

# GeoTracker GAMA

California Water Quality Monitoring Council  
“Drinking Water” Portal Integration

# GeoTracker GAMA

- GAMA created by State Water Board in 2000
- Expanded by AB 599 – Groundwater Quality Monitoring Act of 2001
- Main goals of GAMA are to:
  - Improve statewide groundwater monitoring
  - Increase the availability of groundwater quality information to the public
  - Create a database compatible with GeoTracker

# WQMC Integration

Portal to answer these questions:

- 1) Is the water I drink safe?
- 2) Where does my water come from?
- 3) How clean are the water supply sources?

# AB 599 Process - Background

- PAC/ITF convened several times since 2002; expressed concern of public misinterpretation
- GAMA Webpage attempt to answer, not confuse groundwater users questions
- 90% of public consumes “public” water supply – CDPH, CCRs
- “Raw” groundwater info/data in GT GAMA useful to 3.8M domestic well users
- GT GAMA useful to understand that portion of public supply requires treatment – Costs to public



State Water Resources Control Board - Windows Internet Explorer

http://www.waterboards.ca.gov/gama/

File Edit View Favorites Tools Help

State Water Resources Control Board

CA.GOV CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY  
STATE WATER RESOURCES CONTROL BOARD

Skip to: [Content](#) | [Footer](#) | [Accessibility](#)

Search  GO  
 California  This Site

Home About Us Public Notices Board Info Board Decisions **Water Issues** Publications/Forms Press Room

Programs | Available Documents | Hot Topics |

GOVERNOR SCHWARZENEGGER  
Visit his Website

- Cal/EPA
- State and Regional Water Boards' Map
- Laws/Regulations
- Plans/Policies
- Programs
- Decisions Pending and Opportunities for Public Participation

Website Feedback

**GAMA RESOURCES**

- GAMA Home
- Priority Basin Project

Home → Gama

## GAMA – Groundwater Ambient Monitoring & Assessment Program

### What is GAMA?

The Groundwater Ambient Monitoring and Assessment (GAMA) Program is California's comprehensive groundwater quality monitoring program.

### What's in Your Groundwater?

GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. GAMA compiles these test results with existing groundwater quality data from several agencies into a publicly-accessible internet database, [GeoTracker GAMA](#).

### Why GAMA is Needed - Even if You Do Not Have a Water Well

90 percent of Californians get their drinking water from a public or municipal source - these supplies are typically treated to ensure that the water is safe to drink.

However, the drinking water for about 3.8 million people comes from private domestic wells. The data gathered by GAMA highlights regional and local groundwater quality concerns. These data may be used to evaluate whether there are specific chemicals of concern in your well.

- [GeoTracker GAMA](#)
- [Where Does My Water Come From?](#)
- [Concerned About Your Well's Water Quality?](#)
- [More Information on Water Quality in your Area](#)
- [Map of Hydrogeologically Vulnerable Areas](#)
- [Table of Hydrogeologically Vulnerable Areas](#)
- Priority Basin Project Meeting Announcements**  
[Rescheduled due to weather](#)

Internet 100%

start 7 Novell GroupWise ... State Water Resourc... Microsoft PowerPoint ... 10:23 AM



SCHWARZENEGGER



Visit his Website

- Cal/EPA
- State and Regional Water Boards' Map
- Laws/Regulations
- Plans/Policies
- Programs
- Decisions Pending and Opportunities for Public Participation



GAMA RESOURCES

- GAMA Home
- Priority Basin Project
- Domestic Well Project
- Special Studies Project
- California Aquifer Susceptibility Project
- GAMA Groundwater Reports
- Chemicals of Concern (COC) Information Sheets
- AB 599

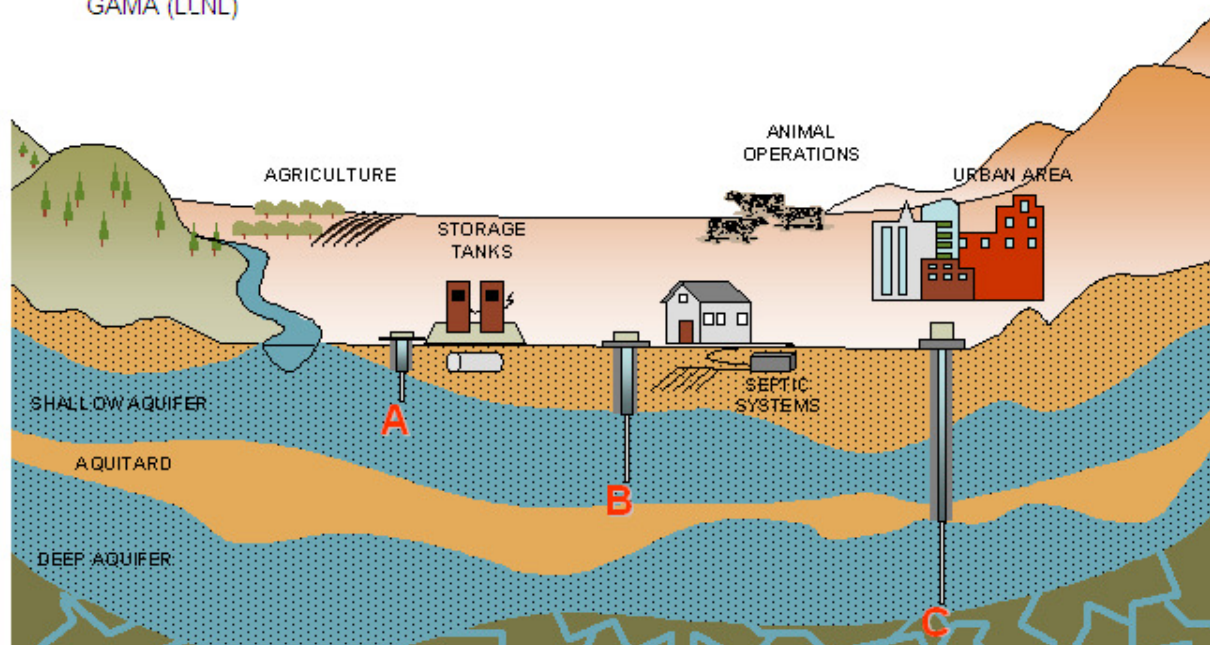
# GAMA – Groundwater Ambient Monitoring & Assessment Program

## GeoTracker GAMA Groundwater Data Sources

GeoTracker GAMA system provides user-friendly internet access to groundwater quality data in California. Sources of GeoTracker GAMA data are depicted in the figure below. Move your mouse cursor over a well (A, B, C) for more information on these data sources.

**C - DEEP WELLS:** These wells tap deep aquifers and are typically hundreds of feet deep. These wells also pump very large volumes of water for public supply and irrigation.

GeoTracker GAMA data ([sources](#)): Water Supply Wells (CDPH), DPR, DWR, GAMA (USGS), GAMA (LLNL)





State Water Resources Control Board - Windows Internet Explorer


http://www.waterboards.ca.gov/gama/geotracker\_gama.shtml

File Edit View Favorites Tools Help


State Water Resources Control Board

Reports

- Chemicals of Concern (COC) Information Sheets
- AB 599
- Sources of Groundwater Information
- Related Links
- Contact Us



Water Boards



**GeoTracker GAMA**

- Provides groundwater quality data
- Integrates, standardizes, and provides tools to analyze several datasets, including data from:
  - State and Regional Water Boards (SWRCB/RWQCB)
  - California Department of Public Health (CDPH)
  - Department of Pesticide Regulation (DPR)
  - Department of Water Resources (DWR)
  - United States Geological Survey (USGS)
  - Lawrence Livermore National Laboratory (LLNL)
- Provides data for over 100,000 sampling locations

Monitoring of public drinking water quality is the responsibility of the [California Department of Public Health](#). The State of California does not regulate water quality in private domestic wells.

More sources of groundwater information are available [here](#)

(Updated 9/15/09)

Back to Top | Help | Contact Us | Site Map

[Conditions of Use](#) | [Privacy Policy](#)  
Copyright © 2009, State of California

Internet 100%

start 7 Novell GroupWise ... State Water Resourc... Microsoft PowerPoint ... 10:17 AM

GeoTracker - Windows Internet Explorer

http://geotrackerbeta.ecointeractive.com/gama/

File Edit View Favorites Tools Help

GeoTracker

STATE WATER RESOURCES CONTROL BOARD **BETA**  
**GEOTRACKER GAMA**  
GROUNDWATER AMBIENT MONITORING AND ASSESSMENT

Skip to: [Content](#) | [Footer](#)

[GeoTracker GAMA Home](#) [GAMA Home](#) [SWRCB Home](#) [GAMA Tutorial](#)

## Welcome to GeoTracker GAMA

GeoTracker GAMA (Groundwater Ambient Monitoring and Assessment) is an online database using Google Maps that:

- Makes searchable a number of groundwater quality databases
- Provides links to other groundwater quality data
- Provides links to other information about groundwater basics and groundwater protection
- Brings together and standardizes datasets from California state agencies including: Public Health, Water Resources, and Pesticide Regulation as well as from the US Geological Survey, Lawrence Livermore National Laboratory, and the Water Boards.

### FIND WATER QUALITY INFORMATION

e.g., "10 market st, san francisco, ca" - [INFO](#)

Copyright © 2009 State of California

Done Internet 100%

start 7 Novell GroupWise ... GeoTracker - Window... Microsoft PowerPoint ... 10:19 AM



# GEOTRACKER GAMA

**LOCAL INFORMATION**

**CITY**  
UNINCORPORATED

**COUNTY**  
MONO - [VIEW WATER REPORTS](#)

**GROUNDWATER BASIN**

**ZOOM IN TO SEE BORING LOGS**

---

**LEGEND**

- SQUARE ICONS REPRESENT ONE OR MORE CDPH WELLS
- CIRCLE ICONS REPRESENT OTHER WATER SUPPLIES
- ▲ TRIANGLE ICONS REPRESENT ENVIRONMENTAL MONITORING WELLS
- ICONS WITH A CIRCLE AROUND THEM SIGNIFY A CLUSTER OF WELLS
- ⊖ ICONS WITH A DOTTED LINE AROUND THEM SIGNIFY AN APPROX LOCATION



SHOW ADVANCED QUERY OPTIONS 
  WATER DEPTH QUERY 
 MAP SIZE: 640x480 
 91885 MATCHING WELLS (39.31% ABOVE DRINKING WATER STANDARD)

**DATASETS: - [ADDITIONAL INFORMATION](#)**

**ENVIRONMENTAL MONITORING:**  
 Environmental Monitoring Wells (SWRCB/RWQCB)

**WATER SUPPLY WELLS:**  
 GAMA Domestic Wells 
  Water Supply Wells (CDPH) 
  GAMA (USGS) 
  GAMA (LLNL) 
  DPR 
  DWR

**GIS LAYER - SELECTING A GIS LAYER WILL LIMIT YOUR QUERY TO RESULTS IN THAT GIS LAYER**

Select a GIS Layer

Wells With Results 
 of Methyl-tert-butyl ether (MTBE) - (SMCL = 5 UGL) 
 IN THE PAST ALL YEARS 
 
[EXPORT](#)

LOCATIONS FOUND	MAX VALUE		
▲ 779 WELL CLUSTER - EDF	160000000	<a href="#">[ZOOM IN ON LOCATION]</a>	<a href="#">[VIEW WELLS IN CLUSTER]</a>
▲ 22761 WELL CLUSTER - EDF	577000000	<a href="#">[ZOOM IN ON LOCATION]</a>	<a href="#">[VIEW WELLS IN CLUSTER]</a>
▲ 2377 WELL CLUSTER - EDF	346000000	<a href="#">[ZOOM IN ON LOCATION]</a>	<a href="#">[VIEW WELLS IN CLUSTER]</a>

# Challenges Met

- User-friendly system needing little or no training
- System performance on a very large scale
- Tools to efficiently organize and display very large data sets
- Reports to help investigators and scientists understand the data being presented

# New Challenges

- Integration into WQMC Portal to answer questions:
  - 1) Is the water I drink safe?
  - 2) Where does my water come from?
  - 3) How clean are the water supply sources?
- **Conceptual Model**





# Q1: Is the water I drink safe?

## Answer 1:

- ~95% of the public is served by a public drinking water supply, regulated by CDPH. GT GAMA directs the public to their own water system and Consumer Confidence Report.
- The remaining 5% of public relies on private domestic drinking water wells which are typically not tested. GeoTracker GAMA database provides both treated and untreated groundwater quality source data.

## Q2: Where does my Water come from?

Answer 2:

- Surface water accounts for >60% of the public supply volume; <40% from groundwater.
- For the remaining private domestic well users 100% of their water supply comes from their private well.

## Q3: How Clean are the Water Supply Sources?

### Answer 3:

- For the <40% of the public water supply volume that comes from groundwater, GT GAMA can display “untreated” water well data.
- For private domestic well users must test their water well to determine how clean it is.



# Integrate into WQMC

- Use existing GT GAMA system and info on GAMA website
- Clarify that the data in GT GAMA are primarily untreated groundwater source data
- Collaborate with CDPH to complete the WQMC 'Safe to Drink' Portal

# Portal into WQMC for GT GAMA

- Focus on how best to display groundwater quality data
- Uses resources already in existing GeoTracker GAMA system



GOVERNOR  
**SCHWARZENEGGER**



[Visit his Website](#)

- State & Regional Water Boards

**SAFE TO EAT FISH LINKS**

- Pollution Sources & Health Risks
- Laws, Regulations, Standards & Guidelines
- Assessment Thresholds
- Regulatory Activities
- Enforcement Actions
- Research
- Monitoring Programs, Data Sources & Reports
- Statewide Perspective
- National Perspective

Home → C: → Users → Devin → Documents → Waterdata



**Is My Water Safe To Drink?**



**Contaminant Data**

This map allows you to view water contaminant data from GeoTracker GAMA that:

- Makes searchable a number of groundwater quality databases.
- Provides links to other groundwater quality data.
- Provides links to other information about groundwater basics and groundwater protection.
- Brings together and standardizes datasets from California state agencies including: Public Health, Water Resources, and Pesticide Regulation as well as from the US Geological Survey, Lawrence Livermore National Laboratory, and the Water Boards.

**More Information**

→ [GeoTracker GAMA](#)

This map shows data from:



[CDPH](#) | [DWR](#) | [USGS](#) | [DPR](#) | [SWRCB](#) | [LLNL](#)







# GEOTRACKER GAMA

**LOCAL INFORMATION**

**CITY**  
UNINCORPORATED

**COUNTY**  
MONO - [VIEW WATER REPORTS](#)

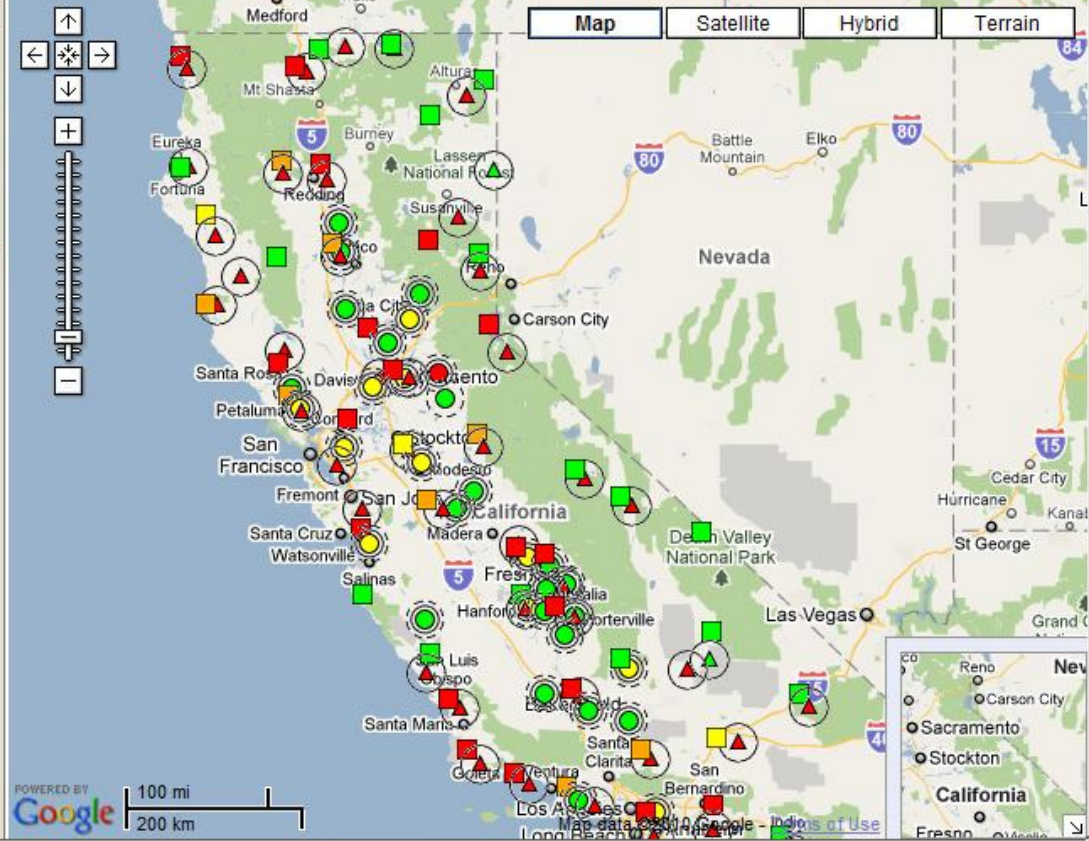
**GROUNDWATER BASIN**

**ZOOM IN TO SEE BORING LOGS**

---

**LEGEND**

- SQUARE ICONS REPRESENT ONE OR MORE CDPH WELLS
- CIRCLE ICONS REPRESENT OTHER WATER SUPPLIES
- ▲ TRIANGLE ICONS REPRESENT ENVIRONMENTAL MONITORING WELLS
- ICONS WITH A CIRCLE AROUND THEM SIGNIFY A CLUSTER OF WELLS
- ⊙ ICONS WITH A DOTTED LINE AROUND THEM SIGNIFY AN APPROX LOCATION



SHOW ADVANCED QUERY OPTIONS 
  WATER DEPTH QUERY 
 MAP SIZE: 640x480 
 91885 MATCHING WELLS (39.31% ABOVE DRINKING WATER STANDARD)

**DATASETS: - [ADDITIONAL INFORMATION](#)**

**ENVIRONMENTAL MONITORING:**  
 Environmental Monitoring Wells (SWRCB/RWQCB)

**WATER SUPPLY WELLS:**  
 GAMA Domestic Wells 
  Water Supply Wells (CDPH) 
  GAMA (USGS) 
  GAMA (LLNL) 
  DPR 
  DWR

**GIS LAYER - SELECTING A GIS LAYER WILL LIMIT YOUR QUERY TO RESULTS IN THAT GIS LAYER**

Select a GIS Layer

Wells With Results 
 
 of Methyl-tert-butyl ether (MTBE) - (SMCL = 5 UGL) 
 IN THE PAST ALL YEARS 
 
[EXPORT](#)

LOCATIONS FOUND	MAX VALUE		
▲ 779 WELL CLUSTER - EDF	160000000	<a href="#">[ZOOM IN ON LOCATION]</a>	<a href="#">[VIEW WELLS IN CLUSTER]</a>
▲ 22761 WELL CLUSTER - EDF	577000000	<a href="#">[ZOOM IN ON LOCATION]</a>	<a href="#">[VIEW WELLS IN CLUSTER]</a>
▲ 2377 WELL CLUSTER - EDF	346000000	<a href="#">[ZOOM IN ON LOCATION]</a>	<a href="#">[VIEW WELLS IN CLUSTER]</a>

# CCR Portal on GAMA site

State Water Resources Control Board - Windows Internet Explorer  
http://www.waterboards.ca.gov/gama/

CA.GOV CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY  
STATE WATER RESOURCES CONTROL BOARD

Home | About Us | Public Notices | Board Info | Board Decisions | Water Issues | Publications/Forms | Press Room

Programs | Available Documents | Hot Topics |

GOVERNOR SCHWARZENEGGER  
Visit his Website

- Cal/EPA
- State and Regional Water Boards' Map
- Laws/Regulations
- Plans/Policies
- Programs
- Decisions Pending and Opportunities for Public Participation

Website Feedback

GAMA RESOURCES

- GAMA Home
- Priority Basin Project
- Domestic Well Project

Home → Gama

## GAMA – Groundwater Ambient Monitoring & Assessment Program

**What is GAMA?**

The Groundwater Ambient Monitoring and Assessment (GAMA) Program is California's comprehensive groundwater quality monitoring program.

**What's in Your Groundwater?**

GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. GAMA compiles these test results with existing groundwater quality data from several agencies into a publicly-accessible internet database, [GeoTracker GAMA](#).

**Why GAMA is Needed - Even if You Do Not Have a Water Well**

90 percent of Californians get their drinking water from a public or municipal source - these supplies are typically treated to ensure that the water is safe to drink.

However, the drinking water for about 3.8 million people comes from private domestic wells. The data gathered by GAMA highlights regional and local groundwater quality concerns. These data may be used to evaluate whether there are specific chemicals of concern in your well.

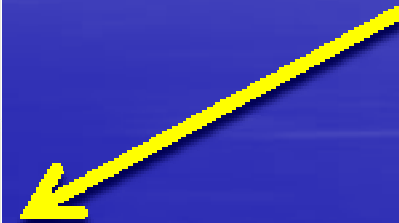
Those served by public or municipal supplies should be concerned about groundwater quality

[GeoTracker GAMA](#)

[Where Does My Water Come From?](#)

[Concerned About Your Well's Water Quality?](#)

[More Information on Water Quality in your Area](#)



Annual drinking water quality reports in California | Consumer Confidence Report (CCR) | US EPA - Windows Internet Explorer  
http://yosemite.epa.gov/ogwdw/ccr.nsf/California?OpenView

U.S. ENVIRONMENTAL PROTECTION AGENCY

## Consumer Confidence Report (CCR)

Search:  All EPA  This Area

You are here: [EPA Home](#) » [Water](#) » Annual drinking water quality reports in California

### Annual drinking water quality reports in California

These links were provided by water suppliers who want you to have easy access to information about your drinking water. EPA is not responsible for the content nor the accessibility of the web sites listed below. [EXIT Disclaimer](#) Water suppliers are listed in alphabetical order by city, but you can change the order by clicking the "▼" at the top of any column.

◀ PREVIOUS    NEXT ▶

City ▼	County ▼	Water System Name ▼
Aliso Viejo	Orange	<a href="#">Moulton Niguel Water District</a>
Anaheim	Orange	<a href="#">Anaheim</a>
Antioch	Contra Costa	<a href="#">City of Antioch</a>
Apple Valley	San Bernardino	<a href="#">Apple Valley Ranchos Water Co.</a>
Apple Valley	San Bernardino	<a href="#">Southern California Water Co.</a>

# Thanks

John Borkovich

[jborkovich@waterboards.ca.gov](mailto:jborkovich@waterboards.ca.gov)