eSpring Contaminant Reduction List

(Including Health Effects & Sources of Contamination)

#	Contaminant	CAS Number	% Reduced	Potential Health Effects from Ingestion of Water	Sources of Contaminant in Drinking Water
1	Acenaphthene	83-32-9	>99.7	Headache, fatigue, nausea; development of skin allergy; liver and kidney damage	Runoff/leaching from use as insecticide/fungicide
2	Acenaphthylene	208-96-8	>99.7	See Above	Dehydration of acenaphthene
3	Alachlor	15972-60-8	>95	Eye, liver, kidney or spleen problems; anemia; increased risk of cancer	Runoff from herbicide used on row crops
4	Aldicarb	116-06-3	99.8	Central nervous system and neurological problems	Runoff/leaching from soil treatment with insecticide
5	Aldrin	309-00-2	97.4	Increased risk of cancer	Runoff/leaching from soil treatment with insecticide
6	Alpha – BHC	319-84-6	>99.6	Liver and kidney damage; increased risk of cancer	Runoff/leaching from insecticide
7	Alpha – Endosulfan	959-98-8	97.1	Endocrine disruption	Runoff from insecticide used on food crops
8	Anthracene	120-12-7	>99.6	Skin damage, gastrointestinal tract; hematological and lymphoid systems problems	Release from dye manufacturing or wood preserving facilities; runoff from insecticide use
9	Asbestos	12001-29-5	>99	Skin damage; circulatory system problems; increased	Decay of asbestos cement in water mains; runoff from glass and electronics plant

				risk of benign intestinal polyps, lung disease and	wastes; wear/breakdown of asbestos- containing materials; erosion of natural
				cancer	deposits
10	Atenolol	29122-68-7	99%	Potential endocrine disrupting compound (EDC). Group of drugs called beta blockers that works by slowing down the heart and reducing its workload	Drinking water contaminated by pharmaceuticals is an emerging area of research. The levels that are being reported are in the parts per trillion (ppt) ranges but are still alarming to many people even though there is no reported health effects associated to any of the levels of pharmaceuticals reported.
11	Atrazine	1912-24-9	>90	Cardiovascular system problems; reproductive difficulties; increased risk of cancer	Runoff from herbicide used on row crops; leaching from wastewater at manufacturing sites
12	Benzene	71-43-2	>95	Anemia; decreased in blood platelets; increased risk of cancer	Discharge from factories; leaching from gas storage tanks and landfills
13	Benzidine	92-87-5	>99.6	Increased risk of urinary bladder and other cancers	Leaching from waste sites; breakdown of benzidine-based dyes (breakdown of 1, 2 diphenylhydrazine)
14	Benzo[k]fluoranthene	207-08-9	98.1	Increased risk of cancer	Leaching from waste sites of manufactured gas facilities; product of incomplete combustion of fossil fuel, organic matter, garbage
15	Benzo[a]anthracene	56-55-3	>99.3	Increased risk of cancer	Leaching from waste sites of manufactured gas facilities; product of

					incomplete combustion of fossil fuel, organic matter, garbage
16	Benzo[a]pyrene	50-32-8	92.5	Reproductive difficulties; skin changes; increased risk of cancer	Leaching from linings of water storage tanks and distribution lines
17	Benzo[b]fluoranthene	205-98-2	98.7	Increased risk of cancer	Release from dye manufacturing or wood preserving facilities; product of incomplete combustion of fossil fuel, organic matter, garbage
18	Benzo[g,h,i]-perylene	191-24-2	91.0	Possible skin, liver, and related tissue problems	Product of incomplete combustion of fossil fuel, organic matter, garbage
19	Beta-BHC	319-85-7	>99.6	Liver and kidney problems; increased risk of cancer	Runoff/leaching from insecticide
20	Beta-Endosulfan	33213-65-9	97.5	Endocrine disruption	Runoff from insecticide used on food crops
21	Bis(2-Chloroethoxy) methane	111-91-1	>99.3	Skin and eye irritations	Discharge from rubber manufacturing plants
22	Bis(2-chloroethyl) ether (BCEE)	111-44-4	>99.0	Irritation and problems with skin, eyes, throat and lungs; increased risk of cancer	Discharge from textile factories, pesticide manufacturing and industrial chemical factories
23	Bis(2-chloroisopropyl) ether	108-60-1	>98.3	Increased risk of cancer	Discharge from dye, pharmaceutical and industrial chemical factories
24	Bis(2-ethyl-hexyl) phthalate	117-81-7	99.0	Developmental, liver and gastrointestinal problems; increased risk of cancer	Discharge during production of PVC and vinyl chloride resins
25	Bisphenol A (BPA)	80-05-7	99.1		A chemical compound used as a plasticizer

26	Bromochloroacetonitrile	83463-62-1	>98.2	Suspected carcinogen	Byproduct of drinking water disinfection
27	Bromodichloromethane – see Trihalomethanes (TTHM's)				
28	Bromoform – see Trihalomethanes (TTHM's)				
29	4-Bromophenyl phenyl ether	101-55-3	>99.1		Leaching from waste sites
30	Butyl benzyl phthalate	85-68-7	>99.4	Reproductive and developmental problems; increased risk of cancer	Release from PVC manufacturing facilities; leaching from waste sites
31	Carbamazepine	298-46-4	>98.3		An anti-convulsant and mood-stabilizing drug
32	Carbaryl	63-25-2	>98.3	Cholinesterase inhibition causing headaches, memory loss, muscle weakness and cramps; liver and kidney problems	Leaching from soil treated with insecticide
33	Carbofuran	1563-66-2	>95	Problems with blood or nervous system; reproductive difficulties	Leaching from soil fumigant used on rice and alfalfa
34	Carbon tetrachloride	56-23-5	>95	Liver problems; increased risk of cancer	Discharge from chemical plants and other industrial activities
35	Chlordane	57-74-9	>95	Liver or nervous system problems; increased risk of cancer	Residue from banned termiticide

36	Chlorobenzene	108-90-7	>95	Liver or kidney problems	Discharge from chemical and agricultural factories
37	Chlorodibromomethane – see Trihalomethanes (TTHM's)				
38	2-chloroethyl vinyl ether	110-75-8	>99.9		Release during manufacture of pharmaceuticals
39	Chloroform – see Trihalomethanes (TTHM's) or VOC's		>95	Suspected carcinogen	
40	4-Chloro-3-methylphenol	59-50-7	>99.1	Lung and skin problems	By-product of water chlorination treatment; discharge from waste waters at manufacturing facilities
41	2-chloronaphthalene	91-58-7	94	Used in solvent, wood preservatives, immersion oil for testing refractive index and as additives in cable insulation, engine oil, electroplating compounds and capacitors. They are used in producing dyes.	Toxic Pollutants
42	2-Chlorophenol	95-57-8	>98.1	Reproductive and developmental problems; liver and kidney damage; increased risk of cancer	Leaching from treated wood; release from manufacturing facilities
43	4-Chlorophenyl phenyl ether	7005-72-3	>99.1		

44	Chloropicrin	76-06-2	>99.2	Toxicity to humans, including carcinogenicity, reproductive and developmental toxicity, neurotoxicity and acute toxicity	Runoff from use as pesticide and byproduct of drinking water disinfection
45	Chlorpyrifos	2921-88-2	>99.9	Cholinesterase inhibition causing nausea, dizziness, and confusion; nervous system problems	Runoff from home insecticide use on cockroaches, fleas and termites or from farm use to control ticks on cattle and crop pests
46	Chrysene	218-01-9	>97.8	Increased risk of cancer	Pollution of dust particles formed when garbage, gasoline, or animal and plant materials are burned
47	cis-1, 2-Dichloroethylene	156-59-2	>99	Kidney and liver damage; nervous and hematological system problems	Discharge from industrial chemical factories
48	cis-1, 3-Dichloropropylene	10061-01-5	>99	Bladder and kidney damage	Leaching from soil treated with nematocide; leaching from hazardous waste sites and production facilities
49	2-4-D	94-75-7	>95	Kidney, liver and hematological system problems	Runoff from herbicide used on row crops
50	4, 4'-DDD	72-54-8	97	Increased risk of cancer	Residue from banned pesticide; leaching from landfills or waste sites
51	Delta-BHC	319-86-8	>99.6	Liver and kidney problems	Runoff/leaching from insecticide
52	Dibenzo[a,h] anthracene	53-70-3	93.4	Increased risk of cancer	Leaching from waste sites of manufactured gas facilities; product of

					incomplete combustion of fossil fuel, organic matter and garbage
53	Dibromoacetonitrile	3252-43-5	>99.2	Suspected carcinogen	Byproduct of drinking water disinfection
54	4, 4'-Dibromo-1, 1-biphenyl	92-86-4	95.7	Weight loss, skin disorders, liver, kidney, thyroid gland and nervous and immune system problems; increased risk of cancer	Leaching from landfills and waste waters from fire retardant and plastics manufacturing facilities
55	Dibromochloropropane (DBCP)	96-12-8	>95	Reproductive difficulties; kidney damage; increased risk of cancer	Runoff/leaching from use as a nematocide for soil fumigant
56	Dichloracetonitrile	3018-12-0	>98.4	Suspected carcinogen	Byproduct of drinking water disinfection
57	o-Dichlorobenzene	95-50-1	>95	Liver, kidney or circulatory system problems	Discharge from industrial chemical factories
58	1, 3-Dichlorobenzene	541-73-1	>99.8	Liver and kidney damage	Discharge from industrial chemical factories
59	p-Dichlorobenzene	106-46-7	>98	Anemia; liver, kidney or spleen damage; changes in blood	Discharge from industrial chemical factories
60	3, 3'-Dichlorobenzidine	91-94-1	>99.6	Dermatitis; increased risk of cancer	Discharge from industrial chemical factories
61	1, 2-Dichloroethane	107-06-2	95	Increased risk of cancer	Discharge from industrial chemical factories
62	1, 1-Dichloroethylene	540-59-0	>99	Liver damage	Discharge from industrial chemical factories

63	2, 4-Dichlorophenol	120-83-2	>98.7	Liver and kidney damage; nervous and immune system effects	Discharge from pesticide manufacturing factories
64	1, 2-Dichloropropane	78-87-5	>99	Increased risk of cancer	Discharge from industrial chemical factories
65	1, 1-Dichloropropanone	513-88-2	>98	Suspected carcinogen	Byproduct of drinking water disinfection
66	Dieldrin	60-57-1	99.7	Increased risk of cancer	Runoff/leaching from soil treatment with insecticide
67	Diesel Fuel				
68	N,N-Diethyl-meta- toluamide (DEET)	134-62-3	>98.5		A pesticide and common active ingredient in insect repellents
69	Diethyl phthalate	84-66-2	>99.7		Leaching from plastics during use and from waste sites and landfills containing discharge plastics
70	2, 4-Dimethyl phenol	105-67-9	>98.7	Liver and kidney damage; hematological and nervous system problems	Discharge from industrial chemical and petroleum factories
71	Dimethyl phthalate	131-11-3	>99.8	Reproductive problems; kidney damage	Discharge from industrial chemical factories
72	Di-n-butyl phthalate	84-74-2	>99.6	Possible reproductive problems (when large quantities are ingested)	Discharge from industrial chemical factories
73	4, 6-Dinitro-2-methyl phenol	534-52-1	>99.3	Central nervous system and cardiovascular problems; cataracts; skin irritations; kidney and liver damage	Discharge from industrial chemical factories; leaching from landfills and use as a pesticide

74	2, 4-Dinitrophenol	51285	>99.3	Nausea, vomiting, sweating, dizziness, headache, loss of weight	Pesticide runoff to water and from releases to the air from manufacturing plants
75	2, 4-Dinitrotoluene	121-14-2	>94.3	Hematological and nervous system effects; increased risk of cancer	Discharge from industrial chemical factories and manufacturing processes such as polyurethane, ammunition and dyes
76	2, 6-Dinitrotoluene	606-20-2	>95.1	See above	See above
77	Di-n-octyl phthalate (DNOP)	117-84-0	>98.8	Possible liver damage	Release during manufacturing; leaching from plastic during use or in landfills
78	Dinoseb (DNBP)	88-55-7	99	Reproductive difficulties	Runoff from herbicides used on soybeans and vegetables
79	1, 2-Diphenylhydrazine	122-66-7	>99.0	Increased risk of cancer	Leaching from waste sites
80	Ethinyl Estradiol (17-alpha ethynyl estradiol) or EE2	77538-56-8	98	Potential endocrine disrupting compound (EDC)	Component of combined oral contraceptives
81	Endosulfan sulfate	1031-07-8	95.4	Liver, kidney and reproductive damage; endocrine disruption	Breakdown of alpha and beta endosulfan isomers
82	Endrin	72-20-8	>95	Liver problems; nervous system effects	Residue of banned insecticide
83	Endrin aldehyde	7421-93-4	>99.0		Breakdown of endrin
84	Estrone	53-16-7	>96.9		A prescription birth control drug in the pharmaceutical drug category
85	Ethylbenzene	100-41-4	>95	Liver and kidney damage	Discharge from petroleum refineries

86	Ethylene dibromide	106-93-4	>95	Problems with liver, stomach, reproductive system and kidneys; increased risk of cancer	Discharge from petroleum refineries
87	Flouranthene	206-44-0	>98.2	Liver and kidney damage; increased risk of cancer	Release from dye, pharmaceutical, and agrochemical manufacturing facilities
88	Fluorene	86-73-7	>99.7	Hematological effects	Release from dye, pesticide, thermoset plastic and pharmaceutical manufacturing facilities
89	gamma-BHC (Lindane)	58-89-9	>95	Liver and kidney damage; increased risk of cancer	Runoff/leaching from insecticide
90	Gasoline				
91	Guthion	86-50-0	>99.9	Nervous system problems; personality changes	Runoff/leaching from insecticide
92	Heptachlor	76-44-8	>95	Liver and central nervous system damage; increased risk of cancer	Residue from banned termiticide
93	Heptachlor epoxide	1024-57-3	>95	Liver damage; increased risk of cancer	Breakdown of heptachlor
94	Hexachlorobenzene	118-74-1	>98.8	Liver and kidney damage; reproductive difficulties; benign tumors of endocrine glands; increased risk of cancer	Discharge from metal refineries and agricultural chemical factories
95	Hexachlorobutadiene	87-68-3	>98	Kidney and liver damage; increased risk of cancer	Discharge from industrial chemical factories

96	Hexachlorocyclopentadiene	77-47-4	>99	Kidney and stomach damage	Discharge from chemical factories; runoff from pesticide use
97	Hexachloroethane	67-72-1	>96.6	Liver and kidney damage; increased risk of cancer	Reaction of certain carbon compounds with chlorine; incineration of chlorinated hydrocarbons; runoff from insecticide use
	Hydrocarbons	n/a	>91.3		Gasoline, kerosene, diesel fuel ground contamination
98	lbuprofen	15687-27-1	95.1		An over-the-counter pain reliever and anti- inflammatory medication and considered a pharmaceutical contaminant
99	Isophorone	78-59-1	>98.4	Kidney damage; possible reproductive problems	Discharge from chemical factories
100	Kerosene				
101	Lead at pH 6.5/8.5	7439-92-1	>95	Infants and children: delays in physical or mental development Adults: Kidney problems; high blood pressure	Corrosion of household plumbing systems; erosion of natural deposits
102	Linuron	330-55-2	>96.2		An herbicide often used in the control of grasses and weeds
103	Malathion	121-75-5	>99.0	Nervous system problems	Runoff from insecticide use on farms and in gardens
104	Meprobamate	57-53-4	>95.2		Compound found in anti-anxiety drugs
105	Mercury at pH 6.5/8.5	7439-97-6	>90	Kidney damage	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and cropland

106	Methoxychlor	72-43-5	>95	Liver, kidney and heart tissue damage; reproductive difficulties	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
107	Metolachlor	51218-45-2	>98.5		An organic compound that is widely used as an herbicide
108	Microcystin	n/a	99.2	Liver damage, increased risk of cancer	Most common toxin detected in unsafe levels in drinking water when harmful algal blooms happen
109	MTBE (Methyl-tert-butyl- ether)	1634-04-4	>95	Effects taste and odor of water, suspected carcinogen	Leaking underground and above ground fuel storage tanks, pipelines, refueling spills, automobile accidents damaging the fuel tank, consumer disposal of "old" gasoline, emissions from older marine engines, and to a lesser degree, storm water runoff, and precipitation mixed with MTBE in the air
110	MX (Mutagen X)	77439-76-0	96.0	Increased risk of cancer	
111	Naphthalene	91-20-3	>99.7	Hematological problems; increased risk of cancer	Runoff from use as fumigant (moth repellent); discharge from industrial chemical factories
112	Naproxen	22204-53-1	>97.0		An over-the-counter pain reliever and anti- inflammatory medication considered a pharmaceutical contaminant
113	Nitrobenzene	98-95-3	>98.5	Liver and kidney damage; reproductive problems; increased risk of cancer	Release in emissions and wastewater during its manufacture, processing and uses as a solvent

114	2-Nitrophenol	88-75-5	>99.5	Liver and kidney damage; nervous system problems	Discharge from chemical factories during manufacturing; breakdown of pesticides
115	4-Nitrophenol	100-02-7	>99.8	Lung and nervous system problems	Discharge from chemical factories during manufacturing; runoff from use as fungicide; breakdown of pesticides
116	N-Nitroso-di-n-propylamine	621-64-7	>99.2	Increased risk of cancer	Leaching from waste sites and use as a weed killer
117	N-Nitroso-diphenylamine	86-30-6	>99.1	Increased risk of cancer	Leaching from waste sites
118	Nonyl phenol	25154-52-3	96.2		A collection of compounds often used as a precursor to commercial detergents
119	Parathion	56-38-2	>99.9	Hematological problems	Runoff from use as insecticide
120	PCB-1016	12674-11-2	>98.8	Skin changes; thymus gland problems; immune deficiencies; reproductive or nervous system difficulties; increased risk of cancer	Runoff from landfills; discharge of waste chemicals
121	PCB-1221	11104-28-2	>99.6	Skin changes; thymus gland problems; immune deficiencies; reproductive or nervous system difficulties; increased risk of cancer	Runoff from landfills; discharge of waste chemicals
122	PCB-1232	11141-16-5	>98.4	Skin changes; thymus gland problems; immune deficiencies; reproductive or nervous system difficulties; increased risk of cancer	Runoff from landfills; discharge of waste chemicals

123	PCB-1242	53469-21-9	>99.2	Skin changes; thymus gland problems; immune deficiencies; reproductive or nervous system difficulties; increased risk of cancer	Runoff from landfills; discharge of waste chemicals
124	PCB-1248	12672-29-6	>99.4	Skin changes; thymus gland problems; immune deficiencies; reproductive or nervous system difficulties; increased risk of cancer	Runoff from landfills; discharge of waste chemicals
125	PCB-1254	11097-69-1	>97.5	Skin changes; thymus gland problems; immune deficiencies; reproductive or nervous system difficulties; increased risk of cancer	Runoff from landfills; discharge of waste chemicals
126	PCB-1260 (Aroclor)	11096-82-5	>95	Skin changes; thymus gland problems; immune deficiencies; reproductive or nervous system difficulties; increased risk of cancer	Runoff from landfills; discharge of waste chemicals
127	Pentachlorophenol	87-86-5	>99	Liver or kidney problems; reproductive effects; increased risk of cancer	Discharge from wood preserving factories; residue from banned herbicide
128	Phenanthrene	85-01-8	>99.0	Increased risk of cancer	Discharge from petroleum refineries; leaching from waste sites; release from manufacturing insecticides, dyes and plastics

129	Phenol	108-95-2	>98.1	Diarrhea and digestive problems; skin discoloration and eruptions; developmental effects	Runoff from landfills and hazardous waste sites; discharge from plastic and phenol manufacturing plants
130	Phenytoin	57-41-0	>96.1		An anti-epileptic drug
131	Pyrene	129-00-0	>98.1	Kidney damage	Release from manufacturing insecticides, dyes and plastics
132	Radon	10043-92-2	>95	Increased risk of cancer	Erosion of natural deposits
133	Simazine	122-34-9	>95	Hematological problems	Herbicide runoff
134	Strychnine	60-41-3	>99.8	Kidney and brain damage	Runoff from use as pesticide
135	Styrene	100-42-5	>95	Liver, kidney, and circulatory problems	Discharge from rubber and plastic factories; leaching from landfills
136	2, 4, 5 TP (Silvex)	93-72-1	>95	Liver and kidney damage	Residue of banned herbicide
137	2, 3, 7, 8-Tetrachlorodi- benzo-para-dioxin (TCDD)	1746-01-6	>99.9	Reproductive difficulties; increased risk of cancer	Emission from waste incineration and other combustion; discharge from chemical factories
138	2, 3, 7, 8-Tetrachlorodi- benzofuran (TCDF)	51207-31-9	>99.9	Skin, respiratory and nervous system problems	Emission from waste incineration and other combustion; discharge from chemical factories
139	1, 1, 2, 2- Tetrachloroethane	79-34-5	>99	Increased risk of cancer	Residue form use as pesticide
140	Tetrachloroethylene	127-18-4	>95	Liver damage; increased risk of cancer	Discharge from factories and dry cleaners

141	Toluene	108-88-3	>95	Nervous system, kidney and liver problems	Discharge from petroleum refineries
142	Toxaphene	8001-35-2	>90	Kidney, liver, and thyroid problems; central nervous system effects; increased risk of cancer	Runoff/leaching from insecticide used on cotton and cattle
143	trans-1, 2-Dichloroethylene	156-60-5	>99	Liver damage	Discharge from industrial chemical factories
144	trans-1, 3-Dichloropropene	542-75-6	>99.9	Liver and kidney damage; increased risk of cancer	Runoff from use as pesticide
145	Tribromoacetic acid	75-96-7	>98	Increased risk of cancer	Byproduct of drinking water disinfection
146	Trichloroacetonitrile	545-06-2	>98.6	Increased risk of cancer	Byproduct of drinking water disinfection
147	1, 2, 4-Trichlorobenzene	120-82-1	>99	Changes in adrenal glands	Discharge from textile finishing factories
148	1, 1, 1-Trichloroethane	71-55-6	95	Liver, nervous system, and circulatory problems	Discharge from metal degreasing sites and other factories
149	1, 1, 2-Trichloroethane	79-00-5	>99	Liver, kidney, and immune system problems	Discharge from industrial chemical factories
150	Trichloroethylene	79-01-6	>95	Liver problems; increased risk of cancer; known carcinogen	Discharge from metal degreasing sites and other factories
151	2, 4, 6-Trichlorophenol	88-06-2	>98.7	Reproductive and developmental problems; liver and kidney damage; increased risk of cancer	Runoff from use in pesticides
152	1, 1, 1-Trichloropropanone	918-00-3	>95	Suspected carcinogen	Byproduct of drinking water disinfection

153	1, 2, 3-Trichloropropane	96-18-4			Industrial Solvent
	Trihalomethanes (TTHM's) includes: chloroform (surrogate chemical), bromoform, bromodichloromethane, chlorodibromomethane	n/a	>95	Liver, kidney, and central nervous system problems; increased risk of cancer	Byproduct of drinking water disinfection
154	Trimethoprim	738-70-5	>96.3		An antibiotic medication
155	Tris(2- carboxyethyl)phosphate (TCEP)	5961-85-3	>98.0		A chemical compound used as a flame retardant, plasticizer and viscosity regulator in various types of polymers including polyurethanes, polyester resins and polyacrylates
156	Tris(1,3-dichloro-2- propyl)phosphate (TCPP)	13674-87-8	>97.9		A chemical compound used as a flame retardant
157	Vinyl chloride	75-01-4	>93.9	Increased risk of cancer	Leaching from PVC pipes; discharge from plastic factories
	VOC's (volatile organic compounds) tested as chloroform	67-66-3	>95	Liver and kidney damage; increased risk of cancer	Chlorination byproduct; discharge from industrial chemical factories
	Xylenes (m-xylene o-xylene p-xylene)	1330-20-7	>99.8	Nervous system damage	Discharge from petroleum factories; discharge from chemical factories
158	m-xylene				
159	o-xylene				
160	p-xylene				

161	Particulates – Class I	>95	Aesthetic Compound
162	Taste, Odor and Chlorine	>95	Aesthetic Compound
163	Chloramine	>95	Aesthetic Compound