JAMES ROBERT DEAL ATTORNEY PLLC
4130 166th Place SW, Lynnwood, Washington 98037
Telephone 425-771-1110, Fax 425-776-8081
James@JamesDeal.com

#fluoridationisillegal
FLUORIDATION IS ILLEGAL
THE NEW FLUORIDATION LEVEL SHOULD BE ZERO
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To the National Governors' Association

Dear Governors:

In April 2015, the national Department of Health (DHHS) recommended a .7 ppm fluoridation level as 'optimal,' a reduction from a range of .7 ppm to 1.2 ppm. My state of Washington has proposed to blindly accepted that recommendation under WAC 246-290-460. Ostensibly, this reduction is to reduce the level of fluoride poisoning which per CDC records afflict 41% of children raised in communities with artificial water fluoridation.

Because fluoridation is illegal – and for many other reasons - the new level of fluoridation which may be added to or brought up to is zero. No fluoride should ever be added to drinking water.

See the proposed Department of Health rule here:
http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/RegulationandCompliance/RuleMaking

See the supporting document here:
http://www.doh.wa.gov/Portals/1/Documents/4200/FluorideSA.pdf

I will focus primarily on the fact that fluoridation is illegal. Fluoridation is illegal under Washington law and under the law of most states and several Canadian provinces and numerous countries.

I will also focus on the fact that fluoride leaches lead from plumbing, that fluoridation is ineffectual, and that it has harmful side effects.

WAC 246-290-220 is a typical fluoridation enabling law. It says that fluoridation may be done in Washington only with fluoridation materials which "**comply with**" the National Sanitation Foundation NSF Rule 60 standard. NSF 60 requires 1) that some 20 toxicological studies be done on drinking water additives and 2) that a risk estimation test must be done. The toxicological studies are not being done. The risk estimation tests are not being done, but it

is easy to calculate that the fluoridation materials would fail the risk estimation tests if they were done.

Fluoridation should stop until NSF or the suppliers produce their toxicological studies and they are approved by state boards of health and after proper risk estimation tests are done.

Supporters of fluoridation say that NSF 60 as revised, has waived the requirement that toxicological studies be done. This is not so for the reasons given below. Even if NSF has waived waives the requirement to do toxicological studies, it has not waived the risk estimation tests.

<u>This is a partial list of the toxicological studies which the 2009 version of NSF 60 says must be done</u>:

> "assays of genetic toxicity, acute toxicity …, short term toxicity …, subchronic toxicity …, reproductive toxicity, developmental toxicity, immunotoxicity, neurotoxicity, chronic toxicity (including carcinogenicity), and human data (clinical, epidemiological, or occupational) when available. To more fully understand the toxic potential of the substance, supplemental studies shall be reviewed, including, but not limited to, mode or mechanism of action, pharmacokinetics, pharmacodynamics, sensitization, endocrine disruption, and other endpoints, as well as studies using routes of exposure other than ingestion. Structure activity relationships, physical and chemical properties, and any other chemical specific information relevant to the risk assessment shall also be reviewed. …
>
> "A weight-of-evidence approach shall be employed in evaluating the results of the available toxicity data. This approach shall include considering the likelihood of hazard to human health and the conditions under which such hazard may be expressed. …
>
> "Toxicity testing requirements for the quantitative risk assessment procedure are defined in annex A, table A2. A minimum data set consisting of gene mutation assay, a chromosomal aberration assay, and a subchronic toxicity study shall be required for the performance of a quantitative risk assessment. …"

The evidence that these studies are not being done is strong. See page 67 of a deposition in which <u>NSF official Stan Hazen admits that the studies are not being done</u>.

Dr. David DeLong, director of the Washington Board of Health, does not deny my assertion that the toxicological studies are not being done. His response is that the studies are not required and are waived in the express language of NSF 60-2013, Section A.3.2, which says:

> "If a substance is regulated under the USEPA's National Primary Drinking Water Regulations and USEPA has finalized a Maximum Contaminant Level (MCL) or other means of regulation such as a treatment technique (see Annex A, Section A.2.18) no additional collection of toxicological data shall be required …"

For several reasons, Mr. DeLong's reasoning is clearly incorrect.

1) Mr. DeLong cut off the rest of the sentence. The full sentence says:

> "If a substance is regulated under the USEPA's National Primary Drinking Water Regulations and USEPA has finalized a Maximum Contaminant Level (MCL) or other means of regulation such as a treatment technique (see Annex A, Section A.2.18) no additional collection of toxicological data shall be required **prior to performance of the risk estimation** (see annex A, section A.6.1)." [emphasis added]

Even if the EPA has set an MCL for fluoride and for the other contaminants in the fluorosilicic acid mixture, and even if the toxicological studies have been waived, the risk estimation test in Section A.6.1 has not waived and must still be done. Fluoridation at .7 ppm fails the risk estimation test.

NSF 60 Section A.6.1 draws the two boxes below and uses it to illustrate the risk estimation test:

> "To calculate the SPAC [single product allowable concentration], an estimate of the number of potential sources of the substance from all products in the drinking water treatment and distribution system shall be determined. The SPAC shall be calculated as follows:

SPAC (mg/l) =	$\frac{\text{promulgated regulatory value (mg/l)}}{\text{estimated number of drinking water sources}}$

> "In the absence of specific data regarding the number of potential sources of the substance in the drinking water treatment and distribution system, the SPAC shall be calculated as 10% of the promulgated regulatory value.

NSF 60 Section A.6.1 is awkwardly worded. A better diagram of the calculation would look like this:

SPAC (mg/l) =	promulgated regulatory value (mg/l) / estimated # of drinking water sources (or other sources of fluoride)	X 10%

SPAC is defined in Section 2.16 as follows:

> "single product allowable concentration (SPAC): The maximum concentration of a contaminant in drinking water that a single product is allowed to contribute under annex A of this Standard.

According to the NSF 2008 Fluoride Fact Sheet, "The SPAC, as defined in NSF/ANSI Standard 60, is one tenth of the US EPA's MCL".

Let's do the math: The EPA MCL [maximum contaminant level] for fluoride is 4.0 ppm. Divide 4.0 ppm by the number of fluoride sources, which NSF assumes to be one. The result is 4.0 ppm. Then multiply 4.0 ppm by 10%. The result is .4 ppm. The current .7 ppm for fluoride is higher than .4 ppm. Thus, fluoridation at .7 ppm fails the risk estimation test. Therefore, fluoridation at .7 ppm does not "comply with" NSF 60.

Even if the toxicological studies are not done, fluoridation materials still do not "comply with" NSF 60.

2) And we are not done yet with the risk estimation test. Notice that the denominator in the above formula: "estimated number of drinking water sources". This should have been worded to say "estimated # of drinking water sources (or other sources of fluoride)". The denominator would be 1.0 ppm in a district with no other sources of fluoride in the human diet. However, if there are significant other sources of fluoride in the human diet, the denominator will get larger, and the SPAC or allowed level of fluoride to be added will get smaller.

When fluoridation began in 1945, there were few other sources of fluoride in most newly fluoridated water districts. Today there are now many other sources of fluoride besides the fluoride added to drinking water: foods made with tap water; coffee, tea, soft drinks, beer and other beverages made with fluoridated tap water; juices reconstituted with tap water; bottled water made from tap water; common fruits, grains, and dried bulk products sprayed with sulfuryl fluoride; the many fluorinated drugs such as Prozac; and finally fluoridated toothpaste, which is absorbed through mouth tissues and swallowed.

The Environmental Working Group notes, for example, that the EPA allows up to 900 ppm fluoride in dried eggs. One-third of all eggs are dried and then added to a wide range of food products.

Therefore, the denominator used to calculate the SPAC would be more than 1.0. Assuming that the fluoride from other sources doubles the fluoride added to drinking water then the formula to apply would be:

> SPAC (mg/l) = (promulgated regulatory value (mg/l)/ estimated number of drinking water sources) x 10%.

Filling in the numbers we have 4.0 ppm/2 x 10% = .2 ppm. Using the NSF 60 formula, the maximum fluoride that could be added would be .2 ppm. Again, the current .7 ppm fluoridation level violates the NSF 60 maximum.

3) The 4.0 ppm MCL is much too high. The NRC in its 2006 report stated clearly that the 4.0 ppm level was not protective and should be lowered. For this reason, fluoridation at .7 ppm is even more likely to fail the risk estimation test. Fluoride is of roughly the same toxicity as lead and arsenic, and the MCLs for them are 15 ppb and 10 ppb. The 4.0 ppm level was picked out of the air. There is no scientific explanation whatsoever for why this level of fluoride poisoning was set. According to one report South Carolina had drinking water which contained naturally occurring fluoride at slightly under 4.0 ppm, and

authorities there did not want to have to install expensive de-fluoridation equipment. So the MCL was set at 4.0 ppm.

4) Likewise, the 10% multiplier used in the NSF risk estimation test was picked out of the air. There is no scientific basis for presuming that adding a toxin at an arbitrary 10% of an arbitrary 4.0 ppm MCL is harmless.

5) The current text of A.2.3 includes a blanket waiver for doing toxicological studies for all additives or contaminants for which there is an EPA MCL. However, in the original 1988 edition of NSF 60 there was no such blanket waiver. It was in 1988 that the EPA was putting NSF into the fluoride certifying business. The original 1988 version of Section A.3.2 says:

APPENDIX A
TOXICOLOGY REVIEW AND EVALUATION PROCEDURES

> GENERAL: These product review and test guidelines are to assist in establishing the toxicity, if any, of the products under anticipated use conditions. **Prior to initiating new toxicity testing, the applicant is strongly encouraged to discuss information requirements and test protocols with the certifying agency. If an EPA Maximum Contaminant Level (MCL) is available, no new toxicity testing and evaluation** (Sections 2.0.6 and 2.0.7) **may be necessary, but a risk estimate (Maximum Allowable Level or MAL) must be calculated** per Appendix A, Section 3.0.

The current NSF 60 version, at least going back to the 2009 version (the next oldest one I have been able to find), says "**no additional collection of toxicological data shall be required …**". The NSF 60 1988 version says "**no new toxicity testing and evaluation may be necessary**".

The wording was changed at some point between the 1988 and 2009. There were NFS 60 versions published in the following years: 1996, 1997, 1999, 2000, 2001, 2002, 2003, 2004, 2005. I am searching for other versions, and I will send them to you if and when I locate them. The question is relevant, because when the date when NSF 60 was changed is compared to the date – 2000 – when Washington adopted its current version of WAC 246-290-220, it would indicate whether there was a time when Washington law was being violated.

See the NSF 60 1988 version at this link.

See the NSF 60 2009 version at this link.

> See the NSF 60 2013 version at this link.

The difference between "no new toxicity testing and evaluation **may be necessary**" and "no additional collection of toxicological data **shall be required** ..." is clear. Under the original version reliance on the EPA MCL to avoid toxicological testing was not automatic. It was a matter of good judgment. In the revised version of NSF 60 toxicological inquiry stops automatically if there is an EPA MCL.

The NSF 60 1988 version was in effect at least until 1996. It is not clear whether it was changed in 1996, 1997, 1999, 2000, 2001, 2002, 2003, 2004, or 2005.

Regarding WAC 246-290-220 there is a 2000 version which differs slightly from the current version. The 2000 version says "shall comply" instead of "must comply". It was authorized in WSR-99-07-021-1999 and says:

> Any treatment chemicals ... added to water intended for potable use **shall comply** with ANSI/NSF Standard 60. The maximum application dosage recommendation for the product certified by the ANSI/NSF standard 60 shall not be exceeded in practice.

Regarding WAC 246-290-220 the current version dates back to 2003. It says "must comply" instead of "shall comply":

> Any treatment chemicals ... added to water intended for potable use **must comply** with ANSI/NSF Standard 60. The maximum application dosage recommendation for the product certified by the ANSI/NSF standard 60 shall not be exceeded in practice.

The change from "shall" to "must" appears minor, however, it indicates that in changing WAC 246-290-220, the Board of Health was trying to make the waiver of toxicological studies more automatic and unconditional, and in effect never to be done for any additive or contaminant for which there was an EPA MCL.

It makes no sense for NSF 60 to say that 20 toxicological studies must be done but then to include a sentence which says they will, in effect, always be waived.

If the 1988 wording in NSF 60 was changed – "may" to "shall" – after the original version of WAC 246-290-220 was issued in 2000, there was a period during which there was no supposedly automatic waiver of the toxicological

tests, meaning the toxicological studies should have been done and NSF 60 was being violated between 1988 and 2000.

6) The 2009 version omits the previous sentence from the 1988 version:

> "Prior to initiating new toxicity testing, the applicant is strongly encouraged to discuss information requirements and test protocols with the certifying agency."

Why would NSF want to eliminate this sentence? First, NSF apparently preferred not to have to discuss requirements and protocols with other government agencies and apparently wanted to be able to approve fluoridation without any interference. Second, the reference to the "certifying agency" probably implies that the original pre-1988 plan was to have NSF make its proposed approval and then have a "certifying agency" validate it. The certifying agency was to have the last word. This was apparently an attempt at semi-privatization of fluoridation regulation. Privatization was popular during the Reagan-Bush years. By 2009 NSF realized the incriminating nature of this sentence and simply eliminated it.

This raises another question: Which agency would have been the "certifying agency"? FDA, EPA? CDC? The Washington Board of Health? The Lynnwood water district?

7) The practical effect of the "no additional collection of toxicological data shall be required" language is that toxicological studies will never be done on any contaminant in the list found on the EPA MCL and MCLG web page. To list some 20 toxicological studies and then negate doing any of them should not have been the intent of the FDA in 1979 when allegedly it was allegedly ceding authority over fluoridation to the EPA. It should not have been the intent of the EPA in 1978 when it was creating its EPA MCL and MCLG list and in 1988 when it was setting up NSF in the fluoride certification business. For that reason the "no additional collection of toxicological data shall be required" language is void and should be disregarded.

8) NSF's 2008 Fluoride Fact Sheet says:

> Standard 60 was developed to establish minimum requirements for the control of **potential adverse human health effects** from products added directly to water during its treatment, storage and distribution. The standard requires a **full formulation disclosure of each chemical ingredient** in a product. It also requires a **toxicology review** to determine that the **product is safe at its maximum use level** and to

> **evaluate potential contaminants** in the product. The standard requires **testing of the treatment chemical products**, typically by dosing these in water at 10 times the maximum use level, so that trace levels of contaminants can be detected. A **toxicology evaluation of test results** is required to determine if any contaminant concentrations have the **potential to cause adverse human health effects**. … NSF also developed a **testing and certification program** for these products, so that individual U.S. states and waterworks facilities would have a mechanism to determine which products were appropriate for use. The certification program requires **annual unannounced inspections** of production and distribution facilities to ensure that the products are properly formulated, packaged, and transported with **safe guards against potential contamination**. NSF also requires **annual testing** and **toxicological evaluation** of each NSF Certified product. NSF Certified products have the **NSF Mark**, the maximum use level, lot number or date code and production location on the product packaging or documentation shipped with the product. The use of this standard and the associated certification program have yielded benefits in **ensuring that drinking water additives meet the health objectives** that provide the basis for **public health protection**. … The NSF **toxicology review** for a chemical product **considers all chemical ingredients** in the product as well as the manufacturing process, processing aids, and other factors that have an impact on the contaminants present in the finished drinking water. This formulation review **identifies all the contaminants** that need to be analyzed in testing the product. For example, fluosilicic acid is produced by adding sulfuric acid to phosphate ore. This is typically done during the production of phosphate additives for agricultural fertilizers. The manufacturing process is **documented by an NSF inspector** at an initial audit of the manufacturing site and during each annual unannounced inspection of the facility. The manufacturing process, ingredients, and potential contaminants are **reviewed annually by NSF toxicologists**, and the product is tested for any potential contaminants. A minimum **test battery for all fluoridation products** includes metals of toxicological concern and radionuclides.

The NSF's 2012 Fluoride Fact Sheet says almost the same thing, but it removes all references to "toxicological" except for one.

NSF in another document on its web site represents that it has **two toxicologists on staff**.

The "no additional collection of toxicological data shall be required" language is hidden in a book which costs $325 and which is hard to locate in libraries. The representations in NSF Fact Sheets make no mention of this language. There is a rule in contract and warranty law: The fine print cannot un-warrant what the large print warrants. The large and public print on the NSF web site says there will be toxicological studies, testing, and safety of the product. The hard-to-obtain NSF 60 regulation book could not undo the warranty made publicly. Again, the "no additional collection of toxicological data shall be required" language is invalid.

9) Section A.2.3 wrongly interprets the EPA's National Primary Drinking Water Regulations and the EPA's MCL for fluoride, which is 4.00 ppm.

Many think that because the SDWA [Safe Drinking Water Act] has a 4 ppm maximum contaminant level (MCL) for fluoride, that the SDWA authorizes the insertion of fluoride up to a 4 ppm maximum. This is not so. The SDWA requires removal of fluoride if it exceeds 4 ppm. It does not authorize adding fluoride up to the 4 ppm level or adding any fluoride at all.

The 4.0 ppm MCL is a requirement that if the naturally occurring level of fluoride or pollution caused level of fluoride exceeds 4.0 ppm MCL action level, the water district must remove the fluoride or prevent it from being added to water. There is a secondary MCL of 2.0 ppm, and if fluoride in drinking water exceeds that level, the utility must give notice to water users of the risk of fluorosis.

You do not have to take my word as to whether this is the correct interpretation of the EPA MCLs. Take a look at what the National Research Council says at NRC 2006, Page 1:

> "In 1986, EPA established an MCLG [maximum contaminant level goal] and MCL [maximum contaminant level] for fluoride at a concentration of 4 milligrams per liter (mg/L) and an SMCL [special contaminant level] of 2 mg/L. These guidelines are restrictions on the total amount of fluoride allowed in drinking water. … **EPA's drinking-water guidelines are not recommendations about adding fluoride to drinking water to protect the public from dental caries**. … Instead, EPA's guidelines are maximum allowable concentrations in drinking water intended to prevent toxic or other adverse effects that could result from exposure to fluoride.

Further, NRC 2006, Page 13, says:

> It is important to make the distinction that EPA's standards are guidelines for restricting the amount of naturally occurring fluoride in drinking water; **they are not recommendations about the practice of adding fluoride to public drinking-water systems**.

This becomes more clear when you look a the list of contaminants regulated by EPA. Notice that the list includes biological contaminants such cryptosporidium. This is clearly not an authorization to add cryptosporidium up to a certain level but a requirement to remove it if it is present or prohibit its addition to water.

Notice that the EPA list includes such man made toxic waste chemicals such as atrazine. The MCL and MCLG for atrazine is .003 ppm or 3 ppb. This is clearly not an authorization to add atrazine up to 3 ppb but to require its removal from water if it exceeds that level or to prohibit its addition to water.

10) Arguably the type of fluoride referred to in the EPA MCL and MCLG list is "naturally occurring fluoride", not man-made fluorosilicic acid intentionally added. This is what the National Research Council said, as noted above. See NRC 2006, Page 13:

> It is important to make the distinction that EPA's standards are guidelines for restricting the amount of **naturally occurring fluoride** in drinking water….

There is a big difference between naturally occurring calcium fluoride and the man-made forms. Calcium fluoride is the naturally occurring fluoride found most frequently. Calcium binds to fluoride and reduces its reactivity. Calcium fluoride is not as immediately poisonous as is fluorosilicic acid. The LD 50 for calcium fluoride is 3,750 mg/kg; for fluorosilicic acid it is 125 mg/kg.

For a 70 kilogram or 154 pound person it would take a quarter kilogram of calcium fluoride to kill 50 percent of us – while making the rest very ill. For fluorosilicic acid the LD50 for a 70 kilogram person would be only 8.7 grams, the weight of around eight 1.25" paper clips. Also, calcium fluoride does not leach lead from plumbing, whereas fluorosilicic acid does.

Others argue that the term "fluoride" in the EPA MCL and MCLG list includes all kinds of fluoride. Calcium fluoride, aluminum fluoride cryolite, and magnesium fluoride are also naturally occurring. The same EPA MCL list includes arsenic, barium, beryllium, and cadmium, and there are many forms

in which all of these can exist. This would imply that any form of fluoride would be covered. However, this does not change the outcome. It is still true that EPA MCLs do not authorize the addition of any of the listed additives to drinking water, only the removal of them if they exceed the MCL action level or the prevention of them from flowing into water.

11) Section A.3.2 is poorly worded, even nonsensical. A.3.2 says:

> "If a substance is regulated under the USEPA's National Primary Drinking Water Regulations and USEPA has finalized a Maximum Contaminant Level (MCL) or other means of regulation such as a treatment technique (see Annex A, Section A.2.18) no additional collection of toxicological data shall be required prior to performance of the risk estimation."

What the amateurs who wrote A.3.2 were trying to say is:

> "If a substance is regulated under the USEPA's National Primary Drinking Water Regulations and USEPA has finalized a Maximum Contaminant Level (MCL) or other means of regulation such as a treatment technique (see Annex A, Section A.2.18), and if the MCL does not exceed 10% of the MCL set by the USEPA, no additional collection of toxicological data shall be required ….

Again, this paragraph is nonsensical, and therefore the change away from the 1988 version should be disregarded. Or the entirety of A.3.2 should be disregarded. If either is done, we return to the same conclusion: The toxicological studies must be done.

12) Compliance with A.2.3 is not enough for fluoridation materials to "comply with" NSF 60. The supplier of fluoridation materials and NSF must also "comply with" NSF 60-2013 section 3.2.1, which says:

> 3.2.1 The manufacturer shall submit, at a minimum, the following information for each product:
>
> - a proposed maximum use level for the product, which is consistent with the requirements of Annex A;
>
> - complete formulation information, which includes the following:
>
> – the composition of the formulation (in percent or parts by weight for each chemical in the formulation);

– the reaction mixture used to manufacture the chemical, if applicable;

– chemical abstract number (CAS number), chemical name, and supplier for each chemical present in the formulation;

– a list of known or suspected impurities within the treatment chemical formulation and the maximum percent or parts by weight of each impurity; and

– the source and type of water used in the manufacture of the treatment chemical as well as any available documentation regarding quality monitoring of such water source, if applicable;

– a description or classification of the process in which the treatment chemical is manufactured, handled, and packaged;

– selected spectra (e.g. UV/visible, infrared) shall be required for some additive products or their principle constituents; and

– **when required by Annex A a list of published and unpublished toxicological studies relevant to the treatment chemical and the chemicals and impurities present in the treatment chemical.**

The most interesting of these is the last one, which says the supplier must supply:

> a list of published and unpublished toxicological studies relevant to the treatment chemical and the chemicals and impurities present in the treatment chemical.

That would include the fluoride itself and the other contaminants that come along with it.

The toxicological studies must be "relevant", and they must be real toxicological studies. Both published and unpublished studies must be submitted. The requirement that unpublished studies be submitted would imply that the supplier is required to commission studies.

If they were complying with NSF 60, suppliers should have submitted all these documents to NSF when they applied for NSF certification of their so-called

fluoride. And NSF should have received these documents. So both the suppliers and NSF should have these documents.

If the documents from the suppliers are not in good order or were never submitted (which is almost certainly the case), then the fluoridation materials we use to pollute our drinking water would not "comply with" NSF 60. It is the duty of the Board of Health to demand that Simplot and NSF turn over these documents and to confirm or deny that they exist. For the Board to do otherwise would imply that they do not want to know whether our fluoridation materials "comply with" NSF 60. It would be to allow a fraud to be perpetuated and a violation of federal and state consumer protection law.

ARSENIC FAILS RISK ESTIMATION TEST

NSF 60 does not apply only to fluoride. It applies to other contaminants that come with fluorosilicic acid, such as arsenic.

NSF admits that around 43% of all fluorosilicic acid batches contain some arsenic and that the maximum amount of arsenic added to water by fluoridation materials and which was fluoridated at 1.0 ppm was 1.66 ppb as documented by NSF in 2000.

With water now fluoridated at .7 ppm instead of 1.0 ppm, the effective level of arsenic added by the fluoridation materials would be 1.66 ppb x .7 = 1.16 ppb, which is still more than 10% of the 10 ppb MCL. Arsenic from fluorosilicic acid added to water at .7 ppm fails the risk estimation test.

Arsenic is a confirmed type 1A human carcinogen. A type 1A human carcinogen is one which has been confirmed to be cause cancer in humans. Arsenic can cause skin, liver, lung, kidney, and bladder cancer. Arsenic disrupts the cellular process that produces ATP, the molecule in charge of transporting energy throughout your body's cells so they can perform the tasks that keep you alive. Arsenic both blocks and competes with the chemicals that form ATP, leaving the body short of what it takes to keep up even the most basic cellular processes. A peer reviewed 1992 article in Environmental Health Perspectives says that consuming 50 ppb arsenic per liter of water daily (1992 MCL) can be expected to cause cancer in 13 of 1,000 people. See:

Small amounts of arsenic become trapped permanently under skin and can eventually lead to skin cancer decades later. This is described in the Agency for Toxic Substances and Disease Registry on arsenic.

The snow melt drinking water of western Washington is lower in naturally occurring arsenic than is ground water used elsewhere. But that does not mean we should feel free to add so-called fluoride which is laden with arsenic to our drinking water and then drink it from conception to death.

In 2001 the EPA lowered the MCL for arsenic from 50 ppb to its current level of 10 ppb.

The National Resources Defense Council position is that the 10 ppb MCL should be even lower:

> "Given the risk estimates for all internal cancers provided in the NAS's 1999 report, the current EPA MCL for arsenic must be revised downward to no higher than a value at the Practical Quantitation Level (PQL) of 3 ppb."

Highly specialized machines can measure arsenic levels even below 1 ppb.

A water district must remove arsenic if it exceeds the 10 ppb MCL action level. The MCLG, maximum contaminant level goal for arsenic, is zero. If your goal is zero, you do not get closer to that goal by adding any amount of arsenic.

With water now fluoridated at .7 ppm instead of 1.0 ppm, the effective level of arsenic added by the fluoridation materials would be 1.66 ppb x .7 = 1.16 ppb, which is still more than 10% of the 10 ppb MCL. Arsenic from fluorosilicic acid added to water at .7 ppm fails the risk estimation test. Because the "no additional collection of toxicological data shall be required" language is void, toxicological studies must be done. The Washington Board of Health should demand to see them.

Further, bear in mind that as with fluoride, the EPA MCL is not an authorization to add any amount of arsenic, only to remove arsenic if it exceeds the MCL action level or to prevent its addition to water if the amount added from pollution exceeds that action level. Fluoridation adds arsenic to our drinking water and should therefore cease.

Further, bear in mind that as with fluoride, if there are sources of arsenic ingestion other than from drinking water, the denominator in the NSF formula should be raised from 1.0 to a higher number, which would lower the SPAC and make it less likely that arsenic would pass the risk estimation test.

Fluoridation defenders might say that 1.66 ppb or 1.16 ppb is a small amount of arsenic and that it can be disregarded. But where is the science that says

that a small amount of arsenic consumed daily for life from conception to death is harmless? Where is the science which says that the combined effect of arsenic and the many other contaminants in our so-called fluoride? There is no such science. One-third of us will contract cancer, and one-fourth of us will die of cancer, so we should be cautious and not reckless when dealing with a known type 1A human carcinogen. Fluoridation is reckless if for no other reason than that fluorosilicic acid comes with arsenic.

The 2014 Seattle water quality report does not even mention arsenic, implying there is none present in water fluoridated at.8 ppm fluoride. This would mean there was no arsenic in the fluorosilicic acid.

However, Simplot's Certificates of Analysis say fluorosilicic acid delivered to Seattle contains arsenic present at 10.47 ppm undiluted in the tanker truck.

The 2012 NSF Fact Sheet on Fluoridation says arsenic is present in 43% of tanker loads tested.

Likewise, the 2012 Everett water quality report does not even mention arsenic, implying that none is present in water fluoridated at .7 ppm fluoride.

However, Simplot's Certificates of Analysis says that arsenic is delivered to Everett Utilities in the fluorosilicic acid at 11.16 ppm.

And according to the Lynnwood water quality report, the average arsenic level is .2 ppb and "arsenic [is] monitored at the treatment plant effluent". The Lynnwood report says that its water comes from Everett.

Someone in the Seattle and Everett utility departments appears to have "cooked the books". The Board of Health should look into these discrepancies.

FLUORIDATION MATERIALS CONTAIN LEAD AND LEACH LEAD

Fluorosilicic acid is contaminated with lead. I rely on NSF's own reports to prove that, plus Simplot's Certificates of Analysis and Seattle and Everett reports.

Fluorosilicic acid is diluted down 230,000 times to get it from 23% fluorosilicic acid in the tanker truck down to 1 ppm fluoride ion, NSF admits that the amount which fluorosilicic acid adds to drinking water is 1.1 ppb in a 2000 NSF report and at .6 ppb in 2008 and 2012 NSF Fluoride Fact Sheets.

For a full discussion of the lead and fluoridation issue see my 2011 lead letter to HHS and EPA.

Lead permeates all cells in the body, reduces IQ, shortens life span, exacerbates kidney disease, and worsens high blood pressure. It causes anemia, worsens osteoporosis, disrupts thyroid function, alters immune function, and affects brain function. See ATSDR report starting at page 22. See a National Center for Biotechnology Information report on lead toxicity. See a report on lead and high blood pressure. See a report on lead and IQ in children.

The EPA MCL for lead is 15 ppb.

However, the MCLG, maximum contaminant level lead, is zero. If your goal is zero, you do not get closer to that goal by adding any amount of lead. In effect, the MCLG of zero prohibits fluoridation because the fluoridation materials contain arsenic.

Now that the level of added fluoride has been lowered from 1.0 to .7 ppm, fluorosilicic acid is being diluted 328,000 times instead of 230,000 times to reduce the fluorosilicic acid concentration to .7 ppm instead of 1.0 ppm. The amount of lead being contributed along with the so-called fluoride we drink at .7 ppm would be 70% of 1.1 ppb or .77 ppb. A mechanical application of the "no additional collection of toxicological data shall be required" language in the current version of NSF 60 would say that arsenic passes the risk estimation test when water is fluoridated at .7 ppm – because.77 ppb is under 10% of the 15 ppb MCLG. Likewise, toxicological studies would not be required simply because there is an MCL for lead.

However, the "no additional collection of toxicological data shall be required" language is void for reasons discussed above in the context of fluoride.

And as with fluoride, the existence of a 15 ppb MCL for lead is not an authorization to add any amount of lead, only to remove lead if it exceeds the MCL action level or to prevent the addition of lead to water if the amount added from pollution exceeds that action level.

Further, there are other sources of lead in the environment, and this changes the calculation under the risk estimation test. There is lead paint in older homes. There is lead in old service lines running out to the street, in brass faucets up to 8.0%, in copper-lead solder, in soil as a result of burning gasoline containing tetraethyl lead from the 1920s into the 1980s, and from piston engine aircraft which still burn leaded avgas. Therefore, the denominator in the

NSF formula should be raised from 1.0 to a higher number, which would lower the level at which lead passes the risk estimation test. And of course, toxicological studies should be required because the "no additional collection of toxicological data shall be required" language is void.

Fluoridation defenders might say that this is only a small amount of lead and that it can be disregarded. But where is the science that says that a small amount of lead consumed daily for life from conception to death is harmless? There is no such science. Fluoridation is reckless if for no other reason than that fluorosilicic acid comes with lead.

But our consideration of lead is not over. Fluorosilicic acid not only contains lead, it leaches lead from plumbing.

In 1992 Tacoma was fluoridating city water with fluorosilicic acid. The percentage of homes in Tacoma exceeding the action level for fluoride - then 50 ppb – was 9.8%. Because Tacoma was experiencing equipment problems and a drought, Tacoma Public Utilities stopped fluoridating temporarily. When fluoridation stopped, 90th percentile lead levels dropped from 32 ppb to 17 ppb. The 90th percentile test means that 10% of randomly selected homes had lead coming from their taps at 32 ppb and then 17 ppb.

Also in 1992 Thurmont, Maryland, stopped fluoridating. Lead levels in Thurmont dropped 78%. Thurmont turned off the fluoridation equipment permanently. Tacoma soon returned to fluoridating. The horse ran back into the burning barn.

Why would there be more lead in drinking water when water is fluoridated? The first reason is that there is lead in fluorosilicic acid. There is lead in the raw phosphate ore used to make super phosphate fertilizer, and so there is lead in fluorosilicic acid scrubber liquor. But this alone cannot account the relatively small lead levels in the water out in the water mains compared to the lead levels at the tap. The second reason is that there is lead in plumbing in most homes, and fluorosilicic acid leaches lead from plumbing.

LEAD LEACHING

Fluorosilicic acid, when dissolved in water down to 1.0 ppm fluoride or now down to .7 ppm fluoride, breaks down into fluoride ion, hydrogen fluoride, and silicic acid, H_4SiO_4, as confirmed in the 2006 National Research Council study on fluoride at page 53.

Even though there is relatively little lead in water in the water mains, even including the lead which came along with the fluorosilicic acid, lead levels at the tap can be much higher. It is the silicic acid which dissolves lead in plumbing.

Coplan, Masters, Maas, and Sawan showed that that there is much more lead in tap water fluoridated with fluorosilicic acid than with sodium fluoride. However, they do not explain the mechanism by which fluorosilicic acid dissolves lead.

Silicofluoride, more so than sodium fluoride, leaches lead out of pipes and brass fittings.

Silicic acid is classed as a weak acid and is often dismissed as relatively harmless. Unfortunately for our health, it is able to dissolve – slowly but surely – the lead in lead based pipes and fittings and lead-brass faucets. The dissociation constant of silicic acid in water is very low, 2×10^{-10}. This means that the amount of sodium carbonate, Na_2CO_3, also known as soda ash, added to neutralize the fluoride ion and hydrogen fluoride is not sufficient to neutralize the silicic acid. Although silicic acid is classed as a weak acid, it is also hard to neutralize and therefore persists and dissolves lead in plumbing.

See Dr. Richard Sauerheber explanation of the process whereby fluorosilicic acid breaks down into silicic acid and then leaches lead.

Silicic acid has another name. Supporters of fluoridation avoid calling it "acid" and instead call it silicate ion in water. When it is written as $Si(OH)_4$, there is the implication that it is not an acid. When it is written as H_4SiO_4, there is the implication that it is an acid. Beginning the chemical formula with "H" would indicate that it is an acid. See a diagram which illustrates the issue. The 2012 NSF Fluoride Fact Sheet does not even mention silicic acid. It refers only to "silicate ions in water". $Si(OH)_4$ and H_4SiO_4 have exactly the same number of atoms of silicon, oxygen, and hydrogen.

NSF then makes the inaccurate and inappropriate statement that

> "sodium, fluoride, and silicates all have toxicological studies, fluoride has an MCL regulatory level, and silicate has an NSF maximum usage assessment. Fluorosilicates do not need a toxicological assessment specifically for the fluorosilicate ion, because it does not exist in potable water at the fluoride concentrations and pH levels of public drinking water".

Yes, there is very little fluorosilicic acid after dilution, but there is a lot of silicic acid, a point which NSF glides over. Silicic acid needs a toxicological assessment, but NSF does not provide for it.

Lead leaching can be extreme. In 2004 Seattle papers reported lead at 1,600 ppb (parts per billion) in old Seattle schools, far above the 15 ppb EPA action level and the zero ppb goal. New brass pipes and faucets contain around 8% lead and older pipes contain as much as 30% lead. Old schools, homes, apartments, hospitals, office buildings, and factories have pipes containing lead, which silicic acid will leach. When water districts stop fluoridating, lead levels in water and in blood drop, as happened in Tacoma in 1992. Seattle commissioned reports on the lead in schools, but had a blind spot to the possibility that silicic acid was a factor. It is a political sin to blaspheme the fluoridation deity. Seattle replace lead pipes in schools at great cost, which was a good thing. It should also have terminated fluoridation.

And let's not forget that even if we replace all the lead pipes in schools we will have solved only a small part of the problem. We will solve the lead problem in schools, but the lead problem will remain in other structures. We cannot build our way out of the lead leaching problem. We must stop fluoridating.

Sodium fluoride, used to fluoridate around 8% of water users does not break down to form silicic acid, and therefore does not leach as much lead as does fluorosilicic acid, however, that does not mean that fluoridating with sodium fluoride is acceptable. Sodium fluoride breaks down into fluoride ion, which at acidic pH, such as in the stomach, forms hydrogen fluoride, which is a very tiny, neutral molecule, which is able to penetrate the fatty lipid layer of the stomach and enter the blood stream.

Dr. Roger Masters and Myron Coplan have worked jointly for years researching and publishing extensively regarding the effects of fluoride, specifically fluorosilicic acid and sodium silicofluoride, on violent and other abnormal behavior. The silicofluorides leach more lead and are more harmful than sodium fluoride. See the following articles written by these two authorities:

Roger Masters on Toxins, Health, and Behavior

> Toxins like lead are associated with higher rates of violent crime, learning disabilities, and substance abuse.

Roger Masters – The Harmful Side-Effects of Water Treated with Silicofluorides

> When either of these silicofluorides (SiF) is added to a water supply, published research has identified biological effects of the "residue" of partially dissociated silicofluoride molecules. These effects increase both immediate "uptake" of environmental lead to blood and long term "absorption" of lead in body organs. Resulting changes in brain chemistry influence social behavior and call into question the policy of using these chemicals in treating public water supplies in the U.S.

Roger Masters and Myron Coplan, Neurotoxicity and Violent Crime

> Lead, for example, lowers intelligence and learning ability, as Ben Franklin learned from British printers. More recently, neurotoxicologists have shown an association between lead uptake and poor impulse control, learning disabilities, and violence.

Roger Masters – Publications Relating to Fluorosilicic Acid

LEAD DISCLOSURE LAW IGNORED

Federal law at ***42 U.S. Code*** § ***300g–6*** says:

> Each owner or operator of a public water system … shall identify and provide notice to persons that may be affected by lead contamination of their drinking water where such contamination results from … lead content in the construction materials of the public water distribution system [or] corrosivity of the water supply sufficient to cause leaching of lead. … Notice under this paragraph shall be provided notwithstanding the absence of a violation of any national drinking water standard. [emphasis added].

Washington utilities are disregarding federal laws which require reporting of lead concentrations in drinking water.

WAC 246-290-220(5) contains the following language regarding leaching:

> (5) The department may accept continued use of, and proposals involving, certain noncertified chemicals or materials on a case-by-case basis, if all of the following criteria are met: …
> (b) There exists no substantial evidence that the use of the chemical or material has caused consumers to register complaints about aesthetic issues, or health related concerns, that could be associated with leachable residues from the material; and

> (c) The chemical or material has undergone testing through a protocol acceptable to the department and has been found to not contribute leachable compounds into drinking water at levels that would be of public health concern.

The Washington Board of Health ignores this regulation.

CLEAN WATER ACT - FEDERAL WATER POLLUTION CONTROL ACT

We drink and cook with maybe one percent of the water that flows through our homes. The other 99 percent goes down the shower, sink, and commode or out of the washing machine and then to the treatment facility. The treatment facility is unable to filter out the tiny fluoride ion, and so fluoride flows into our rivers. Four cities dump their fluoridated sewer water into the Snohomish River: Monroe, Snohomish, Everett, and Marysville. The fluoride content of sewer effluent is high enough to repel salmon and cause salmon runs to crash, as has happened in the Snohomish, Columbia and Sacramento Rivers.

The Clean Water Act of 1972 states:

> SEC. 101. (a) The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. In order to achieve this objective it is hereby declared that, consistent with the provisions of this Act— (1) it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985: … (3) it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited…."

Fluoride is a pollutant and should not be discharged into our rivers.

Fluoridation violates the Clean Water Act and thus violates NSF Rule 60 and WAC 246-290-220, which build on the Clean Water Act.

SAFE DRINKING WATER ACT

The EPA MCLs and MCLGs mentioned in NFS 60 come from the SDWA, which is found in Title 42 of the US Code, and so the SDWA is an implied part of WAC 246-290-220. Relevant provisions of the SDWA are quoted here:

> When proposing any national primary drinking water regulation that includes a maximum contaminant level, … the Administrator shall … use … an analysis of … [t]he effects of the contaminant on the general population and on groups within the general population such as infants,

> children, pregnant women, the elderly, individuals with a history of serious illness, or other subpopulations that are identified as likely to be at greater risk of adverse health effects due to exposure to contaminants in drinking water than the general population.
>
> Each maximum contaminant level goal established under this subsection shall be set at the level at which no known or anticipated adverse effects on the health of persons occur and which allows an adequate margin of safety.

Fetuses are highly sensitive to fluoride and its co-contaminants because their cells are rapidly dividing. Fluoride and its co-contaminants pass the placental barrier and lower IQ. The FDA banned prenatal supplements containing fluoride. Babies too are highly sensitive. Their cells too are still dividing, and they drink four times as much fluids per their body weight as do adults. Babies' kidneys are not mature and excrete only 20% of fluoride consumed. CDC, ADA, AMA, and the surgeon general have advised that if formula is mixed using fluoridated water fluorosis will result, an admission that other harms are being done.

Fluoride builds up in kidneys, reducing ability to excrete. Water used for dialysis must be fluoride free. After drinking fluoridated water for years, bone will contain 3,000 to 12,000 ppm fluoride, depending on water hardness and diet. At 3,000 ppm bones weaken and become brittle. Fractured pelvises are twice as common in fluoridated areas. All fluorides affects bones, joints, and tendons and exacerbate arthritis.

Fluoridated water fails to protect these sensitive populations and thus violates the SDWA and NSF Rule 60.

NSF SHOULD NOT BE APPROVING FLUORIDATION MATERIALS

Now that I have completed my analysis of fluoridation and NSF 60, I should add that EPA should never have privatized the regulation of fluoridation by passing its own responsibility off to a trade association where the industries regulated by NSF sit on the NSF board. And the FDA should be enraged that NSF has usurped is role by approving a drug to be safe for human consumption when only the FDA is authorized to do that.

Nevertheless, Washington has chosen to convert NSF 60 into some kind of regulation and to consider it binding. So it should be applied, and if it is applied, fluoridation will have to stop.

I should also add that there is a core part of NSF 60 which has validity, and that is the list of toxicological studies which must be done. It is my theory that this list was prepared by the FDA back in 1979 when it transferred authority over fluoridation to the EPA. Toxicological studies should be done on fluoridation materials, and if they were done, the results would be so horrifying that fluoridation would end immediately.

CDC ADMITS THAT FLUORIDATION MAKES NO SENSE

Why should you believe me instead of guys in white coats? Because I quote from the white coats. Consider three important admissions which come from the CDC web site itself:

> a) that fluoridation reduces caries only 18% to 25% which is only one or two cavities per lifetime. (Other evidence says it does not reduces caries at all);
>
> b) that 41% of adolescents suffer from some degree of dental fluorosis, with around 12% of adolescents suffering from mild, moderate, and severe fluorosis, which is noticeable, embarrassing and ugly; and
>
> c) that "fluoride prevents dental caries predominately after eruption of the tooth into the mouth, and its actions primarily are topical for both adults and children".

Thus, according to CDC's own admission, fluoridation would not seem to be a good bargain.

Add to this the studies which indicate that there are much more effective ways to reduce and even eliminate tooth decay than fluoridation, and the issue becomes even clearer. The fixation on fluoridation distracts the dental profession from teaching methods which really do reduce caries and do so without any harm.

If we have sound teeth it is in spite of fluoridation not because of it.

ENVIRONMENTAL IMPACT

Only a fraction of the fluoride added to our water is consumed by humans. Most of those chemicals go straight into our environment, where the fluoridated waste water has a negative impact on aquatic species. US, Canadian and Irish studies have documented that fluoridated waste water has an adverse impact on the reproduction and migration of salmon and trout, as

well as other aquatic life. Many environmental groups, including the Environmental Working Group and Sierra Clubs, have spoken in opposition to fluoridation as an environmental harm. Moreover, fluoridation chemicals accumulate in our environment, not for just for years or decades. It has been suggested that the toxic accumulation in the environment from fluoridated waste water may persist a million years.

CONCLUSION

You have probably heard all your life that fluoridation is a good thing. But fluoridation supporters including medical, dental, and public health advisers have been deceived by a big lie and are trapped and lost in a fluoridation maze. Fluoridation is a maze of half-truths and lies, and for some people it is hard to find the exit.

There is a tendency for people to say "I'll just take the word of the doctors and dentists" when it comes to such scientific subjects. However, if you did well in high school math, chemistry, and physics, you should easily understand the health, safety, and effectiveness issues. As a lawyer, you should be able to understand how fluoridation violates numerous laws.

I hope the NGA and its membership will honestly study this issue and do the right thing. As you study, bear in mind what Mark Twain said: It is a lot easier to defraud a man than it is to convince him he has been defrauded.

The right thing for you to do would be to put a halt to fluoridation and initiate a state class action suit against NSF and Simplot. The suit would be first for the money which rate payers have paid for unnecessary and harmful fluoridation chemicals and next for physical harm incurred.

The right thing, the smart thing, is the National Governors Association immediately withdraw the 2015 paper, "Health Investments that Pay Off: Strategies to Improve Oral Health," and replace it with a recommendation that governors in all fifty states and five territories immediately place a moratorium on fluoridation while drafting legislation to permanently ban any future addition of poison to our water supplies.

MORE INFORMATION

For a general orientation to this subject, read the Safewater flier first: www.fluoride-class-action.com/safewater.

Read "National Sanitation Foundation – Sham FDA – Fraudulent Certifier of Fluoridation Materials", posted online at www.fluoride-class-action.com/sham

Read: "What Is In It?" a quantification of the contaminants contributed to drinking water through fluoridation. http://www.fluoride-class-action.com/what-is-in-it

Read about why there are much better ways to prevent tooth decay than fluoridation posted online.

Read "How Does Fluorosilicic Acid Leach Lead?" http://www.fluoride-class-action.com/silicic-acid-2

Read about the illegality of fluoridation and the coming class action against NSF, suppliers of fluoridation materials, the water districts which fluoridate, and the state which authorizes it.

Read my Fluoride Report Card For HHS and EPA.

Read my 2011 letter to HHS and EPA regarding lead in fluoridation materials.

Read the Clean Water Act of 1972.

Read the Safe Drinking Water Act of 1974.

Read about the mechanism of mass propaganda as engineered by Edward Bernays, double nephew of Sigmund Freud to manipulate women to take up cigarette smoking, and to promote the toxic use tetraethyl lead in gasoline and the fluoridation of our drinking water.

Read about how to an exit from the fluoridation maze.

The following quick links may be helpful:

EPA MCL and MCLG list.
NSF 60 Standard, 1988 version.

NSF 60 Standard, 2009, version:

NSF 60 Standard 2013.

2000 NSF letter.

2008 NSF Fact Sheet on Fluoridation.

2012 NSF Fact Sheet on Fluoridation.

Sincerely,

James Robert Deal, Attorney
WSBA Number 8103

Copies sent to:

Governor Gary R. Herbert
Utah State Capitol
Suite 200
Salt Lake City UT 84114

Governor Terry McAuliffe
State Capitol
Third Floor
Richmond VA 23219

Governor Charlie Baker
State House
Office of the Governor, Room 360
Boston MA 02133

Governor Maggie Hassan
New Hampshire State House
107 North Main Street
Concord NH 03301

Governor Matthew Mead
State Capitol Building, Room 124
Cheyenne WY 82002

Governor Dennis Daugaard
500 East Capitol Street
Pierre SD 57501

Governor Larry Hogan
State House
100 State Circle
Annapolis MD 21401

Governor Jay Nixon
Capitol Building, Room 216
P.O. Box 720
Jefferson City MO 65102

Follow links by going to this document:
www.fluoride-class-action.com/deal-to-conference-of-governors-4-4-2016