

Frequently Asked Questions Regarding Water Quality Issues in the Los Osos Community

Spring 2002 (Edition 1 of 4)
Central Coast Regional Water Quality Control Board



Who is the Regional Board and what is its mandate?

The Regional Water Quality Control Board is a State Agency composed of nine Governor appointed members with a mission to preserve, enhance and restore the quality of California's water resources for the benefit of present and future generations. There are nine Regional Boards statewide, plus the State Board (parent agency) in Sacramento. The Central Coast Region reaches from Santa Clara County to northern Ventura County and inland to the ridgeline of the coastal range.

The Regional Boards regulate discharges of waste in order to prevent degradation of water quality. For example, the Regional Board regulates industries including: wineries, dairies, quarries, power plants, as well as community wastewater systems, chemical spills, and cleanup sites such as the Unocal Guadalupe and Avila Beach sites. Also, staff at the Regional Board are involved in a variety of public education, assistance and regulatory programs to promote land use practices which will result in water quality protective agricultural use practices, erosion control, stormwater management, promoting conservation easements, etc.

Does Los Osos have a water quality problem?

Yes, the Los Osos Community does have a variety of water quality problems. Located on the southern edge of Morro Bay State and National Estuary, the community of Baywood Park/Los Osos has a population of approximately 15,000 people or about 5,000 individual lots served by septic systems. Many of the lots are too small for standard leachfield disposal (some lots are only 25 or 37.5 feet wide), therefore pits are used for waste disposal. In the most acutely problematic areas, disposal pits extend into shallow ground water

leaving no soil column for further treatment of waste.

Inadequate treatment and disposal of wastewater in Los Osos impacts beneficial uses of surface and ground water in a number of ways. Ground water (drinking water supply) has been so degraded by nitrates that many areas no longer meet State drinking water standards and use of the shallow portions of the aquifer is now limited primarily to non-domestic (irrigation) supply. Because shallow ground water is so degraded, domestic supply is pumped primarily from the deeper portions of the aquifer. Pumping from the deeper zone increases the potential for seawater intrusion into the deeper zone.

Surfacing ground water, especially during the wet season, creates a public health threat by forcing wastewater to the ground surface. Surfacing water (ground water mixed with wastewater) flows and/or is pumped into roadside ditches and storm drains, which then flow into Morro Bay. In less adequately drained areas, surfacing wastewater remains ponded until it can soak back into the soil. This situation is hazardous to children who are tempted to play in these puddles. Increased bacteria in Morro Bay have contaminated shellfish and resulted in shellfish growing areas being downgraded by the State Department of Health Services. Furthermore, DNA testing of bacteria laden seepage into Morro Bay from the Los Osos shoreline (ground water seeps) has confirmed the largest source of bacteria is from humans. Continued use of septic systems in the community will only increase these problems.

Why can't Los Osos residents continue using their septic systems?

Los Osos is unique in many respects, but mainly because of its location adjacent to a beautiful, but environmentally sensitive, area such as the Morro Bay State and National

Estuary. Unfortunately, the community developed without long-range planning or infrastructure designed to protect its sole source of drinking water (ground water) or the Morro Bay Estuary.

Extreme density of septic system use is the greatest (and most controllable) source of ground water degradation in Los Osos. As a general guideline, septic systems are normally limited to one residential system per acre. In many areas of Los Osos the density is more than ten times that limit.

Why do we need a wastewater project?

As far as we know, water quality problems in Los Osos have been the most studied issue in the history of this Regional Board. Issues ranging from quantity and quality of ground water supplies, sources of contamination, and possible corrective actions have been studied since 1969 by federal, state and local governmental agencies, private consultants and community groups, including:

- State Department of Water Resources
- State Water Resources Control Board
- U. S. Environmental Protection Agency
- U. S. Geological Survey
- San Luis Obispo County
- Los Osos Community Services District
- National Estuary Program
- Citizen's groups (Blue Ribbon Committee, Technical Advisory Committee, and others)

Various nationally renowned consultants including Brown & Caldwell, Engineering Science, Metcalf & Eddy, Montgomery Watson, Fugro West, The Morro Group, and Questa Engineering have evaluated, studied and reported on this issue. There have also been several citizens' groups: (Technical Advisory Committee, Blue Ribbon Committee, Solution's Group, and others) which have also met, researched, evaluated, discussed and issued reports on the subject. These studies identify significant water quality problems and

conclude a wastewater project is needed to resolve those problems.

Summary

Our hope and intent with this series of flyers is to provide some basic facts and scientific information to address questions that have repeatedly come up regarding this subject. We believe the community, through its locally elected Los Osos Community Services District, has been working hard to develop a technically sound and viable wastewater project. The District's project was developed after lengthy and comprehensive evaluation of wastewater technologies and alternatives. The project was subject to a thorough public process, including the preparation and certification of an Environmental Impact Report. In addition, the level of support for this project was evident by the approval of the 2001 assessment district by an overwhelming majority of the voting Los Osos' property owners.

Cost of the project is a concern for everyone, and delays will contribute to even greater expense. Community members interested in helping secure additional public funding for the project can write their legislative representatives (State Assembly and Senate and U. S. Congress and House of Representatives) requesting such financial support. As always, staff is available to meet or discuss any and all further questions Los Osos community members may have regarding these issues. Contact information is listed below.

For More Information

If you have question, please contact:

Sorrel Marks, Project Manager at 549-3695 or Gerhardt Hubner, Coastal Watershed Supervisor at 542-4647



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About the Central Coast Regional Water Quality Control Board: Located in San Luis Obispo, we're part of the California Environmental Protection Agency (Cal/EPA). Our mission is to preserve, enhance, and restore the quality of the Central Coast Region's water resources for the benefit of present and future generations. You may contact us by telephone at (805)-549-3147. Visit us on the web at: www.swrcb.ca.gov/rwqcb3/WMI/Index.htm

Frequently Asked Questions Regarding Water Quality Issues in the Los Osos Community

Spring 2002 (Edition 2 of 4)

Central Coast Regional Water Quality Control Board



What are Nitrates, and where do they come from?

Nitrogen is one of the most basic (and plentiful) components of the air we breath and of biological material. Nitrates are a compound of nitrogen and oxygen, and a component of the nitrogen cycle (the natural breakdown process of nitrogen). Nitrogen enters a septic system in the form of ammonia and little change (breakdown) occurs in the septic tank. After it is discharged to the soil, the ammonia typically breaks down to nitrate. The drinking water standard for Nitrate is 45 mg/L. Nitrate levels greater than 45 mg/L have been associated with the occurrence of blue baby syndrome in infants. Other studies indicate an increased exposure to nitrate in the diet or drinking water contributes to an increased prevalence of stomach cancer.

Some have suggested that septic systems are providing denitrification (the natural breakdown process of nitrogen). Denitrification requires specific soil and oxygen conditions to occur. Los Osos and its underlying sandy soils are not ideal conditions for denitrification. The fact that denitrification is not adequately removing nitrogen from septic system discharge is demonstrated by contamination in Los Osos' ground water basin.

It is important to note that nitrates are not the only water quality concern with septic systems. Non-biodegradable soaps, detergents, bathroom and kitchen cleaners and other chemicals disposed down the drain to a septic system are all potential pollutants of ground water. Septic tanks do not have the ability to effectively treat these chemicals. Contamination of a water supply or surface water by bacteria and viruses is another water quality concern. Their presence in a water body can impair other beneficial uses such as shellfish harvesting and recreational uses (boating and kayaking for example).

Do nitrates come from other sources besides septic systems?

Yes, as mentioned above, the nitrogen cycle converts nitrogen from a variety of sources into nitrate in ground water. Previous studies conducted in Los Osos indicate nitrates in ground water come predominantly from septic systems. Other sources include (to a much lesser degree) agricultural and horticulture operations, animals, and natural sources (atmospheric deposition, soil disturbance, weeds, etc.). What is important to remember is the relative amount (concentration and quantity) from each particular source. The water quality impact (problems created) from each source of nitrate is considered based upon its relative quantity and concentration when compared with other sources.

What we have seen in Los Osos is that as population (and septic tank use) increased from 1950 to present, so have nitrate concentrations in ground water.

Could we solve the problem by dewatering the shallow aquifer?

Such practice would be more expensive (than the proposed wastewater system) and in direct violation of environmental laws. It would also abandon community goals of having a self-sustaining water supply, and managing wastewater in an environmentally and financially superior manner.

Picture one million gallons a day (30 million gallons a month, 365 million gallons a year) of wastewater going to the Los Osos ground water basin and Morro Bay estuary. That is the quantity of wastewater that is being disposed of every day, every year in Los Osos. Now picture what it would take to dewater an aquifer (assume lowering 20 feet) encompassing 3,000 acres (60,000 acre-feet). 60,000 acre-feet equals 19,548 million or 19.5 billion gallons of

water. Factoring in an average specific yield of 20% for the aquifer equals approximately 4 billion gallons. A system to deal with this much water would require numerous extraction wells, pumps, trenches for utilities, and piping throughout the community. Furthermore, an extensive treatment facility would be needed to handle this extracted water. For reclamation use on agricultural land or greenbelt acres the facility would need treatment processes that meet stringent California Department of Health Services water quality standards. Numerous disposal areas and/or year-round users would need to be secured for the water. Discharge to a surface water body such as Morro Bay or Los Osos Creek would also require extensive treatment of the extracted water to meet strict water quality standards (it is also extremely unlikely that the water would be allowed to be discharged to Morro Bay National Estuary). Equally challenging and problematic is what would be done with the additional one million gallons of wastewater that would continue to be produced each and every day by the community, especially in the winter months. Essentially under this proposal the shallow aquifer would be used as a sewage collection system, which is unacceptable.

Were alternatives to the Wastewater Project thoroughly considered?

To address uncertainties in the earlier proposed Los Osos Community Service District's (CSD) project, the CSD embarked upon an evaluation of multiple wastewater project alternatives. This evaluation of alternatives examined, not only the CSD's original wastewater proposal, but also variations/combinations of it, and several other potential wastewater project alternatives including those analyzed by the County of San Luis Obispo. In addition, the CSD's consultants examined other potential wastewater and septic tank technologies. This evaluation resulted in a technically sound and viable wastewater project.

An earlier proposal, the Advanced Integrated Wastewater Pond System (AIWPS), was initially popular with some community residents because of its perceived low estimated cost. However, the CSD's careful and detailed

evaluation of the proposal demonstrated the current wastewater project to be superior due to: 1) being in line with community goals, values and acceptance, 2) ability to meet regulatory requirements, 3) ability to address the community's water quality problems (ground water and Morro Bay), 4) ability to sustain the community ground water basin and primary drinking water supply, and 5) long term cost-effectiveness.

Summary

Our hope and intent with this series of flyers is to provide some basic facts and scientific information to address questions that have repeatedly come up regarding this subject. We believe the community, through its locally elected Los Osos Community Services District, has been working hard to develop a technically sound and viable wastewater project. Cost of the project is a concern for everyone, and delays will contribute to even greater expense and continued degradation of water quality.

Community members interested in helping secure additional public funding for the project can write their legislative representatives (State Assembly and Senate and U. S. Congress and House of Representatives) requesting such financial support. As always, staff is available to meet or discuss any and all further questions Los Osos community members may have regarding these issues. Contact information is listed below.

For More Information

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Central Coast Regional Water Quality Control Board



Why does the Project cost so much?

Current estimates indicate the wastewater management project (plus associated environmental mitigation) will cost approximately \$85 million. By any measure, this is a large expense. The community has grown without a corresponding investment in infrastructure (roads, flood control/drainage, and wastewater). Through the 1980s the Federal government was subsidizing the costs for many wastewater treatment facilities nationwide. Unfortunately those grants are no longer available. What have replaced those grants are low interest loans. Regional Board staff worked hard back in the late 70s and 80s to get grant funding for a Los Osos community wastewater project. In continuing that trend we endorsed the January 2002 State Water Resources Control Board approval of the Los Osos Community Services District's (CSD) request for a \$65 million low interest State Revolving Fund loan. This loan will fund the majority of the wastewater project.

We understand that to further reduce the financial burden to the Los Osos community, the Los Osos CSD has been pursuing every potential source of financial assistance, including federal appropriations. Last year these efforts were successful in obtaining \$1 million from the state budget for planning costs, a \$51,000 grant from the Coastal Resources program for habitat conservation plan development, and a \$2 million Proposition 13 grant from the State Water Resources Control Board for disposal and environmental mitigation property acquisition. It is Regional Board's staff intent to continue to assist the CSD with information on additional funding sources in order to reduce the cost to the community.

Unfortunately each delay in the project (of which there have been a great number) has resulted in significant cost increases. Further

delays due to litigation and more studies will only result in a more costly project and more expense to the citizens of Los Osos.

Why not just deal with the problem by treating our ground water?

Removal of nitrate from a water supply is not easy, and it is expensive. Furthermore, by allowing the pollution and then treating the result, we (as society) would not be taking responsibility for the waste we are producing. That responsibility is shifted to whomever wanted to use clean water. The basic premise of all environmental regulations is that the waste producer must take responsibility for treating their wastewater.

One of the primary goals of the proposed wastewater project is to restore and protect the ground water as a source of domestic supply for current and future generations. Future generations should not bear the burden of cleaning (treating) the water supply due to irresponsible waste disposal practices of today.

Why can't Los Osos have a wastewater alternative similar to the San Lorenzo Valley or Templeton?

Each community manages wastewater according to its own unique community-specific circumstances (hydrology, geology, development density, resource needs, etc.).

Templeton contracts with the City of Paso Robles and pumps a portion of its wastewater to the Paso Robles treatment facility. The remainder of Templeton is served by a combination of septic systems (on large lots) and a pond system.

The San Lorenzo Valley area is a hilly/steeply sloped and wooded area of Santa Cruz County. It includes a combination of community sewers and on-site systems. Surface water vs. ground

water impacts due to septic systems were the primary culprit in this case. One of the unique features of the San Lorenzo Valley is that the County has developed a long-term management plan for addressing failing septic systems and water quality impacts. The management plan calls for sewerage in some areas (where development density makes such action feasible), upgrades for some on-site systems (ranging from septic tank retrofits/inserts to mini-treatment plants), and a variety of management, inspection and sampling strategies to assure effectiveness. The plan for Los Osos is similar; it calls for sewerage in small lot areas, with septic system management in the larger lot areas.

Templeton and San Lorenzo Valley exemplify the diverse strategies, which are used to manage wastewater, there are many others. The point is many years of effort and considerable financial resources have been spent developing a project suitable for Los Osos--A project designed specifically for the unique geological and geographical conditions and needs of Los Osos.

The most recent evaluation of Los Osos' unique conditions and needs, and detailed alternative analysis and feasibility study were completed as part of the Los Osos wastewater project Environmental Impact Report process.

What is the Prohibition Zone and what does it mean to Los Osos Property Owners?

In 1983, the Regional Board adopted Resolution No. 83-13, which amended the Water Quality Control Plan, Central Coast Basin (Basin Plan) and prohibited discharges of waste from individual and community sewage systems within portions of the Baywood Park/Los Osos area of San Luis Obispo County (Basin Plan prohibition area). The prohibition means that the existing septic systems are discharging illegally (and have been for 19 years) and that no new discharges (e.g., from potential homes on vacant lots) are allowed. It also means that if the community fails to resolve the problem, further enforcement may

be pursued by the Regional Board to assure water quality protection.

At the time the Regional Board adopted Resolution No. 83-13, the County represented that it could design and complete a wastewater collection and treatment system that would eliminate the need for individual and community on-site sewage systems by November 1, 1988. That project failed and the Regional Board prohibited any new discharges (effectively a building moratorium). This prohibition zone will remain in place until a viable solution and wastewater project is implemented; a solution which protects and restores the quality of Los Osos ground water basin and Morro Bay Estuary.

Summary

Our hope and intent with this series of flyers is to provide some basic facts and scientific information to address questions that have repeatedly come up regarding this subject. We believe the community, through its locally elected Los Osos Community Services District, has been working hard to develop a technically sound and viable wastewater project. This project was developed after lengthy and comprehensive evaluation of wastewater technologies and alternatives. Cost of the project is a concern for everyone, and delays will contribute to even greater expense.

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Central Coast Regional Water Quality Control Board



Exactly what is the Regional Board requiring in Los Osos?

There seems to be some confusion regarding what the Regional Board does and doesn't require from a wastewater project in Los Osos. First of all, the Regional Board does not specify what type of collection, treatment or disposal is included in the project. However, the Regional Board does set water quality objectives (parameters) and/or requirements that a wastewater project must meet in order to protect water quality, human health and the environment. In addition, the Regional Board is requiring resolution of the water quality problems in Los Osos. Stringent requirements are needed to restore Los Osos water quality. Therefore, only a few technologies and wastewater projects are capable of resolving the complex problems facing Los Osos in a dependable manner.

Much of the project is being financed by a low-interest State loan. Use of such loans is based upon demonstration to this Regional Board and the State Water Resource Control Board that a proposed project is technically, environmentally and financially sound. The project must meet water quality objectives and be a technically sound, proven and practical means of protecting and restoring surface and ground water quality throughout the Prohibition Discharge Zone. Otherwise, State loan funding is not available.

During the past two decades of project development, three separate and comprehensive alternatives evaluations have been conducted to assure that the project is the best and most cost-effective means of addressing the water quality problems. After the Coastal Commission in 1998 agreed with many Los Osos residents that Los Osos should have a Community Services District (CSD) and develop its own wastewater solution, the Regional Board allowed time for the CSD startup and the CSD's alternative evaluation. The CSD has developed an acceptable project and the Regional Board has adopted a Time Schedule Order (Enforcement Order with penalties of \$10,000 a day for each day of violation of the schedule) requiring compliance with an

implementation schedule. This is the community's project. There is no longer an option to start over again (the project planning phase) without significant penalties being imposed for failure to move forward in a timely manner.

Does U.S. EPA support or oppose this Project?

The United States Environmental Protection Agency (U.S. EPA) strongly supports resolving water quality issues associated with septic system discharges in Los Osos. Similar to the Regional Board, U.S. EPA does not typically mandate a particular method for resolving the water quality problems. However, U.S. EPA supports (with staff and financial resources) the Comprehensive Conservation and Management Plan (CCMP) for Morro Bay National Estuary. A priority implementation action (NUTR-1) of the CCMP calls for the support of efforts by the CSD to increase and improve the level of wastewater treatment in the community of Los Osos.

Ms. Cheryl McGovern, U.S. EPA staff representative for the Morro Bay National Estuary Program recently stated: "While the U.S. EPA values the dissemination of information for on-site wastewater management options in general, we continue to support the construction of the centralized wastewater treatment facility as the fastest, most economical and environmentally protective solution to the Los Osos wastewater pollution problem."

In 1994, a staff member from the U.S. EPA Office of Research and Development, provided an evaluation of Los Osos wastewater conditions and treatment options (Kreissel Report) which states: "Without a doubt the densely populated sections of Los Osos, e.g., El Moro, Upland, Los Osos Village and Cuesta will require centralized wastewater collection owing to the fact that they cannot physically accommodate properly designed onsite systems, as required by more than 40 sets of state standards and the present standards of the San Luis Obispo County." He further summarized by stating that, "The non-

sewered option is not physically feasible due to lot size limitations in most of the presently developed lots of Los Osos and due to nitrogen removal limitations which fall short of the present RWQCB requirements." Unfortunately, Mr. Kreissel's report has been repeatedly mischaracterized by project opponents, leading to confusion on this issue.

There are suggestions by some that monitoring wells are the culprit?

The Los Osos Community Services District recently developed a comprehensive ground water monitoring program to evaluate long-term trends of ground water quality. As part of its ground water protection efforts, the District evaluated the integrity of several wells, including the eleven most recently used for nitrate monitoring. This evaluation identified and recommended improvements to some of the wells (if they are to remain in use), and determined that none of the wells evaluated had significant potential for impacting ground water. The District is proceeding with improvements to those wells.

However, it is important to keep in mind related and significant factors that are impacting Los Osos' ground water basin. These factors include the basin's hydrogeology, relative contribution from individual pollutant sources, pollutant fate and transport and their relative concentrations. Any small amount of storm runoff, which could have entered a well, is insignificant when compared to the pollutant loading from approximately 5,000 septic systems within the community. Remember these septic systems discharge about one million gallons a day of partially treated wastewater.

What if the project is stopped?

The Regional Board's requirements and the Time Schedule Order are for the community's governing entity (the CSD) regardless of specific members of the Board of Directors. In fact, one CSD Director is not a member of the same group initially elected to the CSD. Accordingly, requirements remain regardless of Director changes. Any resulting delays due to revising the project would be cause for enforcement of the Time Schedule Order. Such action would undoubtedly result in significant expense for the

CSD (penalties, legal representation and loss/repayment of \$2 million in Proposition 13 grant funds, and lost opportunity for future Proposition 13 funds). It is not clear whether the CSD could remain a viable governing entity if faced with such expenses.

In the event that responsibility for community services in Los Osos reverts to the County, the Regional Board maintains similar enforcement documents issued to assure the County will proceed with a wastewater project in a timely manner. As described, however, the community has already "been there, done that" with the County; desired and received the opportunity to have a community based project, and its time to proceed.

Summary

We believe the community, through its locally elected Los Osos Community Services District, has been working hard to develop a technically sound and viable wastewater project. This project was developed after lengthy and comprehensive evaluation of wastewater technologies and alternatives. We encourage all community members to participate in development of the project to assure the result is a source of pride for the community.

For More Information

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