

NEWS RELEASE

DRAFT

Study: Plan to Irrigate Wine Country with Treated Sewage Will Contaminate Important Reserve of Pure Drinking Water



One of Sonoma County's most plentiful aquifers would be subject to toxin and pharmaceutical pollution if wastewater disposal plan is adopted

Healdsburg, CA – April 8, 2008. A vast reserve of natural, pure drinking water – virtually untapped and potentially critical to drought-challenged Sonoma County -- will become polluted with known toxins, metals, and emerging contaminants if a plan to dispose of municipal wastewater on north county vineyards is implemented, a \$10,000 hydrogeologic study has found.

The report's conclusions, announced today by the Clean Water Coalition of Northern Sonoma County, contradict findings by the Sonoma County Water Agency (SCWA) that the wastewater irrigation plan is safe.

If approved by the County's board of supervisors, the Northern Sonoma County Agricultural Re-use Project (NSCARP) would eventually spray 4 billion gallons of reclaimed water from urban sewage treatment plants across 21,000 acres of prime Wine Country farmland around Healdsburg – in the Alexander, Dry Creek and Russian River Valleys – immediately above one of the County's largest freshwater aquifers.

The Clean Water Coalition (CWC) study, which assessed soil conditions and groundwater recharge patterns in the grape growing region, found that NSCARP would have the following detrimental effects:

- **Pharmaceuticals and other *emerging contaminants* in wastewater would pass directly into drinking water reserves, unabsorbed by the shallow, permeable soils and gravel that is prevalent in the area**
- **Nitrate concentrations in drinking water could reach toxicity levels harmful to humans, and potentially fatal to infants**
- **Current pure supplies of drinking water would become unfit for human consumption, and could require costly upgrades at municipal and community wells downstream of the agricultural irrigation sites.**

Green spin vs. long-term environmental damage

NSCARP is being promoted as a green plan – “recycling” -- by its backers, but the potential for long-term environmental damage has been either under-analyzed or downplayed in the supporting documentation, according to the CWC study.

“This plan would eliminate 4 billion gallons of municipal wastewater from cities and some unincorporated, developed areas of the County but at the expense of polluting a much larger source of drinking water. This doesn’t translate into a sound “recycling” policy. It is bad math -- and bad science,” said Dr. Fred Corson, chairman of the Clean Water Coalition, whose member organizations funded the analysis.

“The project’s origins pre-date our current understanding of pharmaceutical contamination,” said Dr. Corson, referring to plans hatched in the mid-’90s by some well-intentioned environmentalists and grape-growers. “But with today’s knowledge, NSCARP has become an ill-advised plan. We are very concerned that the environmental impact statement supporting NSCARP fails to take into consideration the nature of local soils. Our study shows them to be simply unsuitable for irrigation with this wastewater,” said Dr. Corson.

“Recycling wastewater with advanced treatment to make it suitable for local re-potability would make more sense for more Sonoma and Marin County citizens than pumping contaminated wastewater around the County for irrigation,” added Dr. Corson.

Dangers to infants and nursing mothers

The study found that contamination of groundwater from wastewater irrigation would be cumulative – eventually reaching twice the concentration of the contaminants in the original wastewater.

Local drinking water wells could become polluted with concentrations of “regulated contaminants” -- nitrate and total dissolved solids -- exceeding legal limits within 20 years. These impacts to wells would significantly violate non-degradation policies at State and Federal levels. Nitrate concentration in groundwater could reach 150% of the Maximum Contaminant Level (MCL).

According to the Environmental Protection Agency, “infants below the age of six months who drink water containing nitrate in excess of the MCL (10 mg/L) could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and Blue Baby Syndrome.” Pregnant women and nursing mothers also should not drink water which exceeds the nitrate MCL.

Total Dissolved Solids (TDS) – the sum of all inorganic and organic particulate matter – in groundwater would exceed both recommended and enforceable drinking water standards.

Since groundwater eventually flows into the Russian River, river water downstream from the agricultural areas could also become contaminated in measurable concentrations, especially during periods of low flow, according to the study.

How contaminants in wastewater get into drinking water

The link between irrigation with reclaimed wastewater and the appearance of pharmaceuticals and other hydrocarbons in drinking water has recently received increased public exposure and scrutiny.

Prescription and over-the-counter medications get into sewage when excreted from the body. Most wastewater treatment plants cannot remove these pharmaceuticals without advanced treatment methods such as Reverse Osmosis filtration. SCWA does not use advanced treatment prior to discharging wastewater.

When wastewater is used for irrigation, some of it percolates through the soil into the groundwater. So do the contaminants dissolved in the wastewater. Leaky reservoirs storing wastewater also contaminate the groundwater.

The US Geologic Society (USGS) has found increasing concentrations of pharmaceuticals in soil irrigated with wastewater from urban sewage treatment plants,ⁱ and the Associated Press reported in March, 2008 that tests of municipal drinking water around the country found anti-depressants, birth control medication, anti-convulsants, antihistamines, antibiotics and over-the-counter medications such as ibuprofen (Advil®) and naproxen sodium (Aleve®) in many water systems.ⁱⁱ

Scientists are increasingly concerned that long-term exposure to random mixes of trace amounts of pharmaceuticals that transfer from wastewater to drinking water supplies can have effects on human cells even in small concentrations. Impacts on fish and other wildlife have already been documented.

Impact on the North County aquifer

The Russian River Basin aquifer under the three wine-growing valley floors is especially vulnerable to pollution from surface irrigation because its water table is just tens of feet beneath the soil surface in places, and the soil itself is sandy loam or alluvial; the highly permeable gravel would not remove metals or contaminants to the degree assumed by the project's advocates.

This groundwater resource already in storage under these North County valleys water is 3 times bigger in volume than Lake Sonoma. It is largely untapped and is expected to one day quench much of the County's thirst for continued growth. It is also a current drinking water source for about 20,000 north county residents, businesses, and wineries.

Full Hydrogeologic Study Is Online

The full CWC hydrogeologic study can be reviewed on the Clean Water Coalition's website, www.cwcnorthernsonoma.com

About the Study

CWC members were concerned that the level of analysis in the NSCARP draft EIR/EIS was insufficient to fully evaluate the threat to drinking water. The Coalition retained Dr. Nick Johnson, a state-certified hydrogeologist and registered geologist, to perform an independent study of potential impacts. Dr. Johnson has a PhD in Earth Sciences and 27 years of experience. He was selected for this project in consultation with Dr. Henry Vaux, Jr., Professor Emeritus in Resource Economics at the University of California Berkeley and Associate Vice President for Agriculture and Natural Resources Emeritus with the University of California System.

Notes for Editors:

ⁱ **USGS Research**

The outcomes predicted by the CWC study are in line with recent research conducted by US Geological Survey (USGS) scientists. In a study published in the journal *Environmental Toxicology and Chemistry*, USGS reported that pharmaceuticals in wastewater used for irrigation persisted in soil for several months after the irrigation stopped for the season, and increased in concentration during the study period. USGS concludes that the potential for effects on groundwater and streams are of particular concern.

http://toxics.usgs.gov/highlights/pharm_soils/index.html

ⁱⁱ **Drug contamination is a growing national concern (AP)**

In March 2008, the Associated Press reported the results of a five-month probe into the incidence of pharmaceuticals in drinking water supplies. According to AP, *"for several decades, federal environmental officials and nonprofit watchdog environmental groups have focused on regulated contaminants - pesticides, lead, PCBs - which are present in higher concentrations and clearly pose a health risk. However, some experts say medications may pose a unique danger because, unlike most pollutants, they were crafted to act on the human body. "These are chemicals that are designed to have very specific effects at very low concentrations. That's what pharmaceuticals do. So when they get out to the environment, it should not be a shock to people that they have effects," says zoologist John Sumpter at Brunel University in London, who has studied trace hormones, heart medicine and other drugs. And while drugs are tested to be safe for humans, the timeframe is usually over a matter of months, not a lifetime. Pharmaceuticals also can produce side effects and interact with other drugs at normal medical doses. "*