Comparison of water-treatment options for arsenic reduction in household water systems

Water treatment for a SINGLE TAP Point-of-use (POU) systems					
Method	**Type of arsenic removed**	**Advantages**	**Disadvantages**	**Estimated costs***	
				Initial	**Maintenance**
Adsorptive Media (POU)	Can remove As(3) and As(5), but, capacity to remove As(3) is lower. Pretreatment is usually recommended.	Produces very little wastewater. Spent media is non-hazardous and disposable. Simple to install and operate.	The media can be expensive, especially without using additional pretreatment .	$300 – $700	$300 - $500 every 6 months - 1 year
Reverse Osmosis (POU)	Removes about 95% As(5) and 50-60% As(3). Pretreatment is usually recommended.	Requires little maintenance.	For each gallon of treated water, creates about 7-9 gallons of "reject" water.	$300 – $1,500	$100 -$200 every 1-2 years
Distillation (POU)	Removes both As(5) and As(3). Pretreatment is not required.	Simple to install and operate.	Slow process; uses a lot of electricity.	$300 - $1,200	-
Water treatment for the WHOLE HOUSE Point-of-entry (POE) systems					
Method	**Type of arsenic removed**	**Advantages**	**Disadvantages**	**Estimated costs***	
				Initial	**Maintenance**
Adsorptive Media (POE)	Can remove As(3) and As(5), but capacity to remove As(3) is lower Pretreatment is usually recommended.	Produces very little wastewater. Spent media is non-hazardous and disposable. Simple to install and operate.	The media can be expensive, especially without using additional pretreatment .	$2,400 - $4,500	$700 -$900 per year
Reverse Osmosis (POE)	Removes about 95% As(5) and 50-60% As(3). Pretreatment is usually recommended.	Requires little maintenance.	For each gallon of treated water, creates about 0.5 - 1 gallon of "reject" water.	$5,000 – $12,000	$250 -$500 every 1-2 years
Anion Exchange (POE)	Removes only As(5). Pretreatment is required to remove As(3).	Operation is similar to a water softener.	Requires careful maintenance to avoid an abrupt increase in arsenic in treated water. Produces waste water with elevated arsenic.	$1,800 - $2,500	$700 – $900 every 8-10 years