STATEMENT

OF

OWEN BOYD

FORMER CEO OF SOLMETEX, INC.

BEFORE THE

DOMESTIC POLICY SUBCOMMITTEE

OVERSIGHT AND GOVERNMENT REFORM COMMITTEE

Tuesday, JULY 8TH, 2008

2154 Rayburn HOB

2:00 p.m.

"***Assessing State and Local Regulations to Reduce Dental Mercury Emissions"***

Good afternoon, Mr. Chairman and members of the Subcommittee. I am Owen Boyd, founder and past CEO of SolmeteX, Inc. ("SolmeteX"). SolmeteX was formed as a company to migrate technology used in biopharmaceutical separations to treat water that was either consumed, processed or discharged. As early as 1992, the biopharmaceutical separation technology was orders of magnitude more effective at concentrating molecules than the sorbent technology used for water treatment. In fact, most water treatment sorbents do not magically remove toxins from water; they concentrate them onto a substrate as water comes into contact with them so that the net affect is to lower the concentration in the outgoing water stream. In effect, the better the ability to concentrate toxins onto a sorbent, the more efficient the technology. Although many technology hurdles had to be overcome, SometeX successfully migrated advanced affinity chromatography type separation methods into water treatment. The first sorbent we developed targeted mercury and its success in mitigating mercury issues from wastewater discharge from clinical laboratories, hospital effluents, industrial wet scrubber discharge and industrial discharge earned the company an EPA Innovator award.

INTRODUCTION

First of all, I have a very keen interest in seeing action taken to ensure dental discharges are filtered through amalgam separators. I am a manufacturer of an amalgam separator and personally profit by their sales. For that reason, I will try my best not to give you my opinions, philosophies or beliefs. I will stick to the data. I will focus my statement, as best I can, to three specific areas.

1. the impact of amalgam separator use on POTW's both on mercury concentration in sludge and on waste water discharge

2. the cost of use of amalgam separators
3. the impact of mandatory regulation versus voluntary action.

IMPACT OF AMALGAM SEPARATORS ON POTW MERCURY SLUDGE & WASTEWATER

It should be noted before I present some documented results illustrating the efficacy of amalgam separators in their ability to reduce the amount of mercury discharged from dental clinics that amalgam separator is a term used to describe a filtration device applied in a dental setting. These devices are known to use four method of filtration; mechanical, sedimentation, chemical and centrifugal. The most common separators generally use two main principles of filtration; mechanical filtration and sedimentation. These two methods of filtration have been used for over a century to reduce particles, both light and heavy, in water. They are proven. They are still widely used today. They are two principles of filtration that particularly lend themselves to the filtration of amalgam particles as amalgam is primarily comprised of mercury, copper and zinc. Those heavy metal particles will settle rapidly in low flow and are easily mechanically filterable in rapid flow due to their size. The use of these filtration techniques in a device used to filter/settle amalgam particles out of dental wastes is called by the industry "amalgam separation". However, using these same techniques to remove heavy metals in any other industry is called "heavy metal removal".

There have been many studies documenting the reduction of mercury received by POTW's as a result of the use of amalgam separators. For example, The Paris Commission (PARCOM) in their Recommendation 93/2 cited information received from Belgium, Finland, France, Germany, Iceland, Netherlands, Norway, Spain, Sweden, Switzerland and the UK and stated "the discharge of dental amalgam into municipal sewerage systems has been significantly reduced by the use of separation equipment in recent years, in most cases by at least 95%".

In Toronto, Ontario the 5th largest city in North America a 58% reduction of mercury in biosolids was recognized when an estimated 73% of dental clinics had complied with separator regulations. Biosolid mercury concentrations were reduced from 17 kg/mo (37 lbs) to 7 kg/mo (15 lbs). Additionally, a 13% reduction of mercury in WWTP wastewater was measured.

In Minnesota, two POTW's (Hastings and Cottage Grove) mercury in biosolids were reduced 44% and 29% respectively in three months.

The U.S. Navy, after installing separators, reduced the number of Notice of Violations (NOV) from 54 to 3 while documenting a 52% decrease in POTW biosolids.

In Duluth, Minnesota the mercury concentration in biosolids was reported reduced from 2.5 mg/kg to 0.19mg/kg. Additionally, they further reported a WWTP effluent decrease from 20.6 ng/liter to 1.9 ng/liter.

In Seattle, King County the installation of amalgam separators reduced the amount of mercury received per year from 74 pounds (year 2000) to 38 pounds (year 2004).

The Strategic Envirotech Partnership of the Executive Office of Environmental Affairs of the Commonwealth of Massachusetts tested three amalgam separators at dental clinics in an effort to show particle removal efficiency as compared static testing. The results showed particle removal efficiencies of 99.85%, 98.94% and 99.74% at the sites which were less than a 1% variance from static tests.

COST OF USE OF AMALGAM SEPARATORS

Although I am familiar with my competition and their equipment costs as well as maintenance costs, I will discuss only the costs associated with the SolmeteX product line. There are three models that are used by dental clinics based on the number of operatories. The most common is our standard Hg5® which is sold to dentists at $750 per unit. This specific unit will effectively manage the discharge of between 1 – 10 operatories which coincidentally represents over 98% of our dental market sales. As such, I will focus my cost analysis on this product as it most representative of the dental market.

The system is delivered with a collection chamber that is intended to be replaced every 6 – 12 months depending on the level of patient activity within the dental clinic. This collection chamber, when replacement time occurs, is replaced at a cost of $285 which includes a new collection chamber, packaging for the return of the old container, postage for transportation to a recycling facility, recycling of the spent collection chamber and recycling verification reporting. The historical recycling frequency experienced by SolmeteX per dental clinic from 2001 to 2008 is 0.8 collection chambers per year. This number is derived from our actual sale of replacement collection chambers life to date versus entire Hg5 systems. In an effort to be conservative when estimating annual operating costs for the entire dental community, the analysis below assumes 1.0 collection chambers per dental clinic per year.

There are approximately 120,000 dental clinics in the United States that replace amalgam fillings. Thus the following can be calculated:

1. Capital costs of equipment acquisition = 120,000 dental clinics multiplied by $750 per Hg5 unit = $90,000,000.
2. Installation Cost estimated at $250/Hg5 unit multiplied by 120,000 clinics = $30,000,000
3. Annual operating costs = 120,000 dental clinics multiplied by $285.00 = $34,200,000
4. Change out time @ five minutes = @ $25/hr = $2.08 annually/clinic multiplied by 120,000 clinics = $250,000 annual labor costs

In summary, the cost for the SolmeteX Hg5 amalgam separator:

	Entire Market	**Dental Clinic**
Equipment and Installation (1 time cost) =	$120,000,000	$ 1,000.00
Annual Maintenance Cost =	$ 34,450,000	$ 287.08

The above estimates are presented as a worse case scenario as they do not take into account discounts usually given by our distributors. Installation costs may vary either higher or lower than the amount used in this analysis based on site conditions, but is representative of an average installation. Amalgam separation equipment can be depreciated over five years which would serve to place the first five year cost at $487.08 and $287.08 thereafter.

REGULATIONS – MANDATORY VERSUS VOLUNTARY

SolmeteX has been actively selling amalgam separators since 2001 and has kept very detailed records regarding sales into specific States and Countries for strategic marketing purposes. Historically, the SolmeteX system sales have been dramatically driven by mandatory regulations. Interestingly, the sale of the amalgam separators is not only affected by the fact that a regulation has been put in place, but is also affected by the deadline date indicated in the regulation. I will present this data during this part of my statement. We have seen some voluntary efforts impact sales as well but never to the extent of a regulation. Some voluntary programs, like that in Massachusetts, were a collaborative effort by the Massachusetts Dental Society (MDS) and the Executive Office of Environmental Affairs (EOEA) initiated in 2001 and implemented in 2004. The MDS actively supported and pursued the dental community to install amalgam separators. The EOEA made it clear that if 50% of the dental clinics had not installed a system, they would invoke regulations.

Here is how the historical sales occurred in Massachusetts in number of units:

	2001	2002	2003	2004	2005	2006	2007
MA Unit Sales	161(*)	16	32	1,042	328	341	126

(*) SolmeteX sold units at cost to introduce the Hg5 program

As is evident, the impact of the MDS work along with the initiative of EOEA drove sales in 2004. A similar scale up of sales could be seen in Maine where regulations were implemented in January 2003 with an implementation deadline of June 1, 2004.

Here is how the historical sales occurred in Maine in number of units:

	2001	2002	2003	2004	2005	2006	2007
ME Unit Sales	0	1	26	237	26	8	5

We keep detailed records of sales of amalgam separators by State and year for all 50 U.S. States. Each State unit sales in placed into one of three major categories. They are:

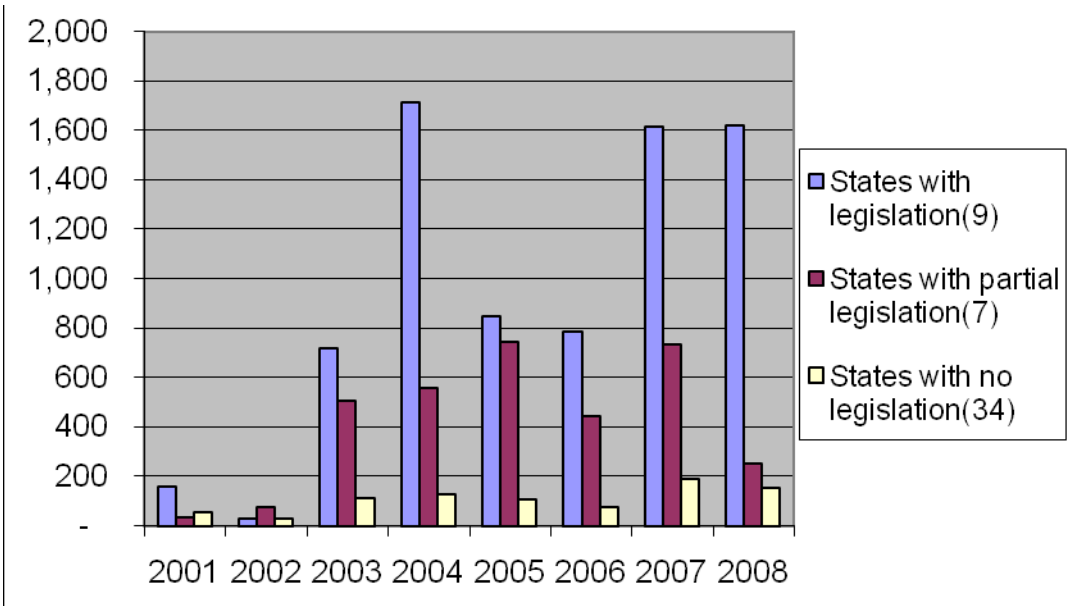
1. States with Regulations
2. States with Partial Regulations
3. States with no Regulations

States with partial regulations are States where local sewer districts have mandated amalgam separators for a specific discharge area. This has occurred in California, Kansas, Colorado, Michigan,

Minnesota, Washington and Wisconsin. By charting the three categories it is evident that the impact of mandatory regulations is significant. As matter of fact, SolmeteX life to date sales is as follows:

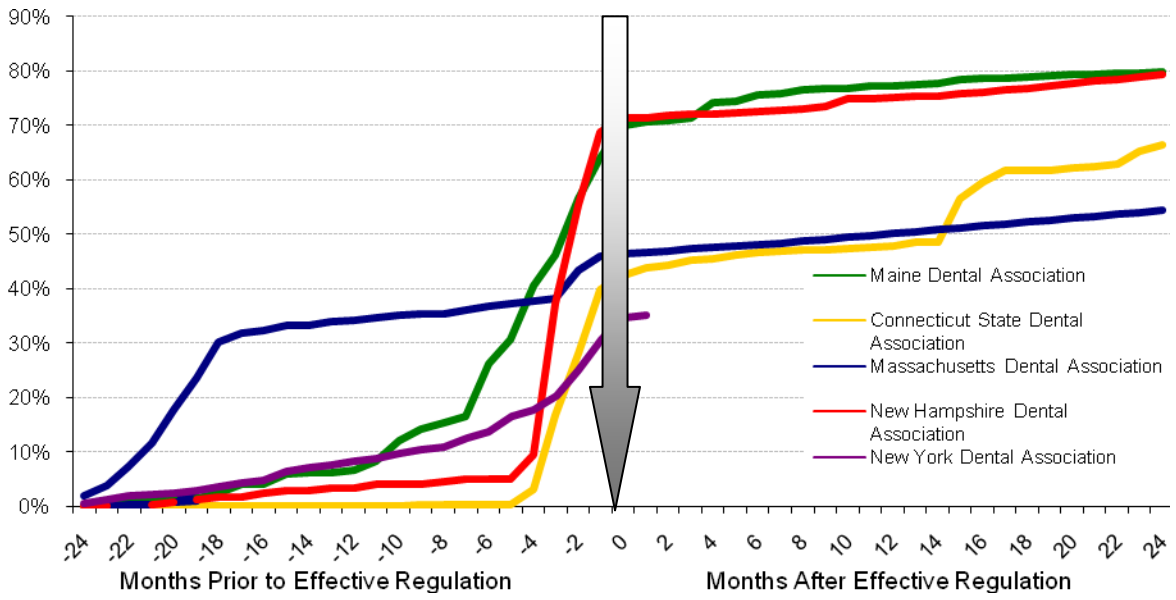
Units sold to States with Statewide Regulations	7,508
Units sold to partially regulated States	3,368
Units sold to States with no regulations	867

2001-2008 Sales Analysis



Once regulations are threatened, our data indicates a slow ramp up of sales. Once a regulation is passed the ramp up of unit sales accelerates. When a regulatory deadline draws near, Hg5 unit sales peak. After the deadline passes, sales level off. The “bump” in Connecticut coincides with a follow-up letter by the Connecticut DEP requesting installation date, manufacturer and amalgam separator serial numbers be submitted by all dentists.

Deadline Date



The above chart is actual sales data for five regulated States in which SolmeteX Hg5 products were sold. The "Y" axis is percent of sales within each represented State and as such is an excellent indicator of what percent of our total sales within that State occurred near a deadline.

SUMMARY

In summary, the data presented illustrates the following:

1. Amalgam separation is technology used in dental clinics that enhances the particle filtration over current mechanical filters being used and has been proven to be effective at removing substantial quantities of mercury from dental discharges.
2. The installation of amalgam separators in areas served by POTW's has been shown through several studies to significantly reduce the amount of mercury in sewage sludge and in some studies reduce WWTP discharge water.
3. The cost to install the Hg5 amalgam separator in all dental clinics (approximately 120,000 clinics) is near $150,000,000 and the operating costs are near $34,500,000.
4. SolmeteX unit sales are dramatically impacted by regulations and sales in non-regulated States are minimal.

Thank you for your time. If you have any questions or comments I will take them now.