King County

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Testimony of Patricia Magnuson, King County, Washington, before the U.S. House of Representatives, Domestic Policy Subcommittee of the Oversight and Government Reform Committee, at its hearing on *Assessing State and Local Regulations to Reduce Dental Mercury Emissions*, held July 8, 2008.

Mr. Chairman and members of the Subcommittee, my name is Patricia Magnuson and I am an Industrial Waste Investigator for King County's Department of Natural Resources and Parks, based in Seattle, Washington. King County operates the major wastewater treatment system for the metropolitan Seattle area, including two large wastewater treatment plants with total average flows of 200 million gallons per day. We discharge treated effluent into Puget Sound, a sensitive marine waterway. One-hundred percent of the residual solids from our treatment plants, known as biosolids, are reused beneficially in wheat and hop fields in Eastern Washington, on forest lands in the Cascade Mountains, and in a composted product available for landscaping. We control sources of contaminants into our system by means of our industrial pretreatment program and extensive work with small businesses and households.

Toxic metals, including mercury, don't go away or get magically "treated" in wastewater treatment plants; rather, they either settle out into the solids or are discharged in the water effluent. Most mercury that enters our system ends up in the biosolids. Even though our biosolids currently meet all federal and state regulations for mercury, our concerns for future marketability of these solids drives our efforts to continuously make them cleaner. The potential for more stringent mercury limits in the future is also of concern.

Under an agreement with the Seattle-King County Dental Society, we conducted an extensive, collaborative program from 1995 through 2000 to promote voluntary compliance. We encouraged purchase and installation of amalgam separator units, which research showed would allow dentists to meet King County's local mercury limit. The results after six years were that 24 dental offices, out of approximately 900, installed amalgam separators.

In 2001 King County, in consultation with the local dental society, decided that the voluntary program had failed and notified local dentists that they would be required to meet our local discharge limit of 0.2 milligrams per liter (or parts per million) total mercury. Using our existing authority, we gave them the choice of installing separators or applying for a permit and proving they meet our limits without a separator. We gave them two years to meet compliance – until July 1, 2003.

We provided extensive outreach to the dental offices, including technical assistance site visits by staff from Public Health–Seattle & King County to every office in the county. We provided monetary incentives via vouchers reimbursed at 50 percent of costs up to $500. We worked closely with the local dental society as they held trade fairs and technical workshops. Local dentists did not fight this requirement but rather sought practical information about purchasing separators and got on with the task. After the compliance date approximately 750 additional dental offices (more than 85 percent) had installed amalgam separator units, with the remaining offices quickly following suit by the end of 2003. In 2004, 97 percent of the dental offices in our service area were in compliance with our regulations.

Since 2003, we continue to perform outreach to the dental community through letters and the dental office Internet pages. Compliance rates are determined through on-going inspections and by monitoring the amount of mercury in the biosolids.

In conclusion:

- Mercury is best controlled at the dental office, not at the wastewater treatment plant. Control at the source is the best way to manage such toxic metals.
- A voluntary program did not result in significant change in King County. Once separators were mandated, compliance happened quickly, dramatically, and with little resistance.
- Amalgam separator units are effective at removing 95 percent of mercury; they are readily available, low tech, reasonably priced, and easily installed and maintained.
- Partially as a result of this initiative, mercury levels in King County biosolids have dropped by 50 percent. This represents approximately 75 pounds of mercury that are kept out of our biosolids each year.
- The attached slides illustrate King County's experiences:
    1. Slide one graphically demonstrates the number of amalgam separator units sold in our county during the voluntary phase from 1995 through 2000, and the two year transition period to the dental offices being required to be in compliance, during which each dental office received technical visits by Seattle–King County Public Health inspectors informing them of the regulations and assisting as needed.
    2. Slide two provides an interesting look at two different areas within King County that received the technical assistant visits from the public health inspectors. The chart on the left is the number of amalgam separator units installed within our sewer service area, which takes in a portion of western King County, primarily the urban areas of Seattle and surrounding cities. This is where our pretreatment regulations apply and compliance is mandatory. The chart on the right includes all other dentists in King County's eastern and southern regions. These dentists are in areas served by other sewer districts or are on septic systems. Our regulations do not apply to these dentists. All the dentists received the same technical assistance visits by the public health inspectors, including receiving copies of our dental office

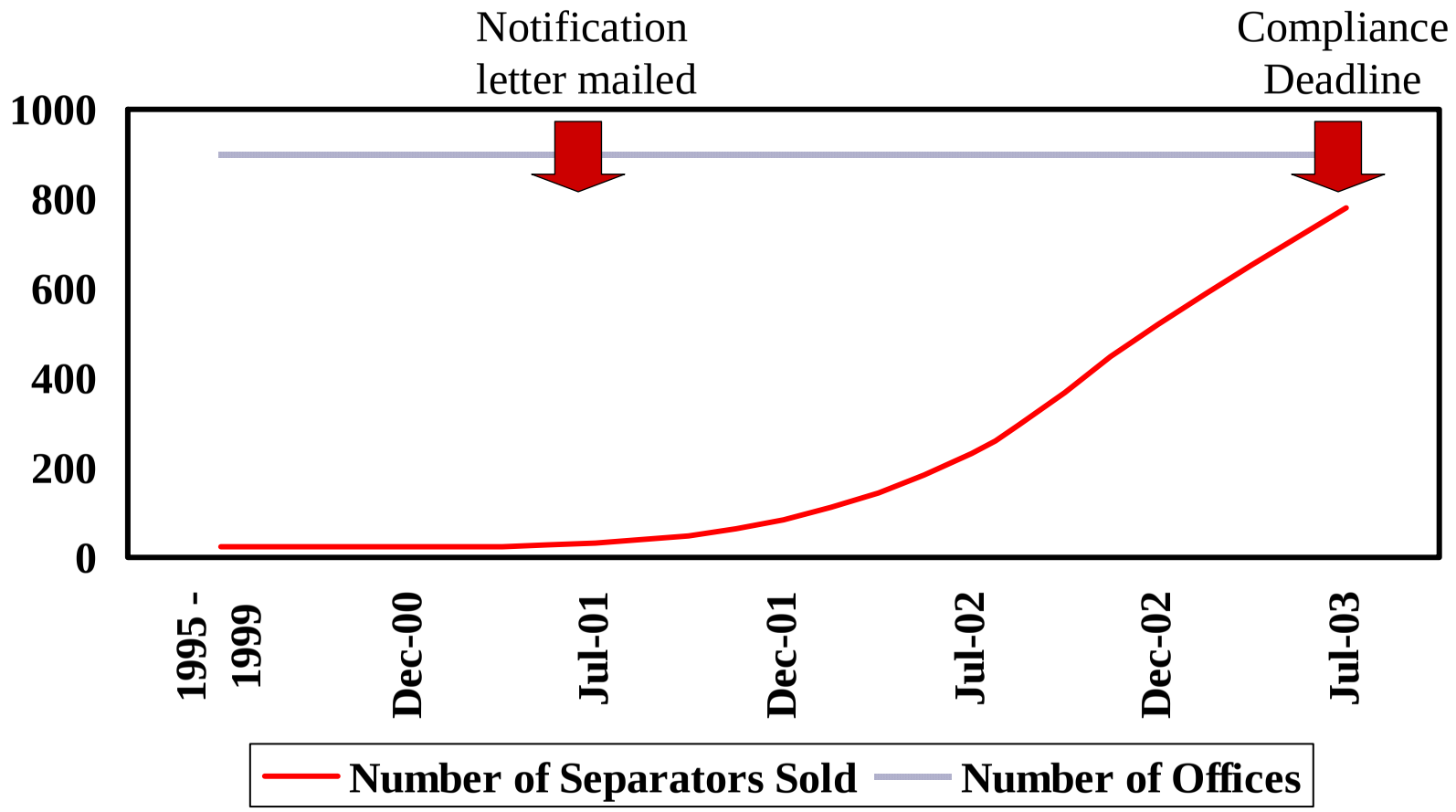
fact sheet. The dentists outside our service area, however, did not receive our initial mailing informing them of the new requirements. They were generally told the installation of amalgam separator units was desirable, but not mandatory. You can see the difference in installation rates – 93 per cent where mandatory versus 44 per cent where voluntary.

3. Slide three presents the annual median concentration of mercury in our biosolids from 2000, the last year prior to our initiation of the visits and notification of the requirements, to 2004, the first full year after compliance became mandatory. The concentration of mercury declined about 50 percent and has remained at that point for the last few years.

Finally, I would like to close by saying that we were able to work the local dental community and citizens of our county, using existing regulations, to develop a relatively low cost method of achieving measurable reductions of mercury in our biosolids. Other communities have found that different approaches have better met their particular needs. Local communities need to have the flexibility to address this issue in a manner that will work best for them.

Thank you for the opportunity to testify today. I would be happy to answer any questions from the committee members.

Amalgam Separator Sales Data



Source: Sales data supplied by manufacturers of ASUs

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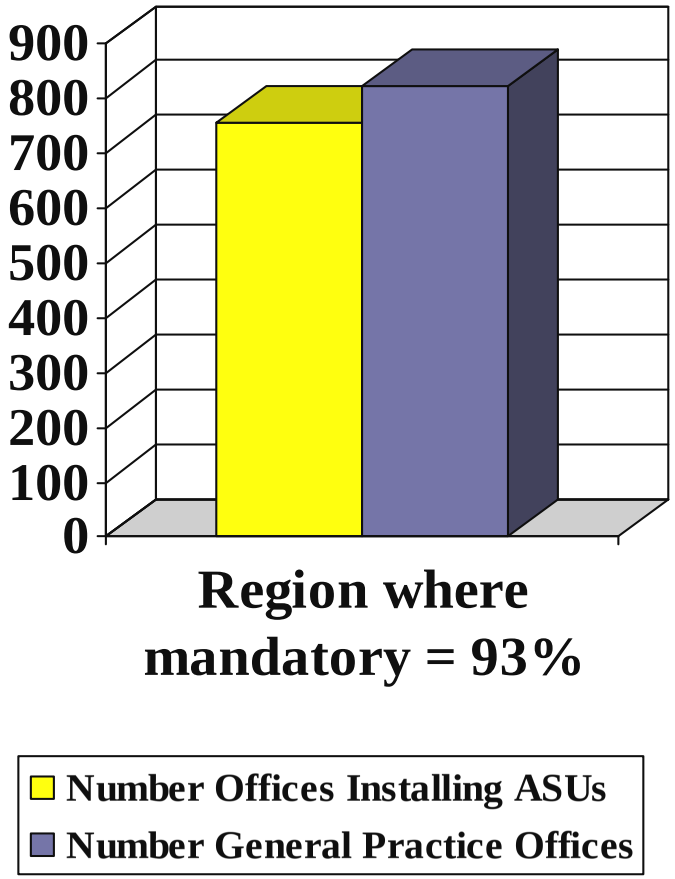
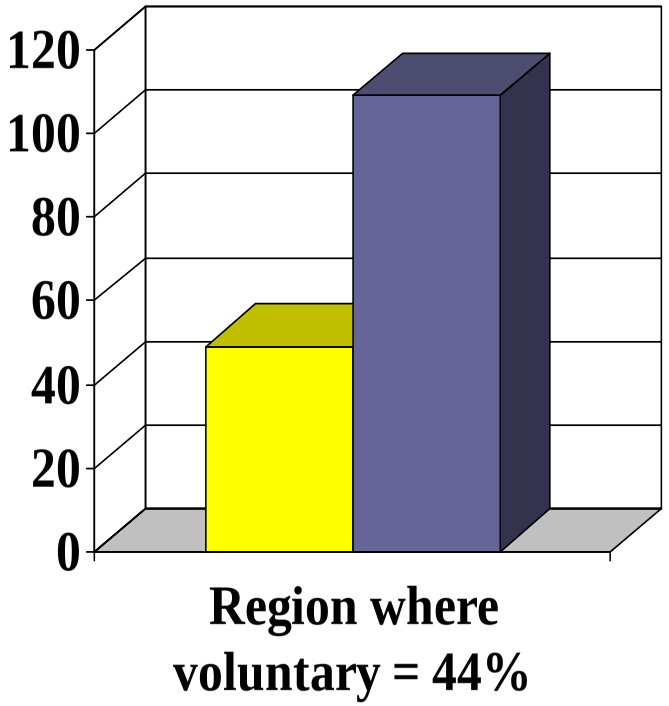
Differences In ASU Installation Rates Within King County – December 2003





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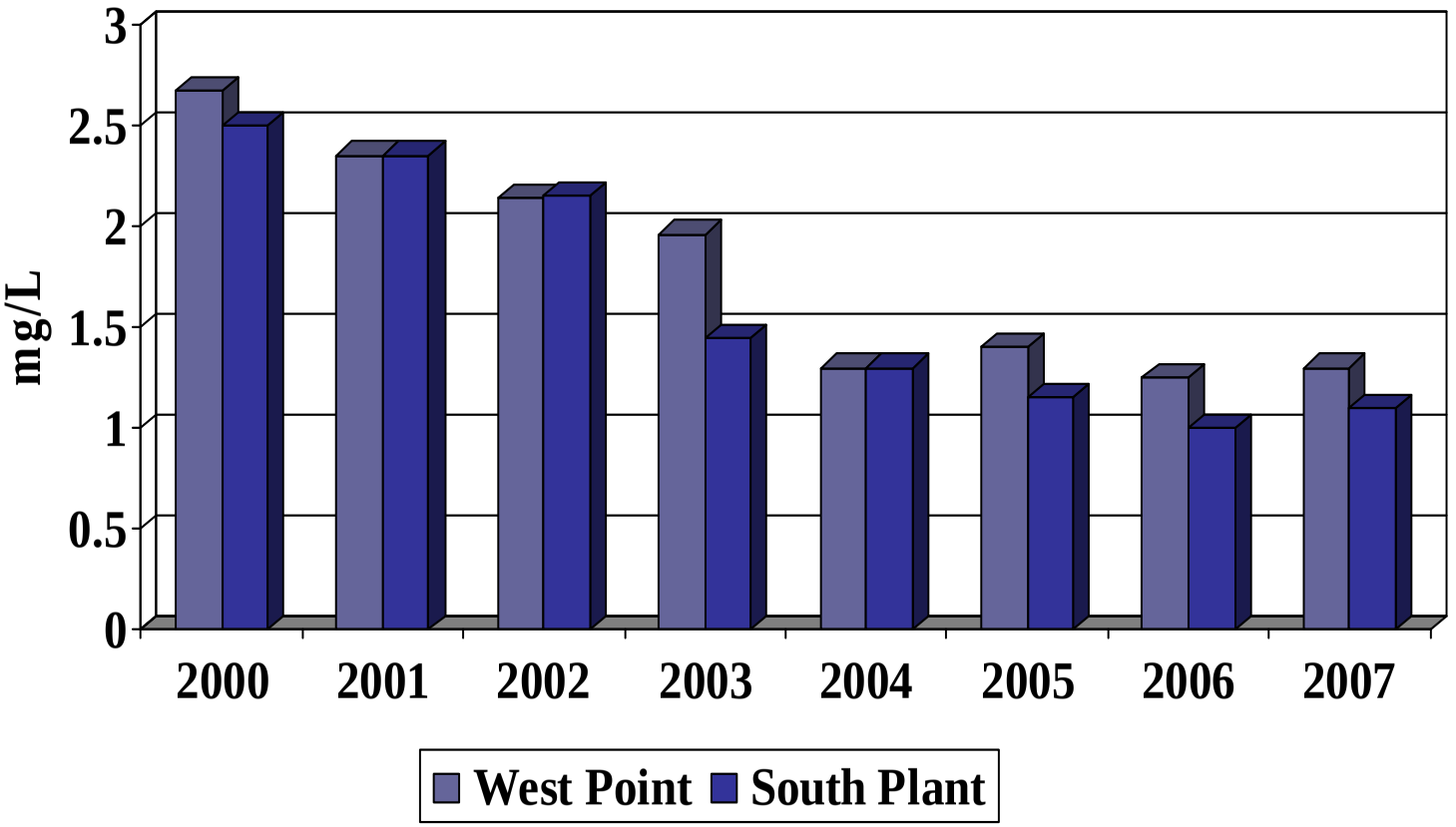
Annual Median Mercury Concentration in Biosolids



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