

**Village of Corrales**  
**Third Public Meeting – November 29, 2007**  
**Treatment Systems and Hydrogeology**  
**Questions and Answers**

- Q. What is the effect of removing recharge to the Aquifer from septic tank leachfields?
- A. The proportion of recharge from leachfields is likely small relative to other sources of recharge, and leachfield recharge contains elevated contaminant concentrations, so the effect is positive
- Q. Are you also looking at the way agriculture, regular verses organic, is effecting the water quality?
- A. Part of the study is to document areas of known impacted aquifer, and potential sources of contaminants will be evaluated. It is difficult to separate agricultural impacts from septic tank leachfield impacts due to the fact that the contaminants are the same from both (nitrogen compounds).
- Q. From what I understand, there is no historic time when there has not been contamination from man or animal. What are the acceptable limits? Will your data be able to give us some idea where we are and what the preferable levels are?
- A. The State of New Mexico regulates water quality to ensure that the groundwater resource is available for use in the future. The state standard for nitrate (as nitrogen) is 10 mg/l. This is the applicable standard. The federal Safe Drinking Water Act contains standards for public drinking water systems, the nitrate (as nitrogen) standard is 10 mg/l.
- Q. How long does it take nitrate to break down?
- A. Nitrate is broken down to nitrogen gas through biological activity, which doesn't happen readily in the aquifer. Nitrate is more commonly diluted to below the standard.
- Q. Are there aquifer impacts from years of livestock presence?
- A. In order to impact the aquifer, usually you need a large, confined population of cattle like a dairy or feedlot. In Corrales, animal population densities are low, so impacts to the aquifer would be less likely.
- Q. How often do you need to have your septic tank pumped?
- A. Usually every three years is adequate.
- Q. Regarding the leach field, how deep is the impact?
- A. We've seen evidence of impacts in Corrales at depths of greater than 100 feet.
- Q. Does the state have a program for the leachfields in recharge areas?
- A. If you are discharging more than 2,000 gallons a day you must obtain a discharge permit from the NMED. For individual home leachfields, construction must meet certain requirements. Additionally, the state is evaluating what should be done in areas that the aquifer is susceptible to leachfield contamination.



- Q. If there is a single spot that is affecting the aquifer, is that contaminating the entire aquifer?
- A. The aquifer underlying Corrales is relatively continuous, so there is potential that contaminants will migrate down-gradient into non-impacted areas of the aquifer.
- Q. What affect does the bentonite sealing the well have?
- A. The bentonite seal in a well is designed to ensure the lower portion of the well is not impacted by shallow contaminants which could be pulled down the annular space surrounding the well casing. Bentonite seals are not perfect, so contaminants can be pulled down into the aquifer.
- Q. Are there any test wells to test the water moving into Corrales?
- A. None specifically for that purpose.
- Q. In the recent tests of well in Corrales, they didn't see significant concentrations of Nitrate. Are there any recent results of the levels?
- A. Analytical results from samples collected during 2006 indicate up to approx. 5 mg/l nitrate (as nitrogen) in wells in Corrales. Historical analytical results have shown supply wells contaminated in excess of the standard of 10 mg/l.
- Q. Was the testing done during a wet or dry year?
- A. The relatively slow recharge to the aquifer somewhat mitigates or buffers impacts from wet and dry years.
- Q. Once an aquifer has been contaminated, is there a way to clean that up?
- A. Aquifer remediation can be done, but it is generally very expensive. It is more common for municipalities to find unimpacted areas of the aquifer (up-gradient, deeper, etc.) to us.
- Q. Where do you measure in effluent system?
- A. You don't normally measure effluent quality in a septic tank leachfield system. It's not required by NMED.
- Q. There is no way to test the quality of water from the septic tanks?
- A. There has not been a lot of testing of septic tank effluent from the leachfield because it's not required. Normally it's not until someone starts to notice that their water tastes or looks funny that someone raises the question of possible septic tank contamination. No real data of effluent quality just below the leachfield is available. It's the impact to groundwater that's the concern.
- Q. Do we have some kind of idea of the quality of water coming out of the water evaporating from the leach fields?
- A. I have not read any hard data on evaporation.
- Q. How does chlorine and detergent affect the septic tank?
- A. Chlorine does affect your septic tank as high levels can kill the bacteria that live there. Water softeners are not allowed to discharge to septic tanks in some areas.



- Q. Do trees help to pull those contaminants?
- A. Some what, it depends on the contaminants. Trees can be damaging to leachfields.
- Q. Does putting grease down the septic tank damage the system?
- A. It can clog the system.
- Q. Do you know how many of the 1,294 contaminated aquifers have been recovered?
- A. I don't know how many may have been brought back.
- Q. Traditionally in Corrales with shallow wells, the water may smell and look bad but the tests are fine.
- A. There are primary and secondary contaminant standards for water. The secondary standards, which are more of the aesthetics of appearance and taste, aren't enforced.
- Q. The situation with so many sources of contamination we don't know what the sources were. How can we make a decision without some variables?
- A. You have a number of your own variables here, including cesspools.. The past data has been scattered. Some of the monitoring here has been real sporadic. I know past data indicates that there has been some well contamination.
- Q. You may be able to site wells around New Mexico but to make that happen in Corrales is a big leap.
- A. To try to pinpoint potential contamination with inconsistent data is hard. You can't say all the water in Corrales is bad. NMED and Souder Miller are thinking about more preventative measures for wastewater. Some people in New Mexico are putting in systems and doing what can be done now to prevent further potential damage. A community typically has a public water system first before a wastewater system.
- Q. Are earthworm's part of the biomat (under the septic tank leachfield)?
- A. No, they are not part of the biomat, it is made up of bacteria.
- Q. 20 ATU's are approved (by NMED), but not an effluent with nitrogen at 50 ppm?
- A. You would have to look at the NMED website for the specific approved levels. NMED targets <20 ppm nitrogen from ATUs.
- Q. With the ATU's, how much does maintenance and testing cost?
- A. It can cost several thousand dollars to add an ATU to an existing septic tank system. Annual sampling would be several hundred dollars. There are economies of scale. Group sampling rates would be cheaper.
- Q. You talked about disinfection methods. I didn't see any of those mentioned with the ATU.
- A. Those are used in the public wastewater treatment plants and not typically required for residential septic tanks or ATUs. If you re-use the effluent above ground you have to disinfect it. It is easier to re-use effluent underground as it does not require disinfection. Disinfection is a safe guard from exposure to bacteria.
- Q. Do any of those additives that they sell for septic tanks work?



- A. Yes. Basically some of them contain bacteria or food for existing bacteria that help eat up the sludge.
- Q. Of the larger treatment facilities, would you want to live next to one?
- A. At PaaKo Communities there will be houses located within 300 – 400 feet from the wastewater treatment plant. The air inside of the plant will have an earthy smell, like dirt or compost.
- Q. How long is the plant (MBR) down for cleaning the filters?
- A. There are periodic cleanings with citric acid that would occur automatically. Annually there are membrane inspections using an overhead crane to pull the individual membrane filter cassettes. You don't have to take the whole plant down at one time to clean or inspect the membranes.
- Q. Will you address the collection systems for the large plants?
- A. SMA presented collection systems in the public meeting held last month. That presentation is available on the websites. It will also be included in the report we prepare.
- Q. In the northern side of Rio Rancho there is a sewer facility by Angel Road and it really smells.
- A. You sometimes have that with older facilities that don't treat as efficiently as modern day systems do or don't use the aeration processes to control odor. It sometimes is also due to the way the plant is operated.
- Q. You mean Cordova and Moriarty are more advanced than we are? How soon before the State pounces down on us?
- A. NMED is very concerned about the potential of septic tank impacts to groundwater in Corrales. They can not enforce anything until there is a definite problem. You don't want to wait until that happens.
- Q. The connection between phasing and funding, will you be addressing this? Are you going to connect the funding with the phasing?
- A. We will be addressing that in our report, as it is required to show rates schedules and how a community can support the project. There are multiple ways to fund a project. Due to high costs and limited funding amounts we breakdown a project to show phases based on what might be expected from funding agencies. We take the cost of the project and break it into phases with varying grant/loan scenarios to give the Owner and funding agencies an idea of what resulting rate schedules would be required. We also show the rates in reference to median household income.
- Q. There are funds available. San Luis now has a water system and Souder Miller did the work.
- A. Once a project is started, it is usually easier to get additional funding. Funding agencies like to help complete a project.
- Q. I'm confused, there are some folks who are against too much traffic, they don't want to address the problem. I don't want to pay for a sewer for the business district. I don't want a sewer system forced on me.



- A. Those will be decisions that have to be made by the community and governing body.
- Q. With a proper septic system growth should not be a problem.
- A. Our recommendations will address maintaining the quality of groundwater and future growth.
- Q. NMED says that they have had complaints and Rogers (water well drilling company) is out here all the time. What kind of problems does NMED have with Corrales?
- A. It is reported that water well drilling rig are here all the time but it does not appear to be all for new construction. People have to be having problems with their water wells. NMED indicated that they receive a number of septic tank related calls and are in Corrales almost daily. They said some calls are from someone having a big party and septic tank leachfield water comes to the surface or someone does four loads of laundry at one time and leachfield water comes to the surface. The NMED log of those problems is not public information. I talked to NMED and the community is now doing much water well sampling with them. NMED thinks this is due to the Village water well sampling program.
- Q. We all assume we have plenty of water. I don't believe that. We are using water and we won't have water in ten years.
- A. You have a lot of water underground. A 40-year plan has been done for this area. Sandoval County requires developers to prove groundwater availability for 100 years.

