



Role of Regional Board in Groundwater Protection and Evaluation of WEI Study of the Impact of Septic Systems in Cherry Valley

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November 13, 2008



Regional Board Duties/Powers

- Adopt Regional Water Quality Control Plans
 - Includes designation of discharge prohibition areas
- Adopt Waste Discharge Requirements
- Adopt Enforcement Orders
 - Cease and Desist Orders
 - Cleanup and Abatement Orders



Programs in Groundwater Protection

- Basin Planning – establish BU and water quality objectives for groundwater basins; adopt Waste Discharge Prohibitions and other implementation plans
- Permitting – issue or deny permits for groundwater recharge projects and for new septic systems applications
- Groundwater cleanups, UST, Landfills



Waste Discharge Prohibitions

- **Section 13243 of the California Water Code states that a Regional Board**
“...may specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted.”



Prohibitions Applying to Subsurface Leaching Percolation Systems

- Grand Terrace (CSA 70, Improvement Zone H);
- Yucaipa-Calimesa (Yucaipa Valley County Water District);
- Lytle Creek above 2600 foot elevation;
- Mill Creek above 2600 foot elevation;
- Bear Valley (includes Baldwin Lake Drainage Area);
- Homeland-Green Acres area and Romoland areas;
- Quail Valley



Prohibition Compliance Dates

- Grand Terrace: February 1, 1988
- Yucaipa-Calimesa – February 1, 1988
- Lytle Creek – July 1, 1978
- Mill Creek - July 1, 1978
- Bear Valley – July 1, 1980
- Homeland-Green Acres – July 1, 1990
- Romoland – July 1, 1990
- Quail Valley, August 20, 2007



Beaumont Groundwater Management Zone

- Cherry Valley is located within the Beaumont Groundwater Management Zone
- Beneficial Uses of Beaumont GW MZ
 - Municipal and Domestic Supply (MUN)
 - Agricultural Supply (AG)
 - Industrial Service Supply (IND)
 - Industrial Process Supply (PROC)



Water Quality Objectives for the Beaumont Groundwater Management Zone

Groundwater Management Zone	Water Quality Objective (mg/L)	
	TDS	NO ₃ -N
Beaumont “maximum benefit”	330	5.0
Beaumont “antidegradation”	230	1.5



Draft Report by Wildermuth Environmental Inc. (WEI) (August 2006)

- Detected high concentrations of nitrate in some wells in Beaumont Management Zone;
- Tracer study detected PPCPs in some wells;
- Multiple lines of evidence suggest that the septic systems are the sources of nitrate.



Regional Board Staff Response

- **RB staff reviewed the draft report and conducted field visit of the wells sampled**
- **RB staff requested modeling analysis from WEI to further evaluate the spatial and temporal extent of the impact of septic systems on entire Beaumont Basin**
- **RB staff and WEI staff presented to Regional Board on October 13, 2006. Regional Board directed staff to work closely with Riverside County DEH staff**
- **RB staff supported the decision made by Riverside County Board of Supervisors to establish a moratorium for new septic tanks**



Final Report by WEI (March 2007) - Conclusion

- **OSWDS are the source of elevated nitrate in groundwater**
- **Nitrate-contaminated groundwater could eventually impact all BCVWD and Banning production wells**
- **Left unmitigated, OSWDS discharges are sufficient to cause nitrate concentrations to exceed basin plan objectives**
- **Build-out to 4,900 lots will require local well-head treatment**
- **Build-out to 8,800 lots could render entire BMZ non-potable**



RB Staff Response to the March 2007 Final Report

- RB staff reviewed the final report and found it to be credible
- Water quality issues identified in the report are an important concern
- RB staff requested additional model run to evaluate the impact of septic systems considering Riverside County's moratorium

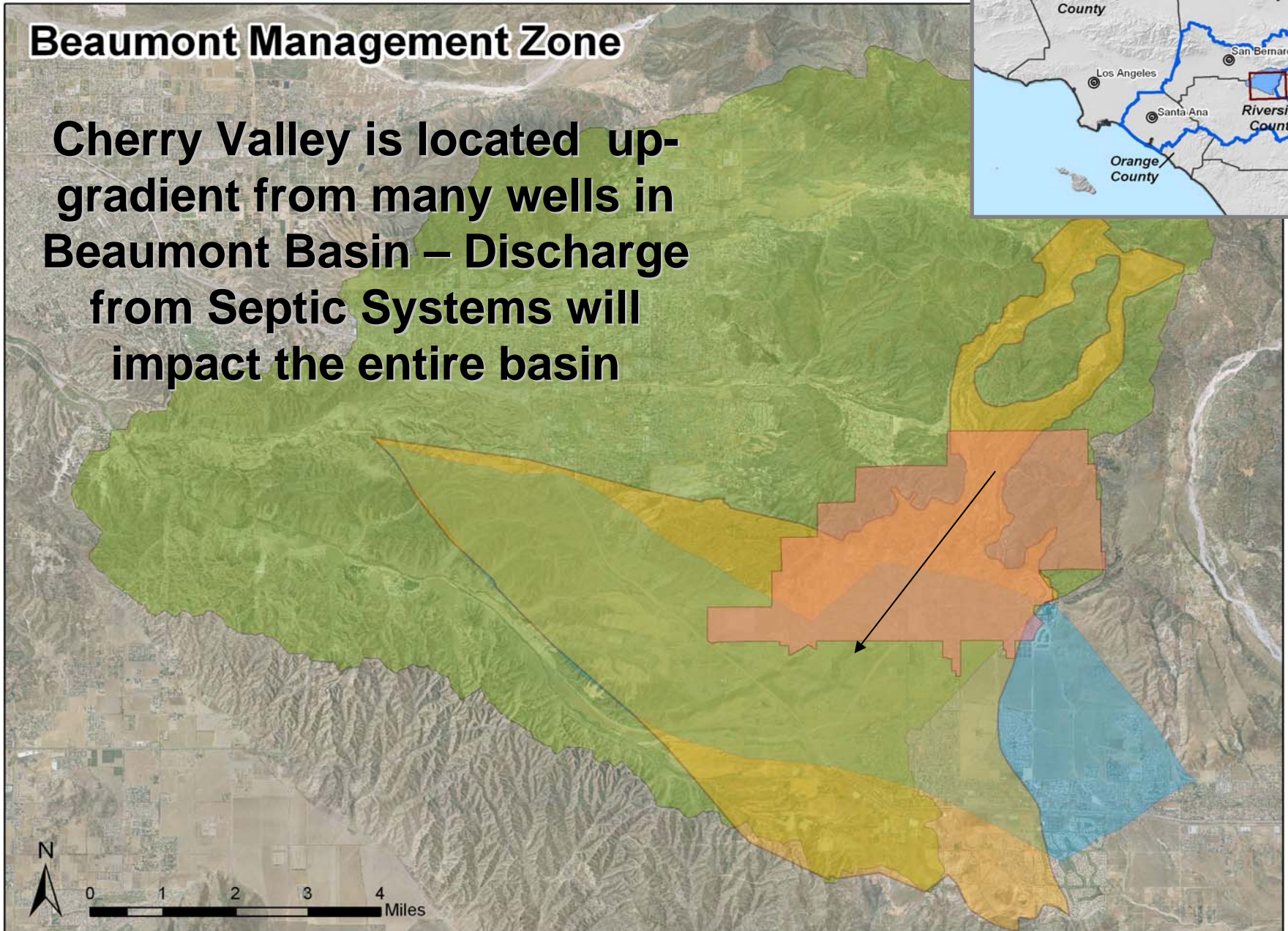


Basis of Board Staff's Support of the WEI Report (March 2007)

- WEI report employed analytical methods that have been published and proven valid by other researchers
- Laboratories are reputable and experienced in the analytical methods
- Conclusions are logical and well supported by multiple lines of evidence

Beaumont Management Zone

Cherry Valley is located up-gradient from many wells in Beaumont Basin – Discharge from Septic Systems will impact the entire basin



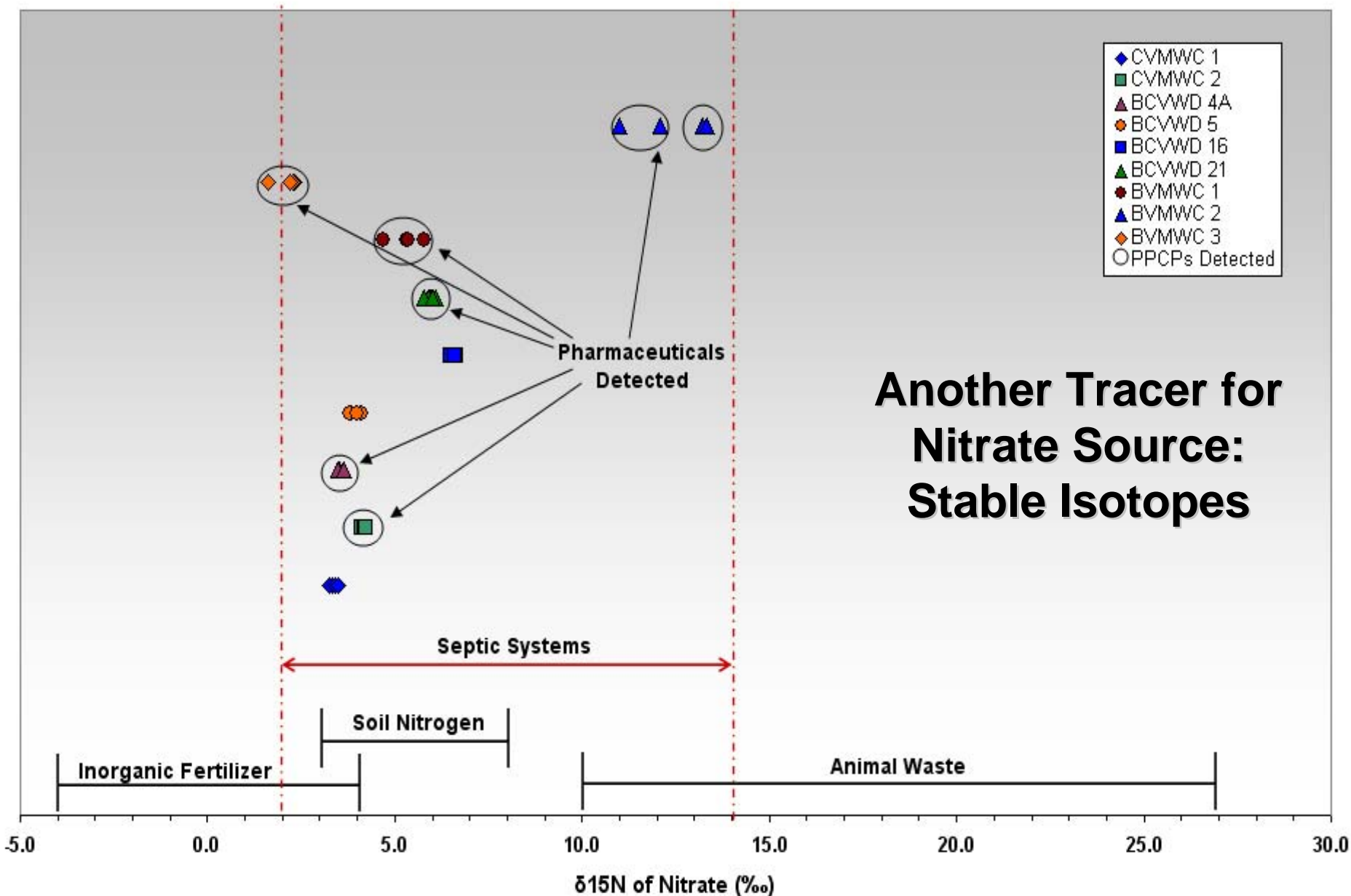


Pharmaceuticals and Personal Care Products - Tracers for Human Waste Discharge

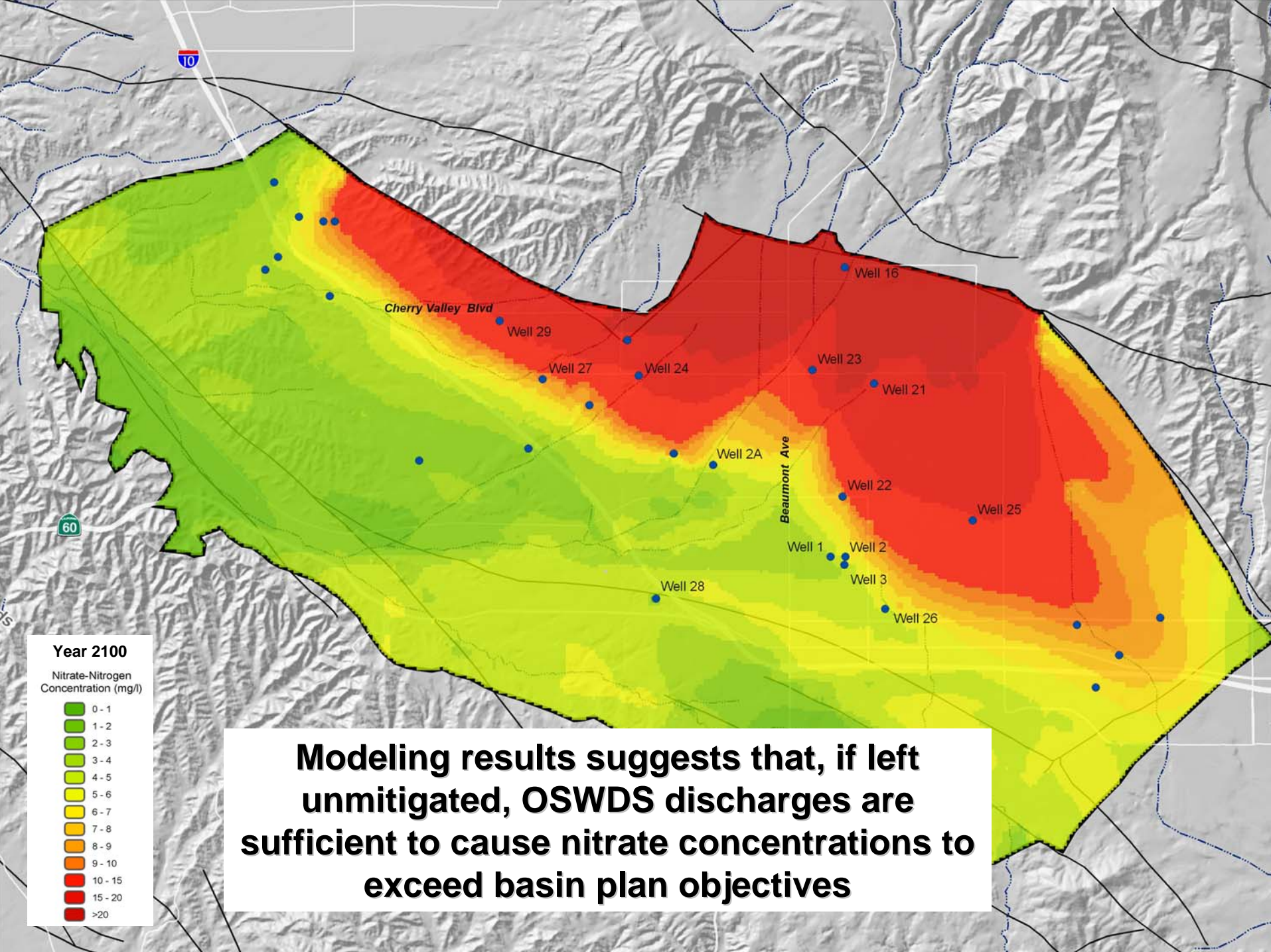
6 of 14 PPCPs detected:

- Sulfamethoxazole - antibiotic (3 wells)
- Acetaminophen - Tylenol (1 well)
- Ibuprofen - Advil/Motrin (3 wells)
- Estradiol, progesterone, testosterone - variety of male and female hormones (4 wells)

Results of Nitrogen Isotope Analysis

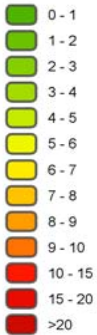


Another Tracer for Nitrate Source: Stable Isotopes



Year 2100

Nitrate-Nitrogen
Concentration (mg/l)



Modeling results suggests that, if left unmitigated, OSWDS discharges are sufficient to cause nitrate concentrations to exceed basin plan objectives



Conclusion

- There is substantial evidence that water quality in Beaumont GW MZ has been impacted by the septic systems in Cherry Valley
- If the modeling analysis, supported by appropriate sampling work, proves that the moratorium of new septic systems is not protective of water quality in Beaumont GW MZ, it is likely that additional, more stringent regulatory actions (e.g., Waste Discharge Prohibition) may be necessary



Conclusion, Cont'd.

- **Both the County and the Regional Board have public trust responsibilities to protect water quality and downstream water users in Beaumont Basin**
- **Regional Board appreciates the County leadership in addressing this matter and will support the County, as necessary.**