

# Independent Lead & VOC Removal Study

**Date: June 1st, 2018**

**Method:** The conducted test study was performed to evaluate the provided purifier units' filtration efficacy as per the client requested and laboratory developed protocol. The protocol represents a challenge that is adapted from protocol NSF 53 for low pH lead and VOC (chloroform) reduction efficacy. For the study, challenge water was continuously aspirated through the filters by peristaltic pump assembly at the indicated, maintained flowrates, with pressures not exceeding -3.00psi. After 3 gal were passed through each filter, effluent samples were collected in appropriate containers, and stabilized according to method. Lead concentration was determined by ICP-MS analysis, chloroform concentration was determined by P&T/GC-MS analysis. Prepared test water characteristics were measured as per laboratory's accredited ISO17025:2005 methodology.

Filter Description: Epic Water Filters - Urban Water Bottle Filter - EQ-YIGY-B00D

Analysis Used: For Lead, Inductive Coupled Plasma Mass Spectroscopy Analysis \* VOC P&T/GC-MS analysis; EPA 200.8

**Results:**

<b>Volatile Organic Compounds (Chloroform)</b>			
Filter Description	Influent Concentration in ppm	Effluent concentration in ppm	Average Percent Removal
Epic Water Filters Urban Bottle Filter	280	0.500	99.8%

<b>Lead 6.5 (Pb)</b>			
Filter Description	Influent Concentration in ppm	Effluent concentration in ppm	Average Percent Removal
Epic Water Filters Urban Bottle Filter	151.94	0.317	99.8%

<b>Organic Chemicals Included by Surrogate Testing</b>			
Chemical	Drinking Water Regulatory Level (MCL/MAC) mg/L	Influent Challenge Concentration mg/L	Chemical Reduction %
Alachlor	0.0002	0.050	>98
Atrazine	0.003	0.100	>97
Benzene	0.005	0.081	>99
Carbofuran	0.04	0.190	>99
Carbon Tetrachloride	0.005	0.078	98
Chlorobenzene	0.1	0.077	>99
Chloropicrin	-	0.015	99
2,4-D	0.07	0.110	98
Dibromochloropropane (DBCP)	0.0002	0.052	>99
o-dichlorobenzene	0.6	0.080	>99
p-dichlorobenzene	0.075	0.040	>98
1,2 - dichloroethane	0.005	0.088	95
1,1 - dichloroethylene	0.007	0.083	>99
cis-1,2 - dichloroethylene	0.07	0.170	>99
Trans- 1,2 -Dichloroethylene	0.1	0.086	>99

1,2 -Dichloropropane	0.005	0.080	>99
cis-1,3 - Dichloropropylene	-	0.079	>99
Dinoseb	0.007	0.170	99
Endrin	0.002	0.053	99
Ethylbenzene	0.7	0.088	>99
Ethylene Dibromide (EDB)	0.00005	0.044	>99
Haloacetonitriles	-	0.022	98
Haloketones (HK)	-	0.0072	99
Heptachlor (H-34, Heptox)	0.0004	0.025	>99
Heptachlor Epoxide	0.0002	0.0107	98
Hexachlorobutadiene	-	0.044	>98
Hexachlorocyclopentadiene	0.05	0.060	>99
Lindane	0.0002	0.055	>99
Methoxychlor	0.04	0.050	>99
Pentachlorophenol	0.001	0.096	>99
Simzine	0.004	0.120	>97
Styrene	0.1	0.150	>99
1,1,2,2 - Tetrachloroethane	-	0.081	>99
Tetrachloroethylene	0.005	0.081	>99
Toluene	1	0.078	>99
Silvex	0.05	0.270	99
Tribromoacetic Acid	-	0.042	>98
1,2,4 Trichlorobenzene	0.07	0.160	>99
1,1,1 Trichloroethane	0.2	0.084	95
1,1,2 Trichloroethane	0.005	0.15	>99
Trichloroethylene	0.005	0.180	>99
Trihalomethanes (TTHM)	0.080	0.300	95
Xylenes	10	0.070	>99

