follow a written policy that clearly outlines the conditions under which samples will be accepted or rejected for analysis, or under which associated reported results will be qualified. The policy shall be in the format of a standard operating procedure consistent with Article K and be part of the quality assurance manual as described in Article I. The policy will be provide procedures to ensure that the measurement quality objectives of the data user from a California state regulatory agency for which the samples are being analyzed are met or if no such MQOs exist, the measurement quality objectives of Article E are met.
- (v) The policy shall describe how samples received by a laboratory for analysis shall:
- (1) Be assigned a unique identification code. This code may be as simple as a location and a date or equivalent so long as it is unique.
- (2) The unique identification code shall be placed on a sample container as a durable label.
- (3) The unique identification code shall be used as a link to associate samples with their complete history, including treatment and analysis, while in the laboratory's possession.
- (4) Chain-of-custody documentation shall be required for samples collected for compliance with this chapter.
- (w) The policy shall include the sample preservation procedures and holding times required by state and federal regulations and the measurement quality objectives of the state regulatory agency. If the sample preservation procedures and holding times are not required by state or federal regulations, laboratories shall follow the sample preservation procedures and holding times established in the analytical method identified in the UOA that they are accredited for and are using for the samples being processed.
- (1) Laboratories analyzing samples for UOAs found in FOA 101 106, 127, and 129 shall be compliant with requirements found in the Code of Federal Regulations Title 40 Section 141
- (2) Laboratories analyzing samples for UOAs found in FOA 107 113 shall be compliant with requirements found in the Code of Federal Regulations Title 40 Section 136
- (3) Laboratories analyzing samples for UOAs found in FOA 114 113 shall be compliant with requirements found in the California Code of Regulation Title 22 Division 4.5 Chapter 11
- (4) Laboratories accredited in Fields of Accreditation 124 125 shall use measurement quality objective used by the Department of Food and Agriculture.
- (x) The laboratory shall retain records supplied by the collector in a fashion consistent with Article L to allow the laboratory and ELAP on site assessors to evaluate collection procedures against the laboratory's sample acceptance policy.
- (y) When the laboratory provides containers and preservatives for sample collection, including glass bottles, plastic bottles, and bulk sampling containers such as "carboys", the laboratory shall have standard operating procedures in place which address concerns that the containers are adequately

cleaned and not contributing to contamination of samples, do not contain analytes of interest at levels which will affect sample determinations and that the preservatives used are sufficiently pure to maintain the validity of reported results. Containers supplied by the laboratory for sample collection shall allow collecting a sufficient amount of sample to perform all required or requested determinations at the required or desired sensitivity.

- (z) The laboratory shall document the receipt and condition of all samples in chronological hard copy or electronic records as well as the history of the sample from collection to analysis. Chain of custody records shall be part of the sample handling policy and practice. The records may be maintained in any format that retains the following information:
- (1) The identity of the client or entity submitting samples, or the project associated with the received samples.
- (2) The dates of sample collection and laboratory receipt.
- (3) The unique sample identification code assigned by the laboratory.
- (4) Documentation of sample preservation status and other sample conditions on receipt.
- (5) An unequivocal link between the sample identification code assigned by the laboratory and the field collection identification code assigned by the collector.
- (6) The reference to requested test methods, when the collector or sample originator specifies them.
- (7) Any comments resulting from the inspection undertaken to determine whether samples meet the policy identified above.
- (aa) The laboratory shall have procedures and appropriate facilities which will:
- (1) Avoid deterioration, contamination, loss or damage of samples during storage.
- (2) Samples shall be stored separately from all standards, reagents, food and other potentially contaminating sources.
- (3) Samples shall be stored in areas that prevent or minimize cross-contamination.
- (4) Sample extracts, digestates, leachates or concentrates, resulting from any initial preparatory step, shall be stored as specified in this subsection.

## **Article O Corrective Actions**

- (1) The laboratory shall take corrective action when:
- (a) Departures from established policies and procedures in the quality management system consistent with Article D and codified in the Quality Assurance Manual in Article I are identified or become apparent.
- (b) Measurement quality objectives consistent with Article E, including measurement quality objectives required by data users from California state regulatory agencies, the individual methods identified in the UoAs for which the laboratory is accredited, or the Article E itself.
- (c) Quality control samples and procedures, including proficiency testing samples, fail established acceptance limits or evaluation criteria.
- (2) The corrective action shall identify the source of the problem, correct the problem, and have a mechanism to verify the action has had the desired effect.
- (3) The laboratory shall document corrective action taken to address the nonconformance and any other changes resulting from corrective action investigations. Changes taken to address failures of quality control samples to meet established acceptance criteria shall be those that resolve or address the failure in an expeditious manner before affected results are released or reported by a laboratory.
- (4) The laboratory shall monitor the effectiveness of implemented corrective action changes and take additional corrective action when initial and or subsequent corrective action fails to resolve the nonconformance.

#### **Article P Notification and Reporting**

- (bb) Laboratories certified for FoAs 101, 102, 103, 104, 105 and/or 106 shall conform to the following reporting and notification requirements.
- (1) Laboratories reporting bacterial quality results as required by Title 22, California Code of Regulations, Section 64423.1 shall submit a bacterial monitoring report including information required in Title 22, California Code of Regulations, Sections 64423.1(c)(2) and (c)(3) directly to the Department.
- (2) The laboratory shall notify a water supplier's designated contact person as soon as possible, but within 24 hours, and record the method and time of notification or attempted notification, whenever any of the following occur:
- (A) The presence of total coliforms, fecal coliforms, or Escherichia coli (E. coli) is confirmed.
- (B) A bacterial sample is invalidated due to an interference as defined in Title 22, California Code of Regulations, Section 64425(b).
- (C) A nitrate sample exceeds the MCL.
- (3) If the laboratory is unable to make direct contact with the supplier's designated contact person within 24 hours, pursuant to subparagraphs (2)(A) or (C), the laboratory shall immediately notify the Department and provide a written record of the time and method of attempted contacts.
- (4) All analytical results conducted pursuant to Title 22, California Code of Regulations, Chapter 15, Domestic Water Quality and Monitoring, shall be reported directly to the Department electronically using the Electronic Deliverable Format as defined in The Electronic Deliverable Format [EDF] Version 1.2i Guidelines & Restrictions dated April 2001 and Data Dictionary dated April 2001, by the 10th day of the month following the month in which the analyses were completed.
- (5) Whenever a laboratory is requested by a water supplier, pursuant to Title 22, California Code of Regulations, Section 64425(a)(2), to submit evidence invalidating a sample due to laboratory error, the laboratory shall provide the supplier with information which shall include:
- (A) A letter from the Laboratory Director to the water supplier agreeing to the invalidation request by reason of laboratory accident or error;
- (B) Complete sample identification, laboratory sample log number (if used), date and time of collection, date and time of receipt by the laboratory, date and time of analysis for the sample(s) in question;
- (C) Complete description of the error alleged to have invalidated the result(s);
- (D) Copies of all analytical, operating, and quality assurance records pertaining to the incident in question; and

- (E) Any observations noted by laboratory personnel when receiving and analyzing the sample(s) in question.
- (b) Laboratories certified for FoAs 122 and 123 shall verify the identity and quantity of a pesticide residue before reporting the results.
- (c) In any arrangements between laboratories involving the transfer of samples, or portions of samples, the laboratory issuing the report of analyses shall include the original of any report(s) (or copy of the original) prepared by all other laboratories

#### Article Q On-Site Assessment

- (a) Each laboratory shall be subject to an on-site assessment to obtain its initial certificate and every two years thereafter by ELAP to verify the information submitted with its ELAP certificate application pursuant to Article C, including compliance with requirements in:
- (1) Methods used for each UoA for which the laboratory seeks accreditation consistent with Article H;
- (2) Quality Management Systems consistent with Article D
- (3) Measurement quality objectives consistent those listed in the application described in Article C and with Article E
- (4) Personnel Requirements consistent with Article F
- (5) Quality Assurance Manual consistent with Article I
- (6) Standard Operating Procedures consistent with Article K
- (7) Record keeping and retention consistent with Article L
- (8) Standards and traceability consistent with Article M
- (9) Sample handling procedures consistent with Article N
- (10) Corrective action policy and practice consistent with Article O
- (11) Notification and Reporting practice consistent with Article P
- (b) Other on-site assessments.
- (1) If ELAP identified a deficiency on a previous on-site assessment, the agency may conduct a follow-up on-site assessment.
- (2) ELAP may conduct an on-site assessment when a laboratory applies to modify its scope of certification, when a transfer of owner occurs that affects personnel, equipment, or the laboratory facilities, or when a laboratory applies for an exemption or a variance. Any other change occurring in a laboratory's operations that might reasonably be expected to alter or impair analytical capability and quality may trigger an on-site assessment.
- (c) ELAP may conduct, at its discretion, either announced or unannounced on-site assessments. Advance notice of an assessment shall not be necessary.
- (d) On-site Assessment process
- (1) On-site assessors shall arrive at the laboratory during established working hours. The laboratory manager (or, if unavailable, the laboratory manager's designee) shall be located as soon as possible after the assessment personnel arrive on the premises.

- (2) A laboratory's refusal to admit the on-site assessors for an on-site assessment shall result in an automatic failure of the laboratory to receive certification or loss of an existing certification by the laboratory, unless there are extenuating circumstances that are accepted and documented by ELAP staff.
- (3) An opening conference shall be conducted and shall outline to goals of the on-site assessment, the items to be assessed on-site, records, personnel, equipment, facilities, documents that need to be examined.
- (4) On-site assessors may examine any records, equipment, facilities, documents that need to be examined that are part of the UOAs that the laboratory is seeking accreditation for and identified in the application submitted consistent with Article C.
- (5) On-site assessors may interview any personnel working in the facility that is identified in the application submitted under Article C or the Quality Assurance Manual identified in Article I or who may have a significant role in the quality of laboratory results.
- (6) On-site assessors may ask laboratory personnel to demonstrate how procedures and test methods are actually performed or examine procedures and test method in operation at the time of the on-site assessment. This may include conducting analytical tests, operating support equipment, sampling handling, record keeping, or any other activity described in this Chapter.
- (7) A closing conference shall be conducted and shall outline the findings of the on-site assessment. Any deficiencies or deviations for the standards listed in this chapter shall be identified.
- (8) The on-site assessors will prepare a letter following the closing conference summarizing the on-site assessment and all deficiencies and a schedule for rectification by the laboratory.
- (9) The laboratory may appeal the decision of the on-site assessors to the program within 30 days of receiving the deficiency letter.
- (e) Deficiencies deviations from specific requirements found in the methods listed in the UOAs that the laboratory is accredited for found in Article H, or any Article in this Chapter, California Health and Safety Code 100825 100920.

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# White Paper #5: Provisions of the TNI Documents which are Problematic

By David Kimbrough, Pasadena Water & Power

Numerous provisions of The NELAC Institutes (TNI) 2016 are very problematic for laboratories of all sizes but particularly for smaller laboratories. This paper attempts to present a small but representative sample of provision found in the 2016 TNI documents that are problematic.

Submitted to the California State Water Resources Control Board, October 6, 2016

# 1. Background

On September 6, 2016 the State Board gave notice that they would be holding a Workshop on proposed changes to the laboratory accreditation regulations. The focus of the proposed changes is the Environmental Laboratory Accreditation Program's (ELAP) proposal to use Volume 1 of The NELAC Institute's (TNI) 2016 documents as the basis for laboratory accreditation. The assumption that this proposal is based upon is that Current ELAP standards codified in regulations are inadequate. No one to date has disagreed with the general point, ELAP's Accreditation Standard, which is its regulations, is badly out of date. However, no one has actually identified exactly what are the deficiencies in current regulation and what regulatory authority does ELAP need that it currently lacks. Without a "Gap Analysis" to identify these shortcomings, there is no basis to assess any proposal for new regulations. More to the point at hand, there is no basis to say that the 2016 TNI document will actually fix the problems with ELAP's current regulations, whatever they may be, or indeed any problems at all. For example, if the only problem with ELAP's current regulations is that it cites out of date methods, adopting TNI as an accreditation requirement does not solve that problem. If the problem with ELAP's current regulation is that it has vague enforcement procedures, adopting TNI as an accreditation requirement does nothing to solve that problem either.

Quite beyond the question of whether requiring all laboratories to comply with the 2016 TNI documents solves any problems, there is also the matter of problem caused by adopting the TNI documents into regulation. The 2016 TNI document is very long (176 pages), there are well over 1,000 separate requirements in total, and the individual requirements are very broad, general, vague, and ambiguous. Further, the sheer number of requirements to produce written policies, procedures, and document compliance is overwhelming.

The purpose of this whitepaper is to provide a representative sample of the requirements found in 2016 TNI documents and show how they make laboratory accreditation more difficult for both the accredited laboratories and for ELAP.

# 2. Laboratory Director

Under current California regulation and TNI, every laboratory has to have someone in charge, a "laboratory director" in current regulations or "Technical Manager" in the TNI parlance. Both require that this individual possess a college degree in a laboratory science (e.g. chemistry, biology, microbiology, etc). California regulation however allows certain exceptions. Section 64817(2)(b) allows laboratory directors of drinking water or wastewater utilities to substitute a Cal-NV AWWA or CWEA Laboratory Analyst Certificate in lieu of possession of a college degree in a laboratory science. This exception is provided as it is often difficult for small facilities to get someone with the requisite degree to be a laboratory director.

INI Volume 1 Module 2 Section 5.2.6.2 Technical Manager Qualification Exceptions also has an exception. It does not include the laboratory analyst certificate exception found in current ELAP regulation, but TNI does include possession of a treatment operators certificate as an exception to possessing of a college degree in a laboratory science. Having an operator certificate does not qualify someone to be a laboratory director. The TNI provision completely misses the point, small utilities need someone with some training to be a laboratory director even if they do not have a college degree. Further, current ELAP regulation requires increasing levels of certification. For example a Grade I Laboratory Analyst Certificate holder can be a laboratory director only for laboratories accredited in basic chemistry and microbiological Fields of Accreditation 101, 108, and some of 102 and 109. A Grade 2 certificate is required for more advanced chemistries and microbiological tests in FOT 109, and a Grade 3 Certificate is required for even more advanced testing in FOTs 102, 103, 104, 109, 110, and 111.

In contrast the TNI document would allow any operator without any laboratory training at all to be a laboratory director. Further, this individual can only be grandfathered in, i.e. he or she has to have been in the employ of the utility as the laboratory director when it became TNI compliant. Once that individual leaves, all future Technical Managers have meet the college degree. It is a one-time exception.

The TNI language is far weaker than current California regulations but then creates a very large problem a few years from adoption as existing certified laboratory directors retire.

## 3. Internal Audits

TNI Volume 1 Module 2 Section 4.14 requires all laboratories conduct an annual internal audit which contains all of the provisions of the TNI. It is useful at this point to note that about three quarters of all laboratories accredited by ELAP have five or fewer employees and approximately half of all laboratories have two or fewer full time equivalents (FTE) of staff resources. The requirement for a one or two person laboratory to conduct an internal audit annually covering the entire Volume 1 of the TNI documents is a tremendous effort and is mostly a waste of time and limited resources. Even the smallest laboratory is covered by TNI Modules 1, 2, and parts of 4 or 5, which is not less than 90 pages in length. This is tremendous amount of work for any laboratory but for a small laboratory, to do annually and then have an ELAP assessor show up every other year to do yet another assessment. It is not only a lot of work, it is largely pointless. If a small laboratory is not complying with a provision of the TNI document and does not know it, it is highly unlikely that an internal audit will find it. It is hard to see a laboratory with only one person working in it full time would achieve any sort of improvement by auditing him or herself every year.

#### 4. Limit of Quantitation

The term and concept of the "Limit of Quantitation" (LOQ) is used numerous times in Modules 1, 2, and 4. In Module 2, Section 3.0 the LOQ is defined as: "The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence." This definition is extremely vague and ambiguous. What specified degree does it mean? What does confidence mean in this context, no definition is provided.

In Module 4 Section 1.5.2.2 there is more text broken down here by each sentence.

- a) If a mandated test method or applicable regulation includes protocols for determining quantitation limits, they shall be followed.
- b) The procedure used for determining the LOQ shall be documented by the laboratory.
- c) The laboratory shall select an LOQ for each analyte, consistent with the needs of their clients, and at least three (3) times the MDL.

- d) An LOQ is required for each quality system matrix of interest, technology, method, and analyte...
- e) Each selected LOQ shall be verified through analysis of initial verification samples.
- f) An initial verification sample consists of a spiked matrix blank at or below the selected LOQ.
- g) All sample preservation, processing and analysis steps performed for routine sample analysis shall be included in the LOQ verification testing.
- h) The LOQ must be at or above the lowest corresponding calibration standard concentration with the exception of methods using a single point calibration.
- i) The laboratory shall establish acceptance criteria for accuracy for the LOQ verification spikes.

The LOQ under TNI can come from unspecified methods or unspecified regulations, if they exist, but if they do not exist, the laboratory has to have its own procedure for determining an LOQ with its own accuracy and precision specifications provided that they are consistent with "client needs".

This is extremely confusing for the laboratories but also for on-site assessors. For example if a laboratory had a large number of customers, each requiring different LOQs depending on determine methods, regulations, client needs, and "quality system matrix", then there could hundreds of different LOQs. How is an on-site assessor to check that all of these different LOQs have been properly determined, verified, and routinely confirmed? For laboratories working only in California, as is the case for the vast majority of ELAP's accredited laboratories, the problem with this section is that California regulatory agencies that use data generated by ELAP accredited laboratories do not use the term "LOQ". The Division of Drinking Water uses the terms Method Detection Limit (MDL), the Minimum Reporting Limit, the Practical Quantitation Limit but not LOQ. Data users do not want or need to know what the LOQ might be. So these laboratories would spend considerable effort to establish an LOQ procedure, determine actual LOQs, verify LOQs, and participate in LOQ on-site assessments but never actually use them.

# 5. Requests, Tenders and Contracts

Volume 1, Module 2 Section 4.4 requires that "[t]he laboratory shall establish and maintain procedures for the review of requests, tenders and contracts". There are record keeping requirements for noting "Any differences between the request or tender and the contract shall be resolved before any work commences. Each contract shall be acceptable both to the laboratory and the customer." A laboratory that does not keep these record can be denied accreditation or have their accreditation revoked. There are also requirements that "Records of reviews, including any significant changes, shall be maintained. Records shall a/so be maintained of pertinent discussions with a customer relating to the customer's requirements or theresults of the work during the period of execution of the contract."

This is obviously a great deal of work for the laboratory to maintain all of these records. How this even applies to in-house and utility laboratories which only have one customer is entirely unclear. It is also a great deal of work for ELAP's staff to have to go through all of these records. However, far more importantly, what do these requirements have to with the competency of the laboratory. These sorts of things are completely immaterial to determining whether a laboratory is capable of producing accurate and precise results. This would consumer huge amounts of labor time from laboratories and ELAP personnel while producing no increased protection for public health or protection of the environment.

#### 6. Conclusions

These examples are but a small fraction of the hundreds of requirements that can be found in the 2016 TNI documents. They are cumbersome, vague, ambiguous, complex, time consuming and serve no purpose. Individually, separate from the whole body, each is largely harmless, unnecessary but generating only a limited amount disruption. However when hundreds of such requirements are poured down upon hundreds of laboratories with limited staff and resources, TNI is fatal to many laboratories, especially smaller laboratories in more remote areas.

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