

## **AFFIDAVIT OF JOHN A. ALEXANDER, Ph.D., IOM, LFIBA**

I, John A. Alexander, herein declare that:

1. I am a resident of Cayucos, California. I have a bachelor of science degree in structural engineering from the University of California - Berkeley, and a doctorate degree in environmental engineering from Occidental University in St Louis, Missouri. I was the 152nd person inducted in the World Who's Who Hall of Fame. I have served as a science advisor at the USA Presidential level, and in 2001 I was elected "Scientist of the Year" by the International Biographical Centre.
2. In 1942, I was commissioned as one of the first Seabee officers and oversaw the construction of several Naval bases in the Pacific theatre, including in the Aleutian Islands. After the war, I started John A. Alexander Construction and completed over 3000 buildings in and around California. Our company invented "tilt-up" concrete construction.
3. I am also the founder of John Alexander Research, Inc., A&W Smelter & Refiners, Inc., and Water Science Technologies, Inc. I created these companies in order to help address world problems and shortages in affordable and safe housing, in order to improve recycling and resource recovery, and to help eliminate the severe shortages that exist around the world in clean drinking water. The catalyst for many of these companies was the April 21, 1961 speech by President John F. Kennedy who said "If we could ever competitively get fresh water from salt water, that would greatly benefit humanity and dwarf any other scientific accomplishment."
4. I am a co-author of Water Reuse - Second Edition published in 1980 by the Water Pollution Control Federation. I also co-created the first Abalone Farm in the United States, which is located on my property in Cayucos. I have been involved in marine research to save the Pismo clam, and to build house structures using marine resources. I have been researching algae, including seaweed, and the growth of other valuable marine life. I have a small research center in the Central Valley which is investigating means of removing selenium and salt contamination from agricultural surface water.
5. I have been involved in the Los Osos sewer controversy for 30 years. I am not convinced that there is a problem with a majority of the septic tanks currently in service there. It appears that the underlying soil is properly recycling the nitrogen loading that it is experiencing.
6. During the past 10 years, there has been continuous research regarding and a steady trend is developing against massive sewer projects. This trend has the support of many environmental groups which have witnessed the ecological damage that results from sewer projects and the large residential developments that they permit along the coast. There is also a growing problem with finding a home for the sludge that is produced, and finally there are a multitude of problems associated with disposing of the treated effluent waters, which in the case of Los Osos may be as high as 1.5 million gallons a day.
7. I have been asked by the main citizens' group to advise on alternatives to the sewer and large conventional sewage treatment plant being proposed by the Los Osos Community Services District. I have been donating my time, as this is an important project which threatens to hurt a lot of low income families if the Sewer Project goes forward in its present form.

8. It would take a large number of pages to explain all the options and alternatives and their justification. Suffice it to say that septic tank technology is currently equal to or superior to that of a sewage treatment plant. In addition, there is sound chemistry that exists to support relatively inexpensive systems which will remove nitrates from groundwater and surface waters. These include galvanic agglutination and soil percolation. There is a plant operating down the coast in the City of Grover Beach that removes nitrates using ion exchange technology. Several California water districts, such as Arroyo Grande and Garden Grove have a different solution. Where they have minor amounts of nitrates, they are simply diluting the nitrates by mixing them with additional fresh water until safe concentrations are reached (i.e. concentrations under the EPA Maximum Contaminate Level "MCL" of 45 mg/l) and then they are selling it to their residents. With current technologies, the nitrate problems present in the Los Osos groundwater can be treated for less than 10% of the costs of this Sewer Project.

9. Years ago, I discussed emerging technologies with Ken Jones of the Central Coast Regional Water Quality Control Board who told me: "Nothing will be used in my district unless it has had 25 years of use elsewhere." It is that mentality which still exists at the Regional Board and the result is a massive sewer project that is both not needed and is beyond the budgets of many of the residents of Los Osos.

10. The problem in San Luis Obispo County is not nitrates in groundwater, as that can be solved, and solved inexpensively. The problem is that the County and State bureaucracies only have experience with sewer projects and conventional treatment plants.

11. There are numerous, low-cost solutions available to the Community of Los Osos. These include the following:

A. If there is a true separation problem with some of the septic tanks, then the upper aquifer could easily be lowered to increase separation and percolation;

B. Any upper aquifer waters found to have trace nitrates could be sold or pumped to water local farmland, thus reducing groundwater pumping by those farms. It needs to be remembered that water contaminated with nitrates at concentrations in excess of the MCL, may not be safe to drink, but such water has a ready market with local farmers who would benefit from and would presumably pay for such water for their crops;

C. Any upper aquifer waters found to be of drinking water quality, could be injected directly into the lower aquifer, thus recharging it and thus also addressing any salt water intrusion problems that may exist.

I have personal knowledge as to the above matters and if called upon, I could and would competently testify thereto. I swear under penalty of perjury, that the foregoing is true and correct and that this affidavit was executed on August \_\_, 2005 in Cayucos, California.

**JOHN A. ALEXANDER, PhD, IOM, LFIBA**