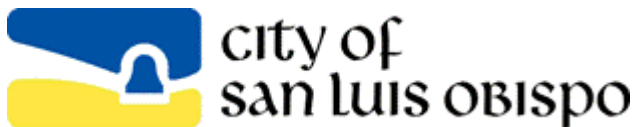


# 2011 Watershed Sanitary Survey Update Salinas Reservoir



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# Section 1 Summary

## 1.1 Report Organization

This report contains five sections with information as detailed below:

### **Section 1 - Summary**

Section 1 shows how the report is organized and contains the major conclusions and recommendations determined as a result of the preparation of this 2011 Watershed Sanitary Survey Update.

### **Section 2 - Background and 2005 Water Quality Summary**

Section 2 provides a brief description and background of the Salinas Reservoir watershed. Furthermore, the section states the project purpose, summarizes the water quality information provided on tables in the 2005 Update and describes the approach for completion of this 2011 Update.

### **Section 3 – Past Recommendations and Current Status**

Section 3 lists the recommendations contained in the 2005 Update and provides the implementation status of each recommendation.

### **Section 4 - Comments in Relation to the 2005 Watershed Sanitary Survey Update**

Section 4 contains the comments and conclusions from the 2005 Update that are still applicable and updated watershed changes.

### **Section 5 - Updated Water Quality Information**

Section 5 provides the updated water quality data for the raw water from Salinas Reservoir as sampled by the City of San Luis Obispo for its filtration plant. A narrative of each water quality table is provided, and the areas where improvement changes should be made to the two current water sampling programs are addressed.

## 1.2 Major Conclusions

1. Overall, the Salinas Reservoir watershed is well managed and remains favorable from a water quality protection perspective.
2. Cattle and wild animals are the major potential contamination sources that may cause the entry of parasitic cysts (*Giardia Lamblia*/*Cryptosporidium*) into the water.
3. Human recreational users in the Santa Margarita Lake Regional Park and Natural Area are also potential sources for pathogens as a result of private sewage disposal practices and the proximity of recreational users to surface waters (Salinas Reservoir does not permit body contact sports activities at the lake).
4. Potential contamination resulting from wastewater treatment plants, urban/industrial runoff, concentrated animal facilities, solid/hazardous waste disposal facilities, and seawater intrusion is insignificant and highly unlikely due to the lack of such contamination sources within the confines of the Salinas Reservoir watershed.
5. The City of San Luis Obispo is not a land owner or lessee in the Salinas reservoir watershed and has no control over land use activities in the watershed, including cattle grazing.
6. The City of San Luis Obispo water treatment facility provides a high degree of treatment and consistently and reliably meets the applicable potable water standards for treated surface water.
7. The recommendations made in the 2005 report and their implementation status is discussed in Section 3 of this Update. The recommendations that have not yet been implemented and any additional improvements that may still be needed are discussed in the next subsection.
8. Efforts should continue to exclude direct access of grazing animals to Salinas Reservoir and areas at or near the tributaries. Currently, grazing is not permitted within the boundaries of the Santa Margarita Lake Regional Park and Natural Area. On May 31, 1997 the County of San Luis Obispo terminated the last grazing access lease to the public property adjacent to the Santa Margarita Lake Regional Park and Natural Area.

## 1.3 Recommendations

### **Recommendations Still Applicable From the 2005 Update**

1. The City and the County of San Luis Obispo should continue with their current level of effort to protect the watershed and the reservoir from pollution and/or contamination.
2. The current sampling program performed by both City and County staff has been demonstrated to be adequate, and should continue at the present levels and frequencies.

## **New Recommendations as a Result of this Update**

1. Monitoring for invasive species should be evaluated on an ongoing basis. The current invasive mussel monitoring program should continue.

# Section 2

## Background and 2005 Water Quality Summary

### 2.1 Project Background and Purpose

The City of San Luis Obispo (City) contracted with Metcalf & Eddy to prepare the initial Watershed Sanitary Survey of the Salinas Reservoir Watershed in 1995. In 2000, the City retained Boyle Engineering Corporation to prepare the 5-year update to the Sanitary Survey in order to further their understanding of the potential for surface water contamination within the watershed, as well as to comply with the California Department of Public Health (CDPH) requirements. In 2005, City staff prepared the next 5-year update. This current update to the Salinas Reservoir Watershed Sanitary Survey has also been prepared by City staff.

The Salinas Reservoir watershed is comprised of approximately 71,680 acres located between the east slope of the Santa Lucia range and the west slope of the La Panza Range in central San Luis Obispo County, California. The focal point of the watershed is Salinas Reservoir (also known as Santa Margarita Lake), which is a major source of drinking water for the City of San Luis Obispo. The Salinas Reservoir River watershed is also a major source of drinking water for the other water purveyors along the Salinas River. These downstream water utilities have wells that are recharged by the Salinas River.

The watershed, as noted in Metcalf and Eddy's 1996 report, is sparsely populated and minimally developed with nearly half of the watershed located within the boundaries of the Los Padres National Forest. Approximately 65% of the land within the watershed is publicly owned, with the largest of the public land lying within the boundaries of the Los Padres National Forest and the Santa Margarita Lake Regional Park and Natural Area. The remaining 35% of the land comprising the watershed is privately owned.

The City of San Luis Obispo water system includes the Salinas Dam and reservoir, intake structure and conveyance pipelines, water treatment plant, and treated water distribution pipelines. When originally constructed in 1941, the Salinas reservoir had an estimated storage capacity of 26,000 acre-feet.

The raw water, which is treated by the City's water treatment facility, is conveyed from the Salinas Dam to the treatment plant via the Santa Margarita Booster Pumping Station and the Cuesta Tunnel. The San Luis Obispo Water Treatment Plant treats water from Salinas Reservoir, Whale Rock Reservoir and Nacimiento Lake. The Water Treatment Plant has been upgraded in 1994 (ozone pre-disinfection, sodium hypochlorite post-disinfection, rebuilt anthracite filters) and in 2008 (ballasted flocculation).

## 2.2 2005 Watershed Sanitary Survey Update Summary

The 2005 Update was completed by City staff in November, 2005. Little has changed within the Salinas Reservoir watershed since the completion of the 2005 Update.

The 2005 Update included water quality information, as follows:

|           |  |
|-----------|--|
| Table 5-1 | Raw Water General Quality Characteristics (2001-2004)                |
| Table 5-2 | Raw Water Quality – Coliform Monitoring (10/2000-5/2005)             |
| Table 5-3 | Raw Water Quality – General Mineral Characteristics (10/2001-9/2004) |
| Table 5-4 | Raw Water Quality – Inorganic Chemicals (10/2001-9/2004)             |
| Table 5-5 | Raw Water Quality – Organic Chemicals (8/1996-11/2004)               |

See Section 5 in this report for updated information.

Section 3 of the 2005 Update contained several recommendations. These recommendations and the status of each are addressed in Section 3 of this report.

## 2.3 Project Approach

The approach to this update is to build upon the information contained in the initial 1996 Watershed Sanitary Survey and the subsequent 2001 and 2005 Updates. This current 2011 Update will describe all the significant changes that have occurred and will update important water quality information. This update will provide the current status of each of the recommendations made in the 2005 Update and will provide additional conclusions and recommendations where appropriate. The additional recommendations are as outlined in Sections 1 and 4 of this update.

## 2.4 Watershed Inspection

Along with the analysis of updated water quality information, the watershed was physically inspected in order to document major activities that could have an effect on water quality. In preparation for this inspection, the various responsible regulatory agencies were contacted.

Agricultural pesticide/herbicide use and permit information was reviewed from the County of San Luis Obispo, Department of Agriculture/Measurement Standards database. Hazardous material incident and information was reviewed from the County of San Luis Obispo, Department of Public Health Services/Environmental Health and Regional Water Quality Control Board databases. Building permit information was reviewed from the County of San Luis Obispo, Department of Planning and Building database. Information for activities and management of the immediately surrounding public lands was obtained from County of San Luis Obispo Park Ranger staff. Additional water quality information was reviewed from the County of San Luis Obispo, Public Works Water Quality Laboratory. Review of all permit and use information applicable to this watershed indicated that there were no significant projects or events that should affect water quality. This was confirmed by driving the major roadways in the watershed.



# Section 3

## 2005 Recommendations and Current Implementation Status

The 2005 Watershed Sanitary Survey Update contained specific recommendations for additional sampling previously identified in the 2001 Watershed Sanitary Survey. Those recommendations and status continue with this current update and are as follows:

### Recommendation No. 1

- The City should consider implementing the following raw water sampling program at the Salinas Reservoir outlet works and at the treatment plant influent.

| Constituent                        | Salinas Reservoir Effluent | Treatment Plant Influent |
|------------------------------------|----------------------------|--------------------------|
| Turbidity                          | Twice monthly              | Continuously             |
| pH                                 | Twice monthly              | Continuously             |
| Temperature                        | Twice monthly              | Daily                    |
| Apparent Color                     | Twice monthly              | Daily                    |
| Odor                               | Twice monthly              | Weekly                   |
| T. Alkalinity (CaCO <sub>3</sub> ) | Twice monthly              | Weekly                   |
| Hardness                           | Twice monthly              | Yearly                   |

### Status

The County continues to conduct these physical analyses on the raw water twice per month minimum and provides this data to the City. The City Water Treatment Plant (WTP) continues to monitor the raw water turbidity and pH every 4 hours minimum or more frequently if needed. Temperature, apparent color, odor, total alkalinity and hardness are sampled and tested daily, as required by the State or more frequently as needed.

**Recommendation No. 2**

- The City should consider implementing the following raw water sampling program at the Salinas Reservoir outlet works and at the treatment plant influent:

| <b>Constituent</b>                         | <b>Salinas Reservoir Effluent</b> | <b>Treatment Plant Influent</b> |
|--|-----------------------------------|---------------------------------|
| Total Coliform and Fecal Coliform Bacteria | Monthly                           | Weekly                          |

**Status**

The County continues to conduct these weekly bacterial analyses on the raw reservoir water and provides this data to the City. The City also performs its own monthly bacterial analyses on each of the raw surface water sources delivered to the WTP. It is assumed that the raw water has some coliform and fecal coliform bacteria. The treatment process is designed and operated to disinfect and remove coliform bacteria to required levels. For these reasons, the current level of sampling and testing continues to be considered adequate.

**Recommendation No. 3**

- The City should consider implementing the following raw water sampling program at the Salinas Reservoir outlet works and at the treatment plant influent.

| <b>General Mineral Constituents</b> | <b>Salinas Reservoir Effluent</b> | <b>Treatment Plant Influent</b> |
|-------------------------------------|-----------------------------------|---------------------------------|
| Constituents listed on Table 5-3.   | Yearly                            | Yearly                          |

**Status**

The constituents listed in Table 5-3 are tested by the County at the Salinas Reservoir outlet on a monthly basis. The City samples and tests the Water Treatment Plant influent for these same constituents annually.

**Recommendation No. 4**

- The City should consider implementing the following raw water sampling program at the Salinas Reservoir outlet works and at the treatment plant influent:

| <b>Constituent</b>                | <b>Salinas Reservoir Effluent</b> | <b>Treatment Plant Influent</b> |
|-----------------------------------|-----------------------------------|---------------------------------|
| Manganese                         | Monthly                           | Monthly                         |
| Constituents listed on Table 5-4. | Yearly                            | Yearly                          |

**Status**

The County continues to sample the Salinas Reservoir effluent and tests for manganese at least once per month. The remaining constituents on Table 5-4 are tested annually. The City performs similar tests on samples from the Water Treatment Plant influent on an annual basis. The City disagrees with the recommendation for monthly testing of the treatment plant influent for manganese since the test is redundant and the Water Treatment Plant’s ozone oxidizes and ballasted flocculation and filtration processes remove any manganese. There have not been any issues with manganese in the treated water.

**Recommendation No. 5**

- Past results have shown the raw water to not indicate much radiological parameter presence. Therefore, radiological sampling of the raw water should be discontinued. It should be continued in the treated water sampling.

**Status**

The City performs regular radiological testing as required by CDPH regulations.

**Recommendation No. 6**

- The current yearly sampling program should be continued with emphasis on the types of herbicides and pesticides known to be used in the watershed tributary to the reservoir. This has not been done since 1996.

**Status**

The City samples and tests the Water Treatment Plant influent for herbicides and pesticides as required by CDPH.

## Recommendation No. 7

- The City should consider performing additional raw water sampling at either the reservoir or the filtration plant influent for the following additional constituents. This should be done because of specific treatment considerations and/or treatment concerns.
- If the raw water is found to contain Giardia/Cryptosporidium cysts, the treated water from the filter plant should then also be sampled quarterly (for at least the next 2 years) for viable Giardia/Cryptosporidium cyst levels to demonstrate that the existing treatment facilities remove/deactivate them.

| <b>Parameter</b>              | <b>Recommended Sampling Frequency</b> | <b>Concerns</b>                   |
|-------------------------------|---------------------------------------|-----------------------------------|
| Bromide ( $\mu\text{g/L}$ )   | Yearly                                | Bromate formation                 |
| Total Organic Carbon (mg/L)   | Monthly                               | Disinfection by-product formation |
| Total Algae Counts            | Monthly                               | Taste and odor control            |
| Giardia/Cryptosporidium Cysts | Quarterly <sup>1</sup>                | Public health/safe water          |

<sup>1</sup>For at least the next 2 years beginning with the fall quarter of October-December 2001.

## Status

The City is regulated for bromate, rather than bromide. The City's treated water is tested for bromate on a monthly basis and has never exceeded the regulatory limit of 0.010 mg/L. Total organic carbon is analyzed monthly in accordance with CDPH requirements. The County continues to perform algae counts twice per month and provides this information to the City. Giardia and cryptosporidium cysts are assumed to be present in the raw water although there were no Cryptosporidium detections during the City's LT2SWTR sampling in 2008-2010.

# Section 4

## Comments in Relation to the 2005 Watershed Sanitary Survey Update

### 4.1 Comments Still Applicable From the 2005 Report

- No municipal or industrial wastewater treatment plants are located within the Salinas Reservoir watershed.
- Wastewater treatment and disposal within the watershed is via septic tank systems. No significant problems with failing septic tank systems have been identified. Care must continue to be taken to monitor septic tank leach field efficiency if development occurs adjacent to Santa Margarita Lake.
- There are no wastewater collection systems within the watershed.
- There continues to be no use of reclaimed water within the watershed.
- The only area within the Salinas Reservoir watershed designated as “urban lands” by San Luis Obispo County is within the community of Pozo. However, the population of Pozo remains relatively small and is once again expected to have an insignificant impact upon the watershed and reservoir water quality.
- The principal agricultural crops grown within the watershed are grain and hay commodities.
- Cattle grazing continues on much of the public and private land throughout the Salinas Reservoir watershed and in many instances grazing animals have direct access to the influent streams tributary to the reservoir. Cattle grazing however is not permitted within the Santa Margarita Lake Park and Recreational Area and the County of San Luis Obispo has terminated the grazing permits for the two grazing areas adjacent to the reservoir.
- As a result of this direct access to the tributary streams within the private and public property (grazing is still permitted within the USFS land within the watershed), the grazing livestock continue to represent a potential-source for Giardia Lamblia and Cryptosporidium cysts.
- No large-scale concentrated animal facilities are located within the watershed.

- Pesticide and herbicide use continues to be limited to the agricultural croplands within the watershed. However, due to the minimal quantity of land utilized as cropland, the contamination potential remains insignificant.
- In general, wildlife populations within the watershed are considered to be low to moderate and continue to represent a potential source of pathogens in the watershed.
- There are no active mines within the watershed. Mining activity has ceased in the region since the early 1970's.
- There are no known solid or hazardous waste handling and/or disposal facilities located within the watershed.
- No large-scale commercial logging operations are conducted within the watershed.
- However permits can be obtained for minor fuel woodcutting. To date, no known impacts to surface water quality from the minor logging activities within the watershed have been noted.
- Three public recreation areas are located within the Salinas Reservoir watershed: Santa Margarita Lake/Salinas Reservoir Regional Park, Santa Margarita Lake Natural Area, and the Los Padres National Forest.
- Body contact recreation is not permitted at Salinas Reservoir and the portion of the reservoir and shoreline approximately 1/2 mile upstream from the Salinas Dam intake structure is restricted from use by the public.
- The Santa Margarita Lake Regional Park and Natural Area continues to maintain permanent toilets with septic tanks and leach fields, pit toilets, and various portable chemical toilets. These toilets constitute the most significant source of potential sewage contamination associated with the recreational activities within the watershed.
- Equestrian access continues to be allowed on all of the Santa Margarita Lake Regional Park trails. As a result, horse manure continues to represent a potential source of bacteriological contamination.
- Minor dumping of solid waste and littering continues to occur within the watershed. However, no incident of water quality degradation due to illegal dumping or littering has been noted.
- No known accidental or intentional traffic-related waste spills impacting surface water within the watershed have occurred since 2001.
- There are no known surface water quality issues associated with the natural discharge from uncapped artesian wells located within the watershed.
- The watershed is located in an inland area not subject to seawater intrusion.

- The potential for the contribution of large quantities of suspended solids into Salinas Reservoir due to landslides, earthquakes, and floods remains quite low.
- Portions of the watershed continue to be listed as high and very high hazard with regard to wildfire potential by the California Department of Forestry due to the type of vegetation, terrain and quantity of precipitation prevalent throughout the watershed. No major fire activity has occurred in the watershed since 2001.
- Due to the high potential for wildfire activity within the watershed, the possibility for water quality degradation due to the use of chemical fire retardants exists.
- Due to the high potential for wildfire activity within the watershed the potential for water quality degradation due to increased sediment loading resulting from a lack of groundcover remains.
- The City is not a landowner in the Salinas Reservoir watershed. Therefore, the City must continue to rely upon the control measures of the major landowners in the watershed, the U.S. Army Corp of Engineers, U.S. Forest Service, and their lessees, as well as the government agencies which regulate land use and contaminant discharge.
- The City has not developed a formalized and effective watershed protection plan due to their lack of jurisdictional authority over activities carried out upon land owned by others.
- Portions of the watershed do however fall under the San Luis Obispo County Santa Margarita Lake Natural Area Resource Management Plan and the Land and Resource Management Plan for the Los Padres National Forest as developed by the U.S. Forest Service.
- The City does not conduct routine inspections of the watershed due to their lack of authority to conduct such inspection on private lands and their respective land uses.
- Those portions of the watershed located within the Santa Margarita Lake Regional Park and Natural Area are inspected on a routine basis by the park rangers. Their ongoing activities continue to protect the watershed.
- Those portions of the watershed within the Los Padres National Forest are inspected periodically by the U.S. Forest Service in order to evaluate watershed conditions. Their ongoing activities continue to protect the watershed.
- The County of San Luis Obispo's General Plan contains elements which affect the watershed with respect to Land Use, Agriculture, and Open Space.
- The County Land Use Ordinance/Code contains sections relevant to watershed protection.

- The Agriculture and Open Space element of the County of San Luis Obispo General Plan is directed toward preserving and sustaining open space within the County.
- The watershed is located within the County's Las Pilitas and Los Padres Planning Areas.
- The land use elements within the Las Pilitas and Los Padres Planning Areas contain development standards related to specific land use issues. These standards contain provisions that provide watershed protection.
- The County of San Luis Obispo continues to maintain land use and building permit authority for much of the watershed. The City of San Luis Obispo Utilities Department has requested the County Planning and Building Department route all development proposals within the Salinas Reservoir watershed to the City for review.
- With regard to the County of San Luis Obispo's Land Use Ordinance/Code, specific areas that relate to water quality and water management address the minimum parcel size for the rural lands within the watershed, the specific uses of Santa Margarita Lake, and the maximum allowable animal densities per acre for the specific land uses.
- The land use element also identifies those areas which have features that are sensitive, hazardous, or fragile and which have potential cultural, educational, or economic value, thereby requiring a more detailed review of development proposals.
- The Salinas River generally upstream of Santa Margarita Lake and Pozo Creek upstream of the village of Pozo remains classified as a flood hazard area and are subject to specific construction standards as outlined in the County of San Luis Obispo Land Use Ordinance.
- The areas along the upper reaches of Salsipuedes Creek and along Hi Mountain Lookout Road are designated as a Geologic Study Area (GSA).
- The Santa Margarita Lake watershed and much of the surrounding area is designated as a Sensitive Resource Area.
- The principal federal agencies with significant responsibility with regard to the management of the Salinas Reservoir watershed are the U.S. Army Corps of Engineers and the U.S. Forest Service.
- The Central Coast Regional Water Quality Control Board establishes the wastewater discharge requirements for those areas within the Salinas Reservoir watershed.
- There are no known point pollution sources of waste discharge within the watershed.
- Urban runoff: construction, agricultural operations, timber harvesting, and on-site waste disposal constitute the non-point pollution sources of waste within the watershed.



- The City owns no land within the watershed and therefore has no lease agreements with other agencies or private parties.
- Water quality from mining activities, including abandoned mines, continues to be monitored by the Regional Water Quality Control Board.
- The only mine (inactive) known to be located in the Salinas Reservoir watershed, the Mercury Belle, does not have a discharge permit from the RWQCB.
- Recreational activities within the Santa Margarita Lake Regional Park and Natural Areas are limited to minimize potential contamination of the lake by sewage and erosion.
- Water-based recreation at the Lake is restricted to non-contact water sports and with the exception of boat launch and support facilities; there is limited vehicular access to the lake.
- Fire management practices within the watershed, as outlined in the USFS Land and Resource Management Plan, are focused upon reducing the incidence of human-caused wildfires.
- Furthermore, the U.S. Forest Service fire management practices specify that methods and equipment used be such that disturbance to the landscape and land surface is minimized. Also, those areas which are disturbed are to be rehabilitated to as natural a state as possible.
- The U.S. Forest Service Land and Resource Management Plan also contains management plan provisions related to improving water quality with regard to maintaining equilibrium conditions in streams, as well as identifying appropriate sanitary engineering practices for waste disposal to prevent effluent leaching into streams.
- The majority of the Salinas Reservoir watershed, as determined by the San Luis Obispo County General Plan, is designated Agriculture, Open Space, and Rural Land.
- The raw water has exceeded the USEPA drinking water MCL's for turbidity, pH, color, and odor during the period of record.
- The treated water produced by the City's filtration plant continues to be in compliance with applicable drinking water and treatment standards.
- Turbidity levels vary with seasonal trends such that the turbidity is typically higher in the winter months due to the increased sediment loading associated with winter rain and runoff.
- The raw water has shown varying concentrations of total and fecal coliforms for the period of record.

- The City has routinely met the applicable drinking water standards for coliform bacteria in treated water.
- In general the raw water quality has consistently been below the applicable MCLs for trace elements, with the exception of manganese.
- For the period of record, the raw water quality has consistently been below the applicable MCL's for radiological chemicals.
- The concentrations of organic chemicals in the raw water remained well below the USEPA and California MCL's and action levels.

## **4.2 Conclusions from the 2005 Update That Are Still Applicable**

- The most significant potential sources of Giardia Lamblia cysts, Cryptosporidium cysts, and enteric viruses regulated under the Surface Water Treatment Rule are cattle and wild animals.
- Human recreational users in the Santa Margarita Lake Regional Park and Natural Area are also a potential source of pathogens as a result of private sewage disposal and lake water contact.
- Potential contamination resulting from wastewater treatment plants, urban/industrial runoff, concentrated animal facilities, solid/hazardous waste disposal facilities, and seawater intrusion is not a concern in the Salinas Reservoir watershed.
- The City of San Luis Obispo is not a land owner or leesee in the Salinas Reservoir watershed and therefore does not have control over land use activities in the watershed.
- The City of San Luis Obispo's water treatment facility provides a high degree of treatment and consistently meets or exceeds the applicable drinking water and treatment standards for surface water treatment and effluent quality. A more detailed evaluation was completed in conjunction with the 2001 Salinas Reservoir Watershed Sanitary Survey Update and was submitted to CDPH in 2001.

## **4.3 Major Changes since the 2005 Update**

- The City and County have implemented an invasive mussel monitoring program at Salinas Reservoir. No detections of invasive mussel have been experienced in the reservoir.
- In 2005, the City Utilities Department developed an Emergency Response Plan (ERP) to comply with Safe Drinking Water Act requirements. The ERP covers the City's water system including the WTP and Water Distribution systems. The security at those facilities continues to be satisfactory.

- In 2008, the City WTP was upgraded to provide full conventional treatment credits for the total 16.0 million gallon capacity with the addition of ballasted flocculation to replace the previous coagulation/flocculation/sedimentation/filtration and coagulation/flocculation/direct filtration processes.
- The evaluation of alternative coagulants for improved TOC removal and disinfectant by-product formation was begun in 2012. City WTP staff, with the assistance of coagulant vendors, are continuing work on this study.

# Section 5

## Updated Water Quality Information

This section presents the updated raw water quality as provided by the City of San Luis Obispo. In order to simplify the organization of this section, the updated water quality tables are placed at the end of this section. The raw water sampling results described below are from samples collected at the treatment plant influent line from Salinas Reservoir rather than at the Salinas Reservoir outlet tower.

Raw water sampling is not clearly defined by regulations. Most raw water sampling programs consist of monitoring activities that constitute good practice and inform the water purveyor of the conditions within various watershed components, the overall impoundment (laterally and vertically), and, finally, the extracted water quality being conveyed to the water treatment plant.

### 5.1 Raw Water Quality – General Physical Characteristics

The City conducts general physical water quality testing on a yearly frequency at the City filtration plant influent. The test results obtained since 2005 are summarized in Table 5-1.

### 5.2 Raw Water Quality – Total/Fecal Coliform Bacteria

The City conducts sampling for bacteriological parameters on the raw water received from Salinas Reservoir. The data collected since the 2005 Update are summarized on Table 5-2. The test results show the water to be of excellent quality. Plate count bacteria sampling of the raw water is not felt necessary. This opinion is shared by water purveyors treating surface water sources and by the regulators. Untreated surface water is expected to have elevated levels of HPC bacteria.

### 5.3 Raw Water Quality – General Mineral Constituents

The City conducts general mineral on the raw water received from Salinas Reservoir once per year. The results obtained since the 2005 Update are summarized in Table 5-3. The raw water meets all of the applicable treated water MCL's. There have been no observable increases in any constituent, and nitrate/nitrite levels are extremely low.

### 5.4 Raw Water Quality – Inorganic Constituents

The City conducts inorganic chemical testing on the raw water received from Salinas Reservoir once per year. The results obtained since the 2005 Update are summarized in Table 5-4. The raw water meets all of the applicable treated water MCL's, except for iron and manganese. Iron and

manganese are relatively easy to treat, and the treated water has always exceeded State standards for these constituents.

## **5.5 Raw Water Quality –Radiological Constituents**

Table 5-5 indicates the concentration of gross alpha and total radium 228 radioactivity in the raw water received from Salinas Reservoir. Quarterly testing for gross alpha radioactivity was last conducted during 2004/5. The 2004/5 samples verified that the concentration of gross alpha radioactivity in the raw water was well below the MCL of 15 pCi/L and the 2006 samples verified that the concentration of radium 228 was below the 1 pCi/L trigger for continued monitoring.

## **5.6 Raw Water Quality – Organic Chemical Constituents**

The City has been sampling the raw water on the raw water received from Salinas Reservoir annually for certain organic chemicals. The sampling results generated since 2005 are summarized in Table 5-6. To date, no organic chemicals have been found at levels above laboratory detection levels.

## **5.7 Raw Water – Miscellaneous Sampling**

Due to the excellent quality of the raw water in Salinas Reservoir, additional sampling and testing of the water flowing into the reservoir is not warranted.

## **5.8 Overall Conclusions**

The existing water filtration plant owned and operated by the City of San Luis Obispo is more than adequate to effectively and reliably process raw water from Salinas Reservoir for turbidity reduction, disinfection, and taste/odor control. This conclusion is supported by the treatment plant evaluation that was performed by Boyle Engineering in conjunction with the 2001 watershed sanitary survey update. The Water Treatment Plant Review, dated February 2002, was submitted to CDPH following the 2001 Watershed Sanitary Survey.

The City of San Luis Obispo continues to anticipate more stringent water quality regulations and considers the potential for such requirements with every periodic upgrade to water treatment plant facilities. The last extensive upgrade of the water treatment plant was in 2008, during which ballasted flocculation was added to obtain full conventional treatment credits for the total 16.0 MG plant capacity. The City is confident that the current water treatment plant has the ability to meet pending regulations (Stage II D/DBP, Long Term 2 ESWTR, etc.). Alternative coagulants are currently being evaluated for their effectiveness in TOC removal and reducing formation of disinfection by-products.

Security of the watershed continues to be considered adequate. This is reinforced with the City's Emergency Response Plan developed in 2005. The watershed is relatively sparsely populated. The City has good on-going relationships with County staff, law enforcement, and nearby residents. The likelihood that something detrimental to water quality could happen within the watershed without the City being notified is considered remote.

Security of the water treatment plant is considered to be adequate and is also addressed in the City's Emergency Response Plan.

**Table 5-1**  
**Raw Water Quality - General Characteristics**  
**Upper Salinas Watershed Sanitary Survey**  
**City of San Luis Obispo**

| <b>Constituent</b> | <b>Units</b> | <b>MCL<sup>1</sup></b> | <b>9/05</b> | <b>9/06</b> | <b>9/07</b> | <b>9/08</b> | <b>9/09</b> | <b>9/10</b> | <b>9/11</b> |
|--------------------|--------------|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Turbidity          | NTU          | 0.3                    | 1.7         | 0.6         | --          | 0.4         | 0.5         | 1.0         | 0.9         |
| pH                 | pH units     | 6.0 - 8.5              | 8.2         | 8.2         | 8.5         | 8           | 8.6         | 8.1         | 8.7         |
| Temperature        | °C           | None                   | --          | --          | --          | --          | --          | --          | --          |
| A. Color           | pcu          | 15                     | 30          | 15          | --          | 15          | ND          | 15          | 15          |
| Odor               | TON          | 3                      | ND          | ND          | ND          | ND          | ND          | ND          | ND          |
| T. Alkalinity      | mg/L         | None                   | 120         | 110         | 120         | 110         | 120         | 110         | 110         |
| Hardness           | mg/L         | None                   | 165         | 150         | 160         | 161         | 157         | 163         | 168         |

<sup>1</sup>MCLs for treated water.

**Table 5-2**  
**Raw Water Quality - Total and Fecal Coliform Bacteria**  
**Upper Salinas Watershed Sanitary Survey**  
**City of San Luis Obispo**  
(MPN/100 mL)

| Date  | Total Coliform | Fecal Coliform |
|-------|----------------|----------------|
| 1/05  | 170            | 17             |
| 2/05  | -              | -              |
| 3/05  | -              | -              |
| 4/05  | -              | -              |
| 5/05  | <2             | <2             |
| 6/05  | -              | -              |
| 7/05  | 7              | 4              |
| 8/05  | 23             | 2              |
| 9/05  | -              | -              |
| 10/05 | 13             | <2             |
| 11/05 | 2              | <2             |
| 12/05 | <2             | <2             |
| 1/06  | 8              | <2             |
| 2/06  | 2              | 2              |
| 3/06  | <2             | <2             |
| 4/06  | 2              | 2              |
| 5/06  | <2             | <2             |
| 6/06  | <2             | <2             |
| 7/06  | <2             | <2             |
| 8/06  | -              | -              |
| 9/06  | 49             | <2             |
| 10/06 | 33             | <2             |
| 11/06 | <2             | <2             |
| 12/06 | <2             | <2             |
| 1/07  | 6              | <2             |
| 2/07  | <2             | <2             |
| 3/07  | 2              | <2             |
| 4/07  | <2             | <2             |
| 5/07  | <2             | <2             |
| 6/07  | 17             | <2             |
| 7/07  | <2             | <2             |
| 8/07  | 27             | <2             |
| 9/07  | <2             | <2             |
| 10/07 | <2             | <2             |
| 11/07 | <2             | <2             |
| 12/07 | <2             | <2             |

| Date  | Total Coliform | Fecal Coliform |
|-------|----------------|----------------|
| 1/08  | <2             | <2             |
| 2/08  | 2              | <2             |
| 3/08  | <2             | <2             |
| 4/08  | <2             | <2             |
| 5/08  | <2             | <2             |
| 6/08  | 2              | <2             |
| 7/08  | 2              | 2              |
| 8/08  | <2             | <2             |
| 9/08  | <2             | <2             |
| 10/08 | 23             | <2             |
| 11/08 | 130            | 4              |
| 12/08 | 300            | <2             |
| 1/09  | 80             | 4              |
| 2/09  | 50             | <2             |
| 3/09  | 240            | <2             |
| 4/09  | 4              | <2             |
| 5/09  | <2             | <2             |
| 6/09  | -              | -              |
| 7/09  | 2              | <2             |
| 8/09  | 240            | <2             |
| 9/09  | 500            | <2             |
| 10/09 | 23             | <2             |
| 11/09 | 2              | <2             |
| 12/09 | 2              | <2             |
| 1/10  | <2             | <2             |
| 2/10  | <2             | <2             |
| 3/10  | 2              | 2              |
| 4/10  | 4              | <2             |
| 5/10  | 50             | <2             |
| 6/10  | 1600           | <2             |
| 7/10  | 500            | 2              |
| 8/10  | 240            | <2             |
| 9/10  | >1600          | <2             |
| 10/10 | 300            | 2              |
| 11/10 | 1600           | <2             |
| 12/10 | 7              | <2             |

| Date  | Total Coliform | Fecal Coliform |
|-------|----------------|----------------|
| 1/11  | 17             | 4              |
| 2/11  | <2             | <2             |
| 3/11  | 7              | <2             |
| 4/11  | 13             | <2             |
| 5/11  | 80             | <2             |
| 6/11  | 23             | <2             |
| 7/11  | 13             | <2             |
| 8/11  | >1600          | <2             |
| 9/11  | >1600          | <2             |
| 10/11 | 70             | <2             |
| 11/11 | 80             | 2              |
| 12/11 | 2              | <2             |



**Table 5-3**  
**General Mineral Water Quality**  
**Upper Salinas Watershed Sanitary Survey**  
**City of San Luis Obispo**

| <b>Constituent</b>         | <b>Units</b> | <b>MCL<sup>1</sup></b> | <b>9/05</b> | <b>9/06</b> | <b>9/07</b> | <b>9/08</b> | <b>9/09</b> | <b>9/10</b> | <b>9/11</b> |
|----------------------------|--------------|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Calcium                    | mg/L         | --                     | 35          | 32          | 31          | 33          | 30          | 34          | 36          |
| Magnesium                  | mg/L         | --                     | 19          | 17          | 20          | 19          | 20          | 19          | 19          |
| Sodium                     | mg/L         | --                     | 22          | 18          | 22          | 2           | 23          | 21          | 20          |
| Potassium                  | mg/L         | --                     | 2           | 2           | 2           | 21          | 2           | 2           | 2           |
| Hydroxide                  | mg/L         | --                     | ND          | ND          | ND          | ND          | ND          | ND          | ND          |
| Carbonate                  | mg/L         | --                     | ND          | ND          | ND          | ND          | ND          | ND          | ND          |
| Bicarbonate                | mg/L         | --                     | 140         | 140         | 140         | 130         | 140         | 140         | 130         |
| Sulfate                    | mg/L         | 500                    | 77          | 71          | 68          | 72          | 75          | 73          | 72          |
| Chloride                   | mg/L         | 500                    | 11          | 11          | 11          | 13          | 16          | 13          | 12          |
| Nitrate as NO <sub>3</sub> | mg/L         | 45                     | ND          | ND          | ND          | ND          | ND          | ND          | 0.4         |
| Fluoride                   | mg/L         | 2                      | 0.2         | 0.2         | 0.3         | 0.2         | 0.3         | 0.2         | 0.2         |

<sup>1</sup>MCLs for treated water.

**Table 5-4**  
**Raw Water Quality - Trace Minerals**  
**Upper Salinas Watershed Sanitary Survey**  
**City of San Luis Obispo**

| <b>Constituent</b> | <b>Units</b> | <b>MCL</b> | <b>9/05</b> | <b>9/06</b> | <b>9/07</b> | <b>9/08</b> | <b>9/09</b> | <b>9/10</b> | <b>9/11</b> |
|--------------------|--------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Aluminum           | µg/L         | 1000       | 20          | ND          | ND          | ND          | ND          | ND          | ND          |
| Antimony           | µg/L         | 6          | ND          | ND          | ND          | ND          | ND          | ND          | ND          |
| Arsenic            | µg/L         | 10         | ND          | ND          | ND          | ND          | ND          | ND          | ND          |
| Barium             | µg/L         | 1000       | 27          | 21.2        | 24.8        | 24.9        | 24.1        | 22.9        | 23.9        |
| Beryllium          | µg/L         | 4          | ND          | ND          | ND          | ND          | ND          | ND          | ND          |
| Boron              | µg/L         | 1000       | ND          | ND          | ND          | ND          | ND          | ND          | ND          |
| Cadmium            | µg/L         | 5          | ND          | ND          | ND          | ND          | ND          | ND          | ND          |
| Chromium, total    | µg/L         | 50         | ND          | ND          | ND          | ND          | ND          | ND          | ND          |
| Copper             | µg/L         | 1000       | ND          | ND          | ND          | ND          | ND          | ND          | ND          |
| Cyanide            | µg/L         | 150        | ND          | ND          | ND          | ND          | ND          | ND          | ND          |
| Iron               | µg/L         | 300        | 10          | ND          | 70          | 60          | ND          | ND          | ND          |
| Lead               | µg/L         | 15         | 0.5         | ND          | ND          | ND          | ND          | 0.3         | ND          |
| Manganese          | µg/L         | 50         | 20          | 10          | 30          | 10          | 10          | 20          | 10          |
| Mercury            | µg/L         | 2          | 0.02        | ND          | ND          | ND          | ND          | ND          | ND          |
| Nickel             | µg/L         | 100        | ND          | ND          | 3           | ND          | ND          | ND          | ND          |
| Selenium           | µg/L         | 50         | ND          | ND          | ND          | ND          | ND          | ND          | ND          |
| Silver             | µg/L         | 100        | ND          | ND          | ND          | ND          | ND          | ND          | ND          |
| Thallium           | µg/L         | 2          | ND          | ND          | ND          | ND          | ND          | ND          | ND          |
| Zinc               | µg/L         | 5000       | ND          | ND          | ND          | ND          | ND          | ND          | ND          |

**Table 5-5**  
**Raw Water Quality - Radiological Constituents**  
**Upper Salinas Watershed Sanitary Survey**  
**City of San Luis Obispo**

| <b>Date</b> | <b>Total Alpha<br/>(pCi/L)</b> | <b>Total Beta<br/>(pCi/L)</b> |
|-------------|--------------------------------|-------------------------------|
| MCL         | 15                             | 50                            |
| 8/96        | 0.0±1.0                        | 2.0±2.0                       |
| 5/04        | 2.25±1.38                      | --                            |
| 8/04        | 0.686±1.08                     | --                            |
| 11/04       | 1.25±1.18                      | --                            |
| 2/05        | 1.16±0.625                     | --                            |

| <b>Date</b> | <b>Total Radium 228</b> | <b>Counting Error</b> |
|-------------|-------------------------|-----------------------|
| 3/06        | 0.034                   | ±0.405                |
| 6/06        | 0.120                   | ±0.528                |

**Table 5-6**  
**Raw Water Quality - Organic Chemicals**  
**Upper Salinas Watershed Sanitary Survey**  
**City of San Luis Obispo**

| Constituent                         | Units | 9/05 | 9/06 | 9/07 | 9/08 | 9/09 | 9/10 | 9/11 |
|-------------------------------------|-------|------|------|------|------|------|------|------|
| Bromodichloromethane                | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Bromoform                           | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Chloroform                          | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Dibromochloromethane                | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Total Trihalomethanes               | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Benzene                             | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Carbon tetrachloride                | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,2-Dichlorobenzene                 | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,4-Dichlorobenzene                 | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,1-Dichloroethane                  | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,2-Dichloroethane                  | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,1-Dichloroethylene                | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| cis-1,2-Dichloroethylene            | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| trans-1,2-Dichloroethylene          | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Dichloromethane                     | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,2-Dichloropropane                 | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Total 1,3-Dichloropropene           | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Ethylbenzene                        | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Monochlorobenzene                   | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Styrene                             | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,1,2,2-Tetrachloroethane           | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Tetrachloroethylene                 | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Toluene                             | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,2,4-Trichlorobenzene              | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,1,1-Trichloroethane               | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,1,2-Trichloroethane               | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Trichloroethylene                   | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Trichlorofluoromethane(Freon 11)    | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Trichlorotrifluoroethane(Freon 113) | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Vinyl Chloride                      | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| m,p-xylene                          | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| o-xylene                            | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Total xylenes                       | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Bromobenzene                        | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Bromochloromethane                  | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Bromomethane                        | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| n-Butylbenzene                      | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| sec-Butylbenzene                    | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Tert-Butylbenzene                   | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |

| Constituent                    | Units | 9/05 | 9/06 | 9/07 | 9/08 | 9/09 | 9/10 | 9/11 |
|--------------------------------|-------|------|------|------|------|------|------|------|
| Chloroethane                   | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Chloromethane                  | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 2-Chlorotoluene                | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 4-Chlorotoluene                | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Dibromomethane                 | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,3-Dichlorobenzene            | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Dichlorodifluoromethane        | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,3-Dichloropropane            | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 2,2-Dichloropropane            | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,1-Dichloropropene            | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Hexachlorobutadiene            | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Isopropylbenzene               | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| p-Isopropyltoluene             | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Methyl tert-Butyl Ether (MTBE) | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Naphthalene                    | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| n-Propylbenzene                | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,1,1,2-Tetrachloroethane      | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,2,3-Trichlorobenzene         | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,2,3-Trichloropropane         | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,2,4-Trimethylbenzene         | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| 1,3,5-Trimethylbenzene         | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| cis-1,3-Dichloropropene        | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| trans-1,3-Dichloropropene      | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Ethyl tert-Butyl Ether (ETBE)  | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| Tert-amyl-methyl Ether (TAME)  | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |
| tert-Butanol                   | µg/L  | ND   | ND   | ND   | ND   | ND   | ND   | ND   |

# Section 6

## References

City of San Luis Obispo, Salinas Reservoir Watershed Sanitary Survey Update (November 2005)

Boyle Engineering, Upper Salinas Watershed Sanitary Survey Update (April 2001)

Metcalf & Eddy, Upper Salinas Watershed Sanitary Survey (January 1996)

County of San Luis Obispo, Salinas Reservoir Water Quality Monitoring Report Water Year 2011

County of San Luis Obispo, Department of Agriculture/Masurement Standards database

County of San Luis Obispo, Department of Public Health Services/Environmental Health

County of San Luis Obispo, Department of Planning and Building database

Regional Water Quality Control Board database

County of San Luis Obispo, Department of Parks staff

California Department of Public Health

Environmental Protection Agency

United States Forest Service