

# **AFFIDAVITS**

**Safe Water Association Incorporated (Plaintiff)  
vs Fond du Lac County (Defendant)**

**PRESS RELEASE June 30 1993:**

**Judge Grimm found fluoridation harmful but did not have the power to “enjoin”  
(forbid) the practice.**

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**Plaintiff,**

**vs.**

**Case No. 92 CV 579**

**CITY OF FOND DU LAC,**

**Defendant.**

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**AFFIDAVIT OF DR. FRANK BERTRAND IN SUPPORT OF MOTION FOR  
SUMMARY JUDGMENT**

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Nation of South Africa  
City of Johannesburg

Dr. Frank Bertrand, being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

1. I am a dental practitioner who has done a great deal of original research.
2. I received my B.D.S. from Durham University, England, in 1947.
3. I have had numerous articles published in various respected publications, including:
  - A. "The Probe", a dental magazine in Britain - e.g.-
    1. A series of nine articles on teething, published monthly in 1973.
    2. "Heart attacks, Vitamin E and calculus - the links explored", March 1989.
    3. "Effects of Chlorine and Fluorine on Vitamin E, the human body and the environment," August 1989.
  - B. "The Dental Practitioner", published in Britain -e.g.-
    1. "Ergosonics", - May 1991.
    2. "The Audiodental Phenomenon (AD)", July/August 1991.
    3. "Dentophonics (DP) - September 1991
4. I have published booklets entitled:
  - a. The Andiodental Phenomenon - 1963 (England)
  - b. Dentosonics - 1966 (England)
  - c. Human Teething - 1967 (Rhodesia).
  - d. Fluoride, The Perfect Poison - (Rhodesia).
5. With regard to the fluoridation of drinking water, a careful examine of the available scientific evidence shows:
6. There is little or no evidence that fluoridation causes any significant reduction of tooth decay.
7. There is no saving in dental personnel due to fluoridation - see analysis of Anglesey. (Exhibit\_\_\_\_\_).
8. In fluoridated areas, children up to 15-16 years of age will have fewer permanent teeth erupted and will therefore have less decay of permanent teeth. Fluoridationists themselves now generally admit that Fluoride has little or no effect on decay on people over the age of 16 years.

9. I did a teething survey in Bulawayo, Rhodesia, of 100 white boys and 100 white girls of each age group from 5-16 years - this was based on the charting of the teeth of the children by school dental officers.
  10. The Bulawayo survey showed a marked variation in the timing and pattern of teething when compared to surveys taken at the turn of the century.
  11. Following this I did a teething survey of black children; fifty boys and fifty girls aged from 5-16 years. This survey showed that the timing and pattern for black children were virtually the same as that for white children at the turn of the century (pre-fluoridation and chlorination).
  12. The Bulawayo surveys showed that at 12 years of age for blacks, 64% of the boys and 78% of the girls had 28 teeth; while for whites of 12 years of age 24% of the boys and 37% of the girls had 28 teeth - less than half the percentage for black children.
  13. The white children were urban and drinking chemically treated water, while the black children were drinking free-lying water - no chemicals.
  14. 1 p.p.m. is not so minute as to be of no consequence. For example, Thyroxine is a hormone excreted by the thyroid gland and it is measured in micrograms/liter of blood plasma - extremely minute but very potent.
  15. Fluoride has been termed the "wild-cat" element, as it is very difficult to know how it will react. It is one of the most reactive electro-negative chemicals known to man.
  16. It is known that fluoride in water at 1 p.p.m. causes changes in the size and shape of teeth (MULLER 1965; COOPER AND LUDWIG, 1965).
  17. The Shute Institute (London, Canada), states that the main cause of coronary thrombosis is lack of or interference with vitamin E, which is a strong anti-coagulant. The late Professor Douw G. Steyn of Pretoria stated that fluorine would destroy vitamin E. Mr. Harold Simpson, an organic chemist of Chicago, stated that both chlorine and fluorine are strong oxidizing agents, and will destroy vitamin E.
  18. The great increase in coronaries in the western world since 1945 has coincided with the great increase in fluoride intake. Fluoride can act as a heart poison either directly or indirectly by destroying vitamin E.
  19. I warned the Dental Association of South Africa (D.A.S.A.) about the danger of fluoride in a letter published by them in April 1977. Today South Africa has one of the highest incidence in the world for coronary thrombosis in white people under the age of 35 years; exactly what one would expect from millions of patient days of treatment of children with fluoride tablets. The average diet including fluids, already gives much more fluoride than a quart of fluoridated water at 1 p.p.m. would give.
  20. In my judgement, reached with a high degree of scientific certainty, fluoridation of drinking water is ineffective against dental decay and poses a great danger to those who drink it or cook with it. Fluoridation is deliberate poisoning, one of its most vulnerable targets being the expectant mother.
  21. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**SAFE WATER ASSOCIATION, INC.,**

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**Plaintiff,**

**vs.**

**Case No. 92 CV 579**

**CITY OF FOND DU LAC,**

**Defendant.**

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**AFFIDAVIT OF ALBERT W. BURGSTAHLER, Ph.D.  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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State of Kansas  
Douglas County

Albert W. Burgstahler, Ph.D., being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

**EDUCATION AND EXPERIENCE**

1. I am a professor of chemistry on the faculty of the Department of Chemistry, The University of Kansas, Lawrence, Kansas 66045.
2. I was born in Grand Rapids, Michigan, on July 10, 1928, and was graduated magna cum laude from the University of Notre Dame in 1949 with a B.S. degree in Chemistry. I received my M.A. (1950) and Ph.D. (1953) degrees in organic chemistry from Harvard University. I then did postdoctoral research at the University of London (Birkbeck College) and later at the University of Wisconsin (Madison) before becoming Instructor of Chemistry at the University of Kansas in 1956. In 1957 I was appointed Assistant Professor of Chemistry at Kansas. In 1961 I was promoted to the rank of Associate Professor and in 1965 to the rank of Professor.
3. Some of my honors are: Visiting Scientist, National Institutes of Health, Bethesda, Maryland (summers, 1958 and 1961); Alfred P. Sloan Research Fellow, University of Kansas (1961-1964); Notre Dame Centennial of Science Award (1965); President, International Society for Fluoride Research (1971-1974); McGregory Lecture, Colgate University (November 1979).
4. My principal areas of chemical research are in the field of organic synthesis and the chemistry of natural products with current emphasis on stereostructural and optical rotational properties of conjugated chiral dienes and enones. My interest in fluoride research began in the early 1960s with studies on the synthesis and biological properties of fluorinated amino acids. Subsequently I broadened this interest to problems concerning fluoride in the environment and water fluoridation.
5. Besides approximately 100 reports and articles on my chemical research, I have authored or co-authored numerous articles and review on various aspects of fluoride and fluoridation, including (partial listing):

- a. Dental and Medical Aspects of Fluoridated Drinking Water, Transactions of the Kansas Academy of Science, 1965.
  - b. In Vivo Studies with Fluoroproline, Nature, 1966.
  - c. Review of J. H. Simons, Fluorine Chemistry, Volume IV, AMA Archives of Environmental Health, 1967.
  - d. Fluoridation and the Problem of Dental Caries, National Health Federation Bulletin, 1967.
  - e. Better Diet vs. Fluoridation, National Fluoridation News, 1967 (reprinted in Prevention, 1967).
  - f. Scientists and Fluoridation, Vitalstoffe Zivilisations-krankheiten, 1968; later versions in Natural Food and Farming, 1968; National Fluoridation News, 1968; Prevention, 1968; and The Register of Phi Lamda Upsilon, 1970.
  - g. Review of R. Y. Eagers, The Toxic Properties of Inorganic Fluorine Compounds, FLUORIDE, 1970.
  - h. Fluoride and Down's Syndrome (Mongolism), FLUORIDE, 1975.
  - i. Review of D. Rose and J. R. Marier, Environmental Fluoride, 1977, Journal of the American Chemical Society, 1979.
  - j. Review of E. Johansen et al., Continuing Evaluation of the Use of Fluorides, FLUORIDE, 1980.
  - k. Effects of Supplemental Vitamin E on Dental Fluorosis in Rats. A Qualitative Preliminary Study, FLUORIDE, 1985.
  - l. Water Fluoridation: Promise and Reality, National Fluoridation News, 1985.
  - m. Osteoporotic Hip Fractures and Fluoridation, FLUORIDE, 1986.
  - n. Should We Fluoridate Our Drinking Water? No, It Isn't Safe. U.S. Water News, 1986.
  - o. Continuing Controversy over Fluoride Tolerance for Dairy Cattle, FLUORIDE, 1987.
  - p. Review of W. Varney, Fluoride in Australia - A Case to Answer, FLUORIDE, 1988.
  - q. Effect of Carbon Treatment on Aqueous Fluoride Determinations, FLUORIDE, 1993 (in press).
6. In addition to the foregoing publications, I am a collaborating co-author, along with Prof. H. Lewis McKinney, of the book, Fluoridation: The Great Dilemma, by the late (1898-1982) George L. Waldbott, M.D. (with a Foreword by the late [1896-1981] Alton Ochsner, M.D., of the Ochsner Clinic in New Orleans), Coronado Press, 1978.
  7. Beginning in the 1960s I initiated an extensive search of the biomedical literature pertaining to fluoride and fluoridation. Before that time, based on what I and many others had been led to believe, I had viewed water fluoridation as an effective and safe way to help prevent dental caries (tooth decay). From my study of many of the original research reports, however, I was compelled to reconsider that viewpoint and soon found it untenable. In particular, I was impressed (and disturbed) by the fact that the actual evidence for significant dental benefit was questionable and that there were many clear and unmistakable findings of harmful effects even from fairly low levels of fluoride intake.

## HISTORICAL BACKGROUND

8. The element fluorine is the lightest and most reactive of the group of chemical elements known as the halogens--the others being chlorine, bromine, iodine, and the radioactive element astatine. Fluorine is widely distributed as the 13th or 14th most abundant element in the earth's crust and

- occurs naturally mainly as relatively insoluble inorganic fluorides.
9. In 1931 the highly toxic nature of inorganic fluorides became a matter of heightened general concern with the discovery that relatively small amounts of fluoride ion in the drinking water of children are responsible for the unsightly endemic dental defect known as mottled enamel. Previously, the devastating effects of volcanic and industrial fluoride emissions on livestock and vegetation had been recognized and were also of increasing concern. Moreover, the acute toxicity of fluoride in decigram (0.1 gram) amounts to humans was well documented, but the chronic, cumulative toxicity of milligram (0.001 gram) levels of intake still awaited investigation. Mottled enamel, or dental fluorosis, which results from fluoride interference with enamel-forming cells prior to tooth eruption, is one of the first visible signs of chronic fluoride poisoning.
  10. Dental surveys by the United States Public Health Service during the 1930s appeared to indicate less tooth decay (dental caries) among children in certain areas where dental fluorosis was found. At the time it was recognized, however, that such lower caries rates might be due, at least in part, to other components in the drinking water and/or diet besides fluoride. In fact, later work showed this was indeed the case. Nevertheless, the proposal was made to increase the fluoride content of ordinary low-fluoride water supplies to a level of about one part of fluoride ion per million parts of water as an effective way to reduce dental caries by 50 to 70 percent without causing significant dental fluorosis or other toxic effects. Subsequent findings, however, have shown that this goal has not been achieved. Dental fluorosis in fluoridated communities is more extensive and more severe than predicted, and the anti-caries effect of fluoridation has been found to be negligible or at best only marginal.

#### **FLUORIDATION AND DENTAL CARIES**

11. Within six years after the inception of trial studies in 1945, fluoridation was reported to have produced a dramatic reduction in the incidence of dental caries in children, and on June 1, 1950, the U. S. Public Health Service gave its approval and recommendation for widespread adoption of the procedure. Other health organizations quickly followed suit, thereby making it extremely difficult and often professionally suicidal for public health officials, physicians, dentists, and waterworks engineers not to support fluoridation, despite evidence that the original studies were seriously flawed and that verified harmful effects were being observed and reported. Having given their unqualified endorsement to fluoridation, leaders of many professional organizations were, and continue to be, reluctant to consider members in good standing who question or challenge fluoridation, no matter how strong their grounds for doing so may be. (Exhibits\_\_\_\_\_).
12. In the study by the Public Health Service of fluoridation in Grand Rapids, Michigan, the teeth of 19,680 children in 79 schools were examined in 1944-1945. (I was a senior at Union High School in Grand Rapids at the time and recall being examined.) After fluoridation began in January 1945, however, subsequent annual examinations were confined to the children (about 4000 to 5000) in only 25 schools, and the published data (Exhibit\_\_\_\_) show that much of the caries reduction after five years appeared to have occurred during the first year of fluoridation. Clearly, this indicated that the initial results from these 25 schools were not fully representative of the entire city and, to a considerable extent, were simply an artifact resulting from the change to a different study sample.
13. In 1951 the water supply of the control city, Muskegon, Michigan, which

had been showing a decline in tooth decay without fluoridation, began to be fluoridated. Decay rates in Grand Rapids were then compared primarily with those in naturally fluoridated Aurora, Illinois, without conceding, however, that a significant portion of the putative decrease in caries rates in Grand Rapids might have been occurring independently of fluoridation.

14. The potential for error from selective sampling can also be seen in the Newburgh-Kingston fluoridation study. Thus, in 1955, after 10 years of fluoridation, 58 percent less tooth decay was reported in the permanent teeth of about one third of the children 6 to 9 years of age residing in the fluoridated city of Newburgh, New York, compared to a similar group in the nearby nonfluoridated control city of Kingston. (Exhibit\_\_\_\_). On the other hand, in 1953 a comprehensive health examination of nearly all (97-98%) of the children in these two communities disclosed that 3139 out of 4969 children (63.2%) in fluoridated Newburgh had "dental defects" (including tooth decay), whereas there were only 2209 such children out of 5308 (41.6%) in nonfluoridated Kingston (Exhibit\_\_\_\_). Clearly, after eight years of fluoridation, children in Newburgh were worse off dentally than those in nonfluoridated Kingston.
15. During the 1960s and 1970s, tooth decay rates were, in fact, decreasing about as rapidly in nonfluoridated communities as in fluoridated ones. (Exhibit\_\_\_\_). In many cases these declining caries rates were occurring in places and countries before widespread use of fluoride supplements and fluoride dental products. Further declines in tooth decay among children in communities after 15 or more years of fluoridation are therefore more likely to be due to significant improvements in the nutritional quality of the diets of infants and children and improved dental hygiene rather than to fluoridation.
16. During the 1980s, large-scale dental surveys in the United States, Canada, Australia, and New Zealand, as well as data collected by the World Health Organization, failed to reveal significantly lower tooth decay rates among children living in fluoridated as compared to nonfluoridated areas, thereby casting further doubt on the generality of the conclusions reached in earlier studies. (Exhibits\_\_\_\_\_).
17. To illustrate, consider how the results of an official, large-scale, 1983-1984 dental survey of children in 84 (mainly rural) communities in the State of Missouri (exhibit\_\_\_\_) contradict those of an earlier nine-city Missouri survey, published in 1953, that purported to demonstrate lower caries rates with increasing natural fluoride levels in the drinking water (exhibit\_\_\_\_). In the 1983-1984 survey, 6819 life-long resident second and sixth grade children in various parts of the state were examined. Among the seven geochemical regions for which comparisons could be made, the higher and lower caries scores were equally distributed between the communities with "optimal" and "suboptimal" levels of fluoride in the drinking water. In the words of the authors (exhibit\_\_\_\_): "We found that caries prevalences do vary between the geochemical regions of the state. In the total sample, however, there were no significant differences between those children drinking optimally fluoridated water and those drinking suboptimally fluoridated water."
18. Contrary to the expectation of less tooth decay with 1-ppm fluoride in drinking water, surveys in India have revealed more, rather than less, tooth decay among persons drinking water containing the recommended 0.8-1.2 ppm fluoride than among those using water with 0.4 ppm or less. Similarly, in a large-scale survey of schoolchildren in Japan, more tooth decay was observed with 0.5-2.4 ppm natural fluoride in the drinking water than with only 0.2-0.4 ppm. (Exhibit\_\_\_\_). In poverty areas of Puerto Rico, "dental

- caries were [sic] common" with fluoridation, and "dental fluorosis was particularly prevalent among school and adolescent boys" (Exhibit\_\_\_\_).
19. Even an official survey in the United Kingdom found that, after 11 years of fluoridation, there was only a delay or retardation of cavities by 1.2 years, while the rate of decay remained essentially the same as in the nonfluoridated comparison control areas . (Exhibit\_\_\_\_). This same feature has been noted in many of the official U.S. studies.
  20. In 1987-1988, a dental survey of all 26,000 elementary school children in Tucson, Arizona, disclosed that, contrary to predictions, the highest percentages of tooth decay were found in the areas of supposedly optimal levels of fluoride (0.7-1.0 ppm) in the water, whereas the lowest percentages of tooth decay were recorded in children living in areas with the lowest suboptimal levels of fluoride (0.2-0.4 ppm) in the water. (Exhibit\_\_\_\_). The differences in caries rates did, however, correlate closely with access to good nutrition and dental care, with the highest caries scores being found among economically disadvantaged children residing in the higher fluoride areas. (Id.)
  21. Even from the standpoint of dental practice, fluoridation does not appear to make much difference. For example, again contrary to expectation, dental repair requirements of children residing from birth in eight midwestern fluoridated communities during the 1960s were found not to differ significantly from those in eight carefully matched nonfluoridated communities (Exhibit\_\_\_\_).

#### **FLUORIDE IN THE BODY**

22. Upon ingestion, fluoride is absorbed into the blood from the stomach and upper intestines, where it can sometimes cause gastric irritation and pain (see, for example, exhibit\_\_\_\_, Gibson). Within a few hours much of it is excreted, mainly through the kidneys, although some of it is retained in the body, primarily in the bones and teeth. The total concentration of fluoride (both bound and unbound) in the blood stays fairly constant at about 0.15 ppm (except after heavy intake), but the concentration of "free" ionic (unbound) fluoride is only about one-tenth this level, i.e., 0.005-0.02 ppm, and responds more directly to the amount of fluoride ingested.
23. Drinking water containing 1-ppm fluoride thus has a 50- to 200-fold higher concentration than the ionic level normally present in the blood. Intake at a level of 1 ppm therefore places the body under a certain amount of physiological stress, and, in the case of children, causes interference with the enamel-forming cells of the teeth, thereby resulting in dental fluorosis.
24. In young children, only about half the fluoride that is ingested is excreted. The rest gradually accumulates in the skeleton, teeth, and calcified sites in soft tissue organs. In adults the proportion of fluoride that is retained is significantly less than in children except when kidney function is impaired. Persons with nephritis, for example, have been found to excrete only about 60 percent as much fluoride as persons with healthy kidneys.

#### **REVERSIBLE NONDENTAL HARMFUL EFFECTS**

25. Since fluoridation is intended to reach and affect every member of the community, proof of its universal health safety is of overriding importance. Unfortunately, the original studies were not designed to detect nondental toxic effects of the type that have been reported since 1955. For example, in the Newburgh-Kingston study in New York State, the examination of urine



specimens for evidence of kidney changes contained this admission: "No specimens were taken if there was any history of clinical illness, no matter how mild, during the previous two weeks." (Exhibit\_\_\_\_). Since intermittent episodes of urinary tract irritation often occur in the preskeletal stages of chronic fluoride poisoning, the very persons who might have been found to have ill effects from fluoride were excluded from the study!

26. Although generally ignored or denied by proponents of fluoridation, direct clinical evidence of reversible toxic effects from 1-ppm fluoride in drinking water has been reported not only in the United States but abroad as well. Many of the symptoms are the same as those first recognized as a preskeletal phase of debilitating fluorosis by the distinguished Danish pioneer fluoride medical research, Kaj Roholm, in his studies on ailments in aluminum foundry workers. Because the symptoms are so common, they are easily and often mistaken as being due to other causes. Salient features include: unaccountable fatigue not relieved by extra sleep (thyroid depression), excessive thirst resulting in polydipsia and polyuria; muscular weakness, involuntary muscle spasms, joint and back pains and stiffness, urinary tract irritation, stomach distention and pains, mouth sores, skin rashes and itching, and visual disturbances involving the retina (Waldbott G., *Fluoridation, the Great Dilemma*, Coronado Press 1978, Chapters 9, 14 and pages 392-3). Such a broad spectrum of neuromuscular and gastro-intestinal symptoms is plausible in view of the marked ability of fluoride to affect and interfere with cell function, enzyme activity, and mineral metabolism.
27. When the illness is caused by fluoride in the drinking water, and is not too far advanced, the symptoms clear up or subside without medication simply by substituting distilled or other low-fluoride water for all drinking and cooking and avoiding foods high in fluoride, such as mechanically deboned meat, skin of chicken, bony ocean fish, tea, and gelatin manufactured with fluoridated water. Moreover, the symptoms and illness promptly return when the use of fluoridated water is resumed, and in many cases the diagnosis has been confirmed by blind or double blind challenge tests with coded bottles of fluoridated and nonfluoridated water. (Exhibit\_\_\_\_, Moolenburgh; exhibit\_\_\_\_).
28. Because the drinking water is rarely suspected as the source of these disorders, incorrect diagnosis ascribing them to other causes is very common. Yet even the Physicians' Desk Reference (45th Edition, 1991, p. 2173) warns of such toxic reactions to dental prescription supplements of fluoride for infants and children: "In hypersensitive individual fluorides occasionally cause skin eruptions such as atopic dermatitis, eczema or urticaria. Gastric distress, headache, and weakness have also been reported. These hypersensitivity reactions usually disappear promptly after discontinuation of the fluoride."
29. Persons who have or have a tendency toward allergy, asthma, kidney disease, diabetes, gastric ulcer, low thyroid function, and deficient nutrition are especially susceptible to toxic effects of fluoride in drinking water. Moreover, inadequate intake of calcium, magnesium, and ascorbic acid (vitamin C), as well as the presence of fluoride in beverages (especially tea), food, air, medications, tobacco, toothpaste, and mouthrinses can also precipitate or contribute to such intoxication.
30. As already noted, individuals with kidney impairment retain and store more fluoride than normal. They also are at greater risk for developing debilitating skeletal fluorosis.
31. The ability of 1-ppm fluoridated water to affect kidney function has been well demonstrated by in vivo mammal studies in the laboratory. Thus, after nine months on 1-ppm fluoridated drinking water, golden hamsters were

found to have undergone a 48 percent reduction in the activity of the enzyme succinic dehydrogenase in the kidney compared to animals on fluoride free water (Exhibit\_\_\_\_). Similarly, in squirrel monkeys, "significant cytochemical changes" were observed after 18 months in the kidney of animals drinking 1 and 5 ppm fluoridated water compared to controls drinking distilled water. (Exhibit\_\_\_\_). Moreover, in the final 10 months of the study, water consumption by the monkeys drinking the fluoridated water was significantly higher than by those on distilled water, just as has been found with many human adults in fluoridated communities.

### **IRREVERSIBLE NONDENTAL HARMFUL EFFECTS**

32. In addition to the testable reversible toxic effects already mentioned, 1-ppm fluoride in drinking water has been linked through epidemiological studies to a number of serious life-threatening disorders, including, among others: (1) increased rates of hip fractures among the elderly, especially women; (2) increased rates of certain types of cancer, such as osteosarcoma (bone cancer) in young males; and (3) increased rates of Down's syndrome births, particularly among mothers below the age of 35-40. A wide range of biochemical and biological laboratory data provides strong support for the validity of these associations.

#### **Hip Fractures**

33. First, with respect to a connection between fluoridation and increased rates of hip fractures among the elderly, a recent medical report from the State of Utah (exhibit\_\_\_\_) found nearly a doubling of the rate of hip fractures among women in the 75-year age group in the fluoridated area compared to women of this age group in the nonfluoridated control areas. Among men a similar increase occurred at age 80 and older. This study cites other recent investigations in the United States and the United Kingdom that agree with these findings. Because they are costly to treat and are often fatal, any increase in hip fractures with water fluoridation is clearly a matter of serious concern. (See also Exhibits\_\_\_\_\_).

#### **Cancer**

34. Second, although there is still considerable debate about the extent to which fluoridated drinking water may affect cancer death rates, recent findings concerning the incidence of osteosarcoma among young males point strongly toward an association with water fluoridation. In November 1992, the New Jersey Department of Health released a report showing a significantly higher incidence of osteosarcoma in males age 0-19 residing in fluoridated areas compared with those living in nonfluoridated areas. (Exhibit\_\_\_\_). When the female rates are subtracted from the male rates for this age group, an excellent internal control is obtained, and differences in these rate differences are significantly greater in the fluoridated areas than in the nonfluoridated areas, not only in this study but also in two other recent studies that have claimed to find no association between fluoridation and osteosarcoma.

#### **Birth Defects**

35. Third, in regard to fluoride and the birth defect known as Down's syndrome

(mongolism, or trisomy 21), epidemiological evidence showing a connection between the occurrence of Down's syndrome and the fluoride content of drinking water was first reported in 1956 in studies done at the University of Wisconsin. (Rapaport I. Bulletin of Academe Nationale De Medecine, 1956 140:524-531). This investigation of the distribution by urban birthplace of 687 cases of Down's syndrome under institutional care in Wisconsin, North and South Dakota, and Illinois showed that there was a statistically significant, two-fold higher frequency of such births per 100,000 inhabitants in cities with elevated natural fluoride in the water supply compared to cities with 0.2 ppm or less. A distinctly lower mean maternal age for the mothers of Down's syndrome babies was also seen in the higher fluoride communities, but only a relatively small increase in frequency was found after a few years of artificial fluoridation (in Illinois and Wisconsin). (Rapaport I. Extrait de L'ENCEPHALE, 1957 4:468-481).

36. In a second investigation designed to overcome objections to the first, all recorded cases of Down's syndrome born in the years 1950-1956 to mothers residing in cities of 10,000 to 100,000 population in the State of Illinois (and also those in cities of 5,000 to 10,000 population) were noted and classified according to the fluoride content of the mother's water supply. Again, the results revealed a statistically significant higher incidence ( $P < 0.001$ ) of Down's syndrome births with increasing fluoride content in the water. As in Wisconsin, the incidence was higher among younger mothers in the high-fluoride cities (and among older mothers in the low-fluoride cities), just as would be expected from different intake levels of a widespread cumulative genotoxic agent. Moreover, in agreement with the known ameliorating effect of calcium toward fluoride intoxication, a lower incidence of Down's syndrome births was found with high levels of calcium in the water supply.
37. Later studies on the incidence of Down's syndrome have claimed no significant increase with fluoridation, but in two of these studies (in Massachusetts and in Atlanta, Georgia), the incidence was about 15 percent higher in the fluoridated areas after a few years of fluoridation, just as would be expected from the earlier work already cited. Moreover, in the Atlanta study, in which maternal age-specific incidence rates were recorded, a distinctly higher rate was found for younger mothers in the fluoridated areas as well as for older mothers in the nonfluoridated areas, just as in the original work already mentioned, although the authors were evidently unaware of this fact.
38. Other research prior to 1978 showing a connection between fluoride and Down's syndrome is reviewed in Waldbott, Chapter 13. The only subsequent report bearing on this topic appeared in 1980. (Exhibit\_\_\_\_). In it the rates of Down's syndrome cases identified at birth varied by more than 10-fold, which, considering the large city populations involved, clearly reflected severe under-ascertainment. Even so, when the unrealistic zero rates are excluded, along with the dubious high rate in fluoridated Richmond, Virginia, the 15 fluoridated cities had a 15 percent higher mean rate of Down's syndrome births than the 15 nonfluoridated cities. Furthermore, when paired in decreasing order, the rates were lower for each nonfluoridated city than the corresponding fluoridated city (Exhibit\_\_\_\_). Such a relationship hardly seems fortuitous. Thus previous work showing an association between fluoridation and increased rates of Down's syndrome births actually appears to be supported rather than refuted by this report.

#### OTHER CONSIDERATIONS

39. An argument often advanced in support of fluoridation is that fluorine (as

fluoride ion, F-) is an essential trace nutrient element, and that drinking water containing less than 0.7 ppm fluoride should be considered "fluoride-deficient." The first contention has never been substantiated, and the second is simply a euphemism. No metabolic requirement for fluoride in mammals has ever been demonstrated, and, in many regions of the world, people whose drinking water contains only 0.1-0.2 ppm fluoride have excellent teeth that are relatively free of dental caries.

40. One of the most impressive studies demonstrating the lack of need for fluoride even found that the laboratory animals (mice and rats) eating an extremely low-fluoride diet (0.1-0.3 ppm) derived from yeast and a green alga were actually healthier, reproduced better, and lived considerably longer than their counterparts raised on standard laboratory chow containing about 20 ppm fluoride. (Exhibit\_\_\_\_\_).
41. From a technical standpoint, there are consequences and costs of fluoridation that were not anticipated. For example, significant increases in corrosion and break-down of piping and hot-water plumbing have been reported, especially from fluoridation of soft water supplies with hydrofluosilicic acid. Instances of accidental overfeed malfunctions responsible for episodes of mass poisonings and even several acknowledged fatalities have occurred in Alaska, Maryland, Michigan, Connecticut, and elsewhere. Clearly, the procedure is not always fail-safe and constantly poses an inherent potential risk, especially because elevated levels of fluoride are so much more difficult to detect by taste than, say, excessive amounts of chlorine.

### **CONCLUSION**

42. In conclusion, it is my best professional judgment that, in the light of what we now know, clear evidence of harm and a lack of provable dental benefit make continuation of fluoridation both unscientific and unjustifiable.
  43. Papers and articles cited as support in this affidavit were written by persons recognized as experts in their fields, and are of the type normally relied upon by experts in my field.
  44. I offer this affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**SAFE WATER ASSOCIATION, INC.,**

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**Plaintiff,**

**vs.**

**Case No. 92 CV 579**

**CITY OF FOND DU LAC,**

**Defendant.**

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**AFFIDAVIT OF ROBERT J. CARTON, Ph.D.  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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State of Maryland  
City of Adamstown

Robert J. Carton, Ph.D., being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

1. I am an environmental scientist currently with the U.S. Army. From September 1972 until May 1992, I was employed full-time by the U.S. Environmental Protection Agency (EPA). I spent approximately 15 of those years in the Office of Toxic Substances, managing risk assessments. For two years I was responsible for writing regulations under the Federal Water Pollution Control Act. I was also program manager for compliance of new pollution sources with the National Environmental Policy Act.
2. I was President of the union of EPA professionals for two terms. This union, the National Federation of Federal Employees, Local 2050, represented then, and still does, 1100 lawyers, scientists, and engineers at EPA Headquarters in Washington, D.C.
3. I received my B.A. in chemistry from La Salle University, Philadelphia, PA, my M.S. in environmental science from Drexel University, Philadelphia, PA, and my Ph.D. in environmental science from Rutgers University, New Brunswick, NJ.
4. I recently published an article on the U.S. Cancer - Fluoride situation (Exhibit\_\_\_\_), and have managed the preparation of a long list of reports and studies while an employee of EPA.
5. My field of study, interest and expertise, and my previous responsibilities as president of the union of EPA professionals, has led me to consider thoroughly, and, in an impartial manner, the scientific basis for the government's claims as to what constitutes a safe level of fluoride in drinking water.
6. During that investigation, I have discovered that the government, in its assessment of the risks of fluoride exposure, violated accepted standards of professional conduct.
7. In the spring of 1985, allegations of scientific misconduct in the development of EPA's fluoride in drinking water standard were made to the union by an EPA professional intimately familiar with the work on the standard.

8. In November of that year, EPA set a new Recommended Maximum Contaminant Level (RMCL) for fluoride in drinking water of 4 mg/l, which approximately doubled the dose considered to be safe (the previous standard was 1.4 to 2.4 mg/l).
9. As union president-elect, I investigated these allegations and concluded that the scientific documents supporting the decision to raise the RMCL were fraught with tendentious errors and omissions of key data, to the point of constituting scientific fraud.
10. My conclusions were summarized in a statement, given at a meeting of the Drinking Water Subcommittee of the EPA Science Advisory Board, Arlington, VA., on November 1, 1991 (Exhibit\_\_\_\_). In that statement I noted the following.
  - a. The fluoride in drinking water standard, or Recommended Maximum Contaminant Level (RMCL), published by the EPA in the Federal Register on Nov. 14, 1985, is a classic case of political interference with science.
  - b. The regulation is a fraudulent statement by the Federal Government that 4 mg/l of fluoride in drinking water is safe with an adequate margin of safety.
  - c. There is evidence that critical information in the scientific and technical support documents used to develop the standard were falsified by the Department of Health and Human Services and the EPA to protect a long-standing public health policy.
  - d. EPA professionals were never asked to conduct a thorough, independent analysis of the fluoride literature. Instead, their credentials were used to give the appearance of scientific credibility. They were used to support the predetermined conclusion that 4 mg/l of fluoride in drinking water was safe.
  - e. The EPA management ignored the requirements of the law to protect sensitive individuals such as children, diabetics or people with kidney impairment. Contrary to law, they made the criteria for considering health data so stringent that reasonable concerns for safety were eliminated. Data showing positive correlations between fluoride exposure and genetic effects in almost all laboratory tests were discounted.
  - f. EPA management based its standard on only one health effect: crippling skeletal fluorosis. In setting the safe level at 4 mg/l, however, they ignored data showing that healthy individuals were at risk of developing crippling skeletal fluorosis if these individuals happened to drink large quantities of water at the "safe" level of 4 mg/l. EPA's own data showed that some people drink as much as 5.5 liter per day. If these people ingested this amount of water containing 4 mg/l of fluoride, they would receive a daily dose of 22 mg. This exceeds the minimum dose necessary to cause crippling skeletal fluorosis, or "20 mg/day for 20 years" as stated by the EPA and Public Health Service. Most unsettling is the fact that EPA and the National Academy of Sciences can not document the scientific basis for the 20 mg/day threshold.
  - g. In a recent series of letters between National Academy of Sciences, Ms. Darlene Sherrel, and Sen. Graham of Florida, the NAS was forced to admit that it could not document the derivation of the chronic effect level for crippling skeletal fluorosis. As already mentioned, crippling skeletal fluorosis is the single health effect upon which the fluoride in drinking water standard is based. The threshold is probably lower.

- h. There is evidence, ignored by the EPA, in a study by Dr. Geoffrey Smith, that exposure to fluoride at 1 mg/l in drinking water over a long period of time may calcify ligaments and tendons, causing arthritic pains, and may be responsible for the alarming increase in cases of repetitive stress injury. (Exhibit\_\_\_\_)
  - i. EPA management relied upon a report from the Surgeon General which they knew was false. This report claimed to represent conclusions of an expert panel (on which the EPA was present as an observer) when in fact the concerns of this panel for the effects of fluoride on the bones of children, for its effects on the heart, for dental fluorosis, and for the overall lack of scientific data on the effects of fluoride in US drinking water were deleted. It has been reported in the press that these changes were made in the final report without the knowledge or approval of the expert panel.
  - j. The EPA accepted the falsified report from the Surgeon General's office and asked a contractor to turn this into an "assessment." The contractor dutifully collected only literature that supported the report. The report was submitted for public comment, but was never altered to incorporate the volumes of information sent in by world class experts. Any opinions contrary to the report were dismissed. The result is actually a "Draft" stamped "Final."
11. The apparent coverup of fluoride risks within EPA prompted the EPA professionals' union, Local 2050 of the National Federation of Federal Employees, to attempt to file an amicus brief in support of the Natural Resources Defense Council, who sued EPA in 1986 over the fluoride standard. I was responsible for managing the preparation of the brief, which was prepared by the law firm of Lord, Day and Lord of New York City.
12. EPA has also attempted to silence scientists who do not follow the party line. Last year, EPA fired Dr. William L. Marcus, Ph.D. from his job as senior toxicologist in the Office of Drinking Water, EPA. Judge, David A. Clarke, Jr., declared in his decision on this case on December 3, 1992, that "the reasons given for Dr. Marcus' firing were a pretext....his employment was terminated because he publicly questioned and opposed EPA's fluoride policy." Judge Clark ordered Dr. Marcus to be reinstated and provided with back pay, fringe benefits and interest, attorneys fees, and paid \$50,000 in compensatory damages. I testified at length at this hearing.
13. I believe there is a high probability of significant harm to public health from fluoridation and that it is unacceptable as a public health measure.
14. My conclusions regarding the lack of safety of both EPA standards and of fluoridation are based in part on the following:
- A. As noted in my statement to the Subcommittee of the Science Advisory Board, EPA management relied upon a report from the Surgeon General which it knew was false. (Exhibit\_\_\_\_).
  - B. Dental fluorosis is considered a visible sign that potentially destructive effects of fluoride are also occurring in bone. EPA reported in 1985 that mild dental fluorosis occurs in areas with fluoride levels in drinking water as low as 0.2 mg/l. Objectionable dental fluorosis, i.e. pitting and staining of enamel, was reported by EPA to occur in some individuals at 0.7 mg/l.

Despite this knowledge, EPA, even though aware that the report of the Surgeon General's expert panel had been altered, nevertheless followed this altered version and declared in 1985 that dental fluorosis was not an adverse health effect. Transcripts of the closed-door testimony of this panel, obtained under the Freedom of

Information Act, show that they in fact voted to declare dental fluorosis an adverse health effect. Their declaration was doctored by unknown individuals to achieve a political end: If objectionable dental fluorosis were declared an adverse health effect, as it should be, then fluoridation at 0.8 to 1.2 mg/l would be in violation of the Safe Drinking Water Act.

- C. Crippling skeletal fluorosis is the only adverse health effect accepted by EPA, and the only one it considered in setting the MCL of 4 mg/l. According to EPA, this effect occurs when an individual is exposed to more than 20 mg/day for 20 years or more. EPA, however, cannot document the rationale for selecting this effect level in accordance with accepted regulatory procedures. In fact, the government does not know what level of fluoride in water can cause crippling skeletal fluorosis. Thus, its 4 mg/l standard has no scientific basis.
  - D. In violation of standards of scientific conduct requiring that the MCL protect all citizens, EPA set a level that will cause crippling skeletal fluorosis in 20 years for about 1% of the population, according to its own stated toxic dose of 20 mg/day, and its own data showing 1% of the population drinks more than 5.5 l/day.
  - E. In further violation of professional ethics, it can also be demonstrated that EPA did not consider, in deriving its standard, arthritic pains - the earliest sign of crippling skeletal fluorosis, and did not derive a safe dose for this effect. Thus, while recommending the addition of fluoride to drinking water, the government does not know the lowest effect level for this stage of the disease. There was evidence available to EPA in 1985, which it ignored, that exposure to fluoride at 1 mg/l in drinking water over a long period of time calcifies ligaments and tendons causing arthritic pains, and may be responsible for the alarming increase in cases of repetitive stress injury.
  - F. It is clear that fluoride is mutagenic, and that it may well cause cancer, although both are continuously denied by the government. Buried in the report of the National Toxicology Program study on the effects of fluoride in rats and mice were the results of a battery of four genetic toxicology studies showing fluoride to be a mutagen. Three studies were positive for mutagenicity and one was negative. The negative study was invalid based on testimony of the originator of the test itself, Dr. Bruce Ames.
- 15. It is my best judgment, reached with a high degree of scientific certainty, that fluoridation presents unacceptable risks to public health, and that the government cannot prove its claims of safety.
  - 16. I further swear that the statements regarding fluoridation made by me on the CBC broadcast "Marketplace," aired 11/24/92, were true and correct when made, and remain true and correct today.
  - 17. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**SAFE WATER ASSOCIATION, INC.,**

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**Plaintiff,**

**vs.**

**Case No. 92 CV 579**

**CITY OF FOND DU LAC,**

**Defendant.**

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**AFFIDAVIT OF DR. JOHN COLQUHOUN  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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Nation of New Zealand  
City of Auckland

Dr. John Colquhoun, being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

**BACKGROUND**

1. I am a dentist and historian, now living in retirement after a career as a researcher, dental practitioner and public health official.
2. I graduated in dentistry from the University of Otago in New Zealand in 1948. After 7 years service in the national School Dental Service, as a teacher and administrator, I entered private practice.
3. In 1971, I became Principal Dental Officer for the Auckland Health District. During this period I carried out research in both dentistry and Auckland social history.
4. Until 1980, I was a keen advocate of water fluoridation. In that year, 1980, I was sent on a world study tour by the New Zealand Department of Health, for the purpose of investigating recent research into fluoridation. On my return I was appointed to the post of Chairman of the Fluoridation Promotion Committee of the New Zealand Dental Health Foundation.
5. After returning from the study tour, I reported the then new discovery that dental decay was declining in "western" counties, with or without fluoridation, and that the differences between decay rates in fluoridated and nonfluoridated places were much less than we had claimed would occur.
6. Nonetheless, like many of my professional colleagues today, I was most reluctant to admit that fluoridation was a failure. I advocated, and my superiors agreed to a new approach based on the belief that fluoridation still provided a marginal benefit. I was reinforced in that belief by my superiors' claim that new statistics, collected for all New Zealand School Dental Service patients (98% of our child population) revealed such a benefit.

**"Doctoring" of Data**

7. I was shocked to discover, when the statistics were sent to me, they revealed no such benefit. In fact, in most Health Districts the percentage of children

who were "caries-free" was higher in the non-fluoridated areas than in the fluoridated areas. I disagreed sharply with my superiors' action in circulating a document, "overview of fluoridation statistics," which omitted the above information, disgracefully "doctored" the remaining statistics, and claimed that a marginal benefit existed.

8. When, in addition, I discovered that dental fluorosis prevalences (a sign of fluoride toxicity) were much higher than expected in fluoridated areas, I publicly changed my stance on fluoridation in 1983.
9. I have continued my research, which gained me a Doctor of Philosophy degree in 1987, and appointment to the post-doctoral position of Honorary Research Fellow of the University of Auckland. Last year (1992) I became editor of the Journal of the International Society for Fluoride Research (Fluoride), a position which provides a good overview of fluoride research in different academic disciplines

### **BENEFITS OF FLUORIDATION**

10. Large reductions in dental decay have occurred in nonfluoridated areas of developed countries, comparable to those in fluoridated areas and sometimes evident before fluorides were used. (Exhibits\_\_\_\_\_).
11. Predicted large differences in tooth decay rates between fluoridated and nonfluoridated communities do not exist. The reductions have continued in fluoridated areas after the maximum (life long) exposure to fluoride.
12. The evidence points to changes in diet and immunity being more likely explanations for most of the reductions. Studies claiming a large benefit from fluoridation, based on data from small selected samples, are not supported by new data from larger surveys and child populations.
13. Most New Zealand water supplies were fluoridated following reports of "spectacular reductions" in dental decay during the nation's first fluoridation trial in the city of Hastings.
14. In actuality, Health Department files, which became available for public scrutiny after application under New Zealand's Official Information Act, revealed that the reductions in dental decay in Hastings were mainly the result of instructions to change diagnostic procedures in School Dental Clinics, affecting the definition of "decay" and the number of fillings inserted. (Exhibit\_\_\_\_\_).
15. The instructions were given after the study commenced and in the area of the experiment only, but were not mentioned in published reports of the study. The experimental control city was abandoned when its decay rates were found to be lower than in fluoridated Hastings.
16. The revelations about the Hastings fluoridation trial have not been refuted. There is no doubt about the good intentions and sincere commitment of the professionals who conducted the experiment. They had faith in their theory that fluoridation would provide an immense benefit, based on their acceptance of evidence from the United States. The remainder of this affidavit examines that evidence and faith.

### **"Classic" Studies**

17. The 'classic' research of fluoridation led to it's endorsement in the 1950s. The research was in two stages: that establishing acceptance of an inverse fluoride-caries relationship (towns with higher natural water fluoride levels were supposed to have lower average levels of tooth decay); and the North American fluoridation trials.

18. Researchers in the United States Public Health Service claimed to establish an inverse relationship between natural water fluoride levels and dental caries. This inverse relationship was in addition to an earlier established direct relationship between water fluoride levels and prevalence of dental fluorosis. Dean reported the fluorosis relationship based on studies in the 1930s of hundreds of United States communities. (Dean T. Distribution of mottled enamel in the United States. Public Health Reports 1933; 48: 703-734.)
19. In contrast, his famous 1942 report of an inverse fluoride-caries relationship, which became the basis of widespread endorsement and practice of water fluoridation, presented data from only 21 communities in four States. Yet data from earlier caries surveys in hundreds of communities were available to Dean. The question arises: why did Dean present only 21 of them?
20. The early fluorosis studies, mainly by others, were reported on by Dean who included on his survey forms a place for each child's caries status. Although not as uniformly collected as his later personal surveys, caries data were included in the array of fluorosis surveys, as well as in a survey made in 1933-34 in 26 States, which did not include data on fluorosis.
21. Only two cities from Dean's 1938 paper on caries data were included in his 1942 paper. Some data from the 1933-34- survey (particularly for Indiana and Ohio) were included, but not data from South Dakota and Wisconsin. Proponents argue that Dean could not have had enough data on fluoride levels from latter communities. In fact, he had a great deal of data from South Dakota. (Dean HT, Elvove E, Poston RF. Mottled enamel in South Dakota. Public Health Reports 1939; 54:212-28.)
22. In 1939 he and McKay reported fluorosis data from 375 areas in 26 States which included also caries data. These caries data could have been compared with later data from low-fluoride areas where fluorosis was not endemic. Instead, caries scores from only a few of the communities were ever published.
23. Dean argued that he had to limit his analysis to the smaller number of cities because of the need to have reliable information like water histories. But Dean later acknowledged that even the 21 cities' water histories were not accurate using his own criteria, namely continuous exposure of the observed group during childhood and an unchanged water source. (Exhibit\_\_\_\_\_).
24. Critics argue that the earlier data from the other communities, which were collected with less pro-fluoridation bias, should also have been reported. Also, factors other than fluoride (e.g. socio-economic and dietary differences, or other drinking water elements), not considered by Dean and other authors, could explain the variations in caries incidence. After Dean's studies reporting an inverse fluoride-caries relationship, about 23 others followed. They all presented data from selected communities.
25. Critics claim that belief in a fluoride-caries relationship at low natural water-fluoride levels, on which the whole fluoridation theory rests, arose from presentation of highly selected data. (Exhibit\_\_\_\_\_).
26. When all the available data are put together there is a clear fluorosis correlation with low levels of water-fluoride (Exhibit\_\_\_\_\_, Figure 2), while the dental caries correlation is much less evident (Exhibit\_\_\_\_\_, Figure 3).
27. Proponents have argued that the studies providing the caries data set in Figure 3 had been carried out by different examiners using different standards of diagnosis. That does not explain why Dean reported on only 21 communities in his classic study, out of the hundreds for which data were available. Also, a similar argument would apply to the dental fluorosis data set in Figure 2, because the assessment of dental fluorosis is also subject to diagnostic variation.

28. It seems clear that fluoride ingestion is more strongly related to fluorosis than to dental caries, and that the claims of an inverse relationship between caries and water fluoride was at best exaggerated. It is true that caries are affected by more factors than is the case with fluorosis. But, given the magnitude of the claimed fluoride benefit, one could reasonably expect a fluoride-caries correlation to be much more evident in Figure 3. Recent data and some from the past do not support such a relationship. (Exhibit\_\_\_\_\_).

### **North American Fluoridation Trials**

29. The preliminary results from the first (Grand Rapids-Muskegon) North American fluoridation trial, which commenced in 1945, led to the official endorsement of fluoridation in 1950, by the United States Public Health Service, soon followed by the Dental and Medical Associations and various other professional organizations and authorities. Other critics (Exner, Sutton & Ziegelbecker) drew my attention to the flaws in this trial, which are described.
30. The preliminary results had claimed a 51.3 per cent reduction in decay, after 4 1/2 years, for children aged 6 years in Grand Rapids. But when we look at the scores for 6-year-olds which were published three years later, we find that an impossible 70.45 per cent reduction was recorded in the first year of the trial and that there was then an increase but no overall reduction in the following years.
31. The explanation is not hard to find. All children from the 79 schools in Grand Rapids were examined at the commencement of the trial, but in succeeding years only a selected sample, claimed to be representative, being the children from 25 of the 79 schools. In the control city of Muskegon all children were examined throughout the period.
32. Examination of the published data for other age groups also confirms that the sample of 25 schools was not representative of the population being studied. The reported DMFT of some age groups, approximately one year after the initial examinations, was lower than that of the same children when they were a year younger! For example, the 10-year olds had DMFT 4.9 in 1945. In 1946, when they had become 11-year-olds, they had DMFT 4.2.!
33. Fluoridated water cannot turn decayed, missing and filled teeth into sound ones. It follows that the large recorded tooth decay reductions, which were mostly in the first year, resulted from selecting an unrepresentative sample.
34. Muskegon was fluoridated 6 1/2 years after the trial commenced, and was lost as an experimental control. An official report at the time has revealed that decay had also declined in the control city. (J Am Water Works Assoc 1956; 44:1-9).
35. A critical examination of other early fluoridation trials revealed similar flaws, also detected by others. The basic limitations of the classic fluoridation trials were described over 30 years ago: poor research design including inadequate experimental controls, poor adjustment of sample size, lack of 'blind' examinations to safeguard against examiner bias and variability, inadequate baseline measures and negligible statistical analysis. (Exhibit\_\_\_\_\_).

### **Recent Evidence**

36. In 1989 I visited Geneva and collected, from the World Health Organization's Oral Health Data Bank, the records of extensive caries surveys in countries where water fluoride levels were also recorded

- (Bangladesh, Greece, Hungary, Libya, Malta, Morocco, Nigeria, Spain, Zimbabwe). In none of the countries is a fluoride-carries relationship evident.
37. The late Professor Jackson, a leading British fluoridation proponent, commented: "On the question of efficacy, we do not have to rely on the inadequate studies of the past". But recent fluoridation studies claiming a benefit are little better than the early ones. A prime example is the "Anglesey" study of which Jackson was Principal author.
  38. Critiques of that study explained why its claimed "strictly blind conditions" were worthless: a fluoridated semi-rural island was compared with a non-fluoridated "control". The control, chosen years after the study commenced, with no pre-fluoridation information on it, was mainland urban area that one would expect to have a higher caries rate. The critiques have not been refuted. (Exhibit\_\_\_\_\_).
  39. Other examples are the Wick and Stranraer non-blind studies in Scotland, which claim to show, by comparing the "DMFT" (or "dmft" for temporary teeth) of small samples of young children, that dental decay increased suddenly after fluoridation of the local water supplies was stopped.
  40. In Stranraer the DMF of 10-year-olds was reported to rise, after defluoridation, by only 4 per cent in 6 years, the increase consisting wholly of the "missing and filled" component.
  41. In Wick, the children examined for the study were 5-to 6-year olds who have few if any permanent teeth. The 'rise' consisted almost entirely of a 61 per cent increase in the number of temporary teeth extracted (this is the "m" component - the "decayed and filled" component increased by only 0.4%). Such an increase reflects a change in the treatment pattern of Wick dentists, following the decision to defluoridate. No doubt the dentists believed they were responding to real increases in decay. But statistics obtained from much larger numbers of children show no increase in dental decay following cessation of fluoridation.
  42. Space does not permit here a critique of the numerous other recent studies. Methods of selecting compared groups are not always clear. Younger age groups are frequently chosen, which leaves unanswered the question whether fluoride only delays the onset of caries. Most studies are not blind, and are conducted by committed fluoridationists. The most damning criticism is the observation of Diesendorf that one still cannot find a single properly-controlled blind fluoridation trial in which the test and control populations are similar and were chosen randomly. (Exhibit\_\_\_\_\_).
  43. In contrast to the fluoridation studies, much well-designed dental research indicates that local ('topical') applications of fluoride are more effective in arresting tooth decay than are systemic uses which lead to "fluoride-induced toxicological problems". This research has been reviewed by European dental scientists who argue that water fluoridation is no longer necessary.
  44. Defenders of fluoridation have suggested that, although some inadequacies may have been present in the early fluoridation studies, the fact that almost all of them agreed in their results was a confirmation of their findings. Diesendorf has observed that a large number of poor studies does not equal one good one. Quantity is no substitute for quality of research.
  45. Diesendorf has also pointed out (personal communication 1988) that the reported decay reductions were nearly always the same (mostly 50-60% in permanent teeth) whether one measured the difference between test and control groups at a fixed time, or between the same test group at different times. There is no way that the independent variables involved could always be the same. The extreme uniformity of results should be taken as evidence that papers which obtained the magical 50-60 per cent reduction were more likely to be submitted for publication and to gain approval by referees and

- editors.
46. Structures and processes studied in the social sciences include "professional networks and the institutionalization of a single mind set". Thomas Kuhn and others have described the hold which scientific theories, once accepted, can exert on the minds of the professional communities involved. Subsequent research becomes "a strenuous and devoted attempt to force nature into the conceptual boxes supplied by professional education". Dental and medical students learn only the case in favor of fluoridation.
47. Fluoridation has been described as dentistry's "magic bullet". The concept of selective toxicity - of injuring harmful cells or agents in the human body without damaging other cells-originated with Paul Ehrlich, a founder of modern medical science and chemotherapy. According to this still prevalent system of belief, diseases are caused by hostile agents which can be destroyed without harm to the rest of the body by a magic bullet, which takes the form of a wonder drug (such as salvarsan). An antibiotic (such as penicillin), a magic metal (such as radium) or some other instrument of high technology. Our enthusiastic readiness to support fluoridation reflected an earnest desire to find a simple solution to the problem of rampant dental decay. We also believed that fluoridation would not abolish tooth decay entirely, but would reduce it to controllable levels.
48. Re-examination of fluoridation research suggests that early biases, albeit unconsciously held, were strong. In the first phase of the classic research the investigators expected to find less decay in mottled teeth, and were intent on finding quantitative data which they felt certain existed.
49. In the fluoridation trials which commenced in 1945 the experimenters had in mind the 50-60 per cent reduction which had been claimed to occur in naturally fluoridated areas, and their primary concern appears to have been to produce the same results. The subjective nature of caries diagnosis and the fact that the examiners were usually fully aware which children had been exposed to fluoridated water, would facilitate such results.
50. The inadequacies of the method of measuring caries prevalence which was chosen for the fluoridation trials ("DMF", or number of "decayed, missing and filled teeth or tooth surfaces) have been noted elsewhere. (Exhibit\_\_\_\_). Using the chosen measure, any comparison of tooth decay in groups of children, even with a single examiner, is influenced by different diagnostic standards. That is because the DMF which the examiner records includes a count of fillings and extractions performed earlier by various dentists.
51. Even in the rare 'blind' study (examiner unaware whether or not a child had received fluoride) the dentists who filled or extracted the child's teeth usually were aware, so professional bias could still influence the results.
52. After fluoridation became official policy in 1950, the intense public controversy would make it politically necessary that the results come out 'right'. In one rare published case the early results were not right, after three years' trial. (Scrivener CA. Unfavorable report from Kansas community using artificial fluoridation of city water supplies for three year period. J Dent Res 1951; 30:465, Exhibit\_\_\_\_).
53. How many such 'wrong' results were simply not reported or published cannot be known. In view of the revelations already made, it seems probable that, as in the Hastings study, the tendency would be to make the results come 'right'. When facts did not fit the theory, they were made or interpreted to conform to the theory.
54. The time has arrived to acknowledge the weaknesses and flaws in the theoretical foundation of fluoridation.

## HEALTH AND SAFETY RISKS

55. Fluoridation was endorsed before environmental issues and possible long-term effects became the concerns which they are today, and which have led many countries to reject fluoridation. For example: Denmark banned fluoridation on the recommendation of its Agency for Environmental Protection which pointed out that long-term effects on some people (such as bottle-fed infants, and older people with impaired kidney function) were not known.
56. In Sweden, which has also rejected it, a Commission reported that "the combined and long-term environmental effects of fluoride are insufficiently known." Holland discontinued it after reports of adverse effects (and tooth decay has continued to decline in Holland, despite the warnings of an increase if fluoridation, was stopped).
57. Czechoslovakia and Finland stopped it last year. Even in Canada where health authorities still endorse fluoridation, the National Research Council has reported that "accumulation of fluoride in animals and man induces metabolic and biochemical changes, the significance of which has not yet been fully assessed."
58. Although the U.S. Environmental Protection Agency still officially supports fluoridation, its own employed scientists have publicly challenged its fluoride policies, which they allege are continued because of political pressures and cover-ups. (Exhibit\_\_\_\_, Carton; exhibit\_\_\_\_, Marcus).

### Dental Fluorosis

59. Indirectly related to questions of safety are reports that the fluoride type of tooth mottling is much more prevalent and severe than was originally predicted. The mottling, called dental fluorosis, consists of patches of softened, more porous tooth enamel.
60. This mottling effect was originally described as a sign of fluoride toxicity (and it still is, outside the English-speaking medical world).
61. Recent studies report that in fluoridated communities dental fluorosis affects 25-50 per cent of the children, some so severely that their teeth are discolored and pitted. (Exhibits\_\_\_\_\_). Only 10-12 per cent, with barely detectable mottling, had been predicted by proponents.
62. Critics of fluoridation have difficulty believing that only tooth-forming cells are damaged by fluoride, and suspect that other adverse effects have been similarly underestimated. There is evidence of more general harm. (Exhibit\_\_\_\_\_).
63. A New Zealand cohort study has reported that, far from fading (as we claimed would occur with the mild form found following fluoridation) the condition in some children deteriorates, resulting in teeth of "unsatisfactory appearance"-that is, the patches become discolored and pitted.
64. Some of the authors of these reports suggested lowering present levels of fluoride intake in order to reduce the mottling. As a result, two cities, Dunedin and Hastings, have lowered their water fluoride level to below 1 part per million.

### Skeletal Fluorosis

65. We have always known that fluoride can affect bones as well as teeth, causing osteofluorosis, which is difficult to differentially diagnose from the various kinds of arthritis.

66. It was claimed however that this disease occurred only after high doses, resulting in increased bone mass and high fluoride content of the bones. In fact, high doses were sometimes deliberately given to treat osteoporosis, a disease in which bone mass is decreased. But last year and this year, comprehensive studies in America and Britain - far more thorough and comprehensive than any previous ones - have suggested that fluoridated water, as well as fluoride treatment for osteoporosis, actually makes bones more fragile and liable to fracture. (Exhibits\_\_\_\_\_).
67. Fractured bones in old people are increasing. Hip fractures are reaching epidemic proportions. Rockwood revealed that hip fractures in New Zealand have more than tripled over the past 38 years. (Exhibit\_\_\_\_\_).
68. It is claimed that these recent studies are not relevant to the fluoridation issue for two reasons. First, the recent studies showed only weak correlations between fluoridated water and hip fractures and such an association, it is argued, does not establish a cause. However, confounding variables were considered in the studies (unlike the earlier ones which claimed that fluoride reduced fracture risk) and the correlations, though weak, were significant - more significant and stronger, actually, than the inverse associations now claimed between fluoridated water and tooth decay.
69. The second argument is that very high doses were used in the clinical trials of fluoride treatment of osteoporosis. But Finnish studies have reported high bone fluoride levels in old people who drank fluoridated water for more than 10 years (levels as high as some recorded following fluoride therapy for osteoporosis) especially if they had osteoporosis or impaired kidney function. (Alhava et al., Acta Orthopaedica Scandinavica 56 161-166 1985).
70. Even normally functioning kidneys excrete only around half the fluoride we ingest. Children's and especially infants' kidneys, and impaired kidneys, excrete even less. The rest accumulates in the skeleton. We have always known that, but we believed the effect from fluoridated water would be insignificant - and early studies based on small populations in naturally fluoridated areas seemed to support our view. Now recent studies on large populations suggest a long term cumulative detrimental effect.

#### **Fluoride Sensitivity**

71. Research in other countries has shown that some people are sensitive to fluoridated water, suffering adverse effects like skin rashes and gastric upsets. We should remember how slow the medical profession was to recognize the existence of food sensitivity.

#### **Overdosing of Babies**

72. Nature filters fluoride out of the milk of animals and humans. So bottle-fed babies drinking milk made from fluoridated water receive much higher doses of fluoride than occurs in nature. (Exhibit\_\_\_\_\_). Defenders of fluoridation admit that this happens, but claim no harm has been proven. The possibility of harm should be investigated, but so far has not been.

#### **Uncontrolled Dosing of the Population**

73. Fluoride is a poison, comparable to arsenic and lead, as any toxicology textbook can confirm. It is a powerful inhibitor of many biological processes. Although the concentration of fluoride in drinking water can be



- controlled, the actual dose received by each member of the public is uncontrolled (and therefore unsafe), because it depends on how much water or other fluoride-containing substances each person consumes.
74. Fluoridation to any level remains uncontrolled dosing with a toxic substance which accumulates in the bodies of humans and animals, as well as in soils and plants.

### **CONCLUSION**

75. It is my best judgment, reached with a high degree of scientific certainty, that fluoridation is invalid in theory and ineffective in practice as a preventive of dental caries. It is dangerous to the health of consumers.
76. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**SAFE WATER ASSOCIATION, INC.,**

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**Plaintiff,****vs.****Case No. 92 CV 579****CITY OF FOND DU LAC,****Defendant.**

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**AFFIDAVIT OF MARK DIESENDORF, Ph.D.  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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Country of Australia  
City of O'Connor

Mark Diesendorf, Ph.D., being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

**BACKGROUND**

1. I am presently Coordinator of the Global Change Program of the Australian Conservation Foundation, one of Australia's largest community-based environmental organizations. I also have a private consultancy, called Science in the Public Interest.
2. From 1988 to 1990 I was a Senior Research Fellow in the Australian Institute of Health, which is the Australian Government's health statistics institute, and leader of the Medical Services Group within that Institute. For part of that period I was also acting-head of the Health Services Division of the Institute.

During the period from 1985 to 1988 I was both a Visiting Fellow and a Lecturer in the Human Sciences Program at the Australian National University, Canberra.

From 1975 to 1985 I was a Senior Research Scientist and later a Principle Research Scientist in the Division of Mathematics and Statistics, Australian Commonwealth Scientific and Industrial Research Organization, known as CSIRO. In the early 1980s I was also leader of the Applied Mathematics Group within that Division.

From 1971 to 1975 I was first a Queen Elizabeth II Fellow and then a lecturing Fellow in applied mathematics at the Australian National University, Canberra.

3. I received my BSc with first class honours in physics from the University of Sydney in 1964, and my PhD in applied mathematics from the University of New South Wales in 1968.
4. Over the past 20 years, I have devoted considerable time to researching the

safety and effectiveness of artificial water fluoridation. I have published a number of articles in recognized journals and periodicals on the subject of fluoridation, including:

- a. Diesendorf M. Is there a scientific basis for fluoridation? *Community Health Studies* 4:224-230, 1980.
- b. Diesendorf M. The mystery of declining caries (letter). *Community Dentistry & Oral Epidem.* 17:106-107, 1989.
- c. Diesendorf M. The mystery of declining tooth decay. *Nature*; 322:125-9, 1986.
- d. Diesendorf M. A re-examination of Australian fluoridation trials. *Search*; 17:256-61, 1986.
- e. Diesendorf M. & Sutton PRN Fluoride: New grounds for concern. *Ecologist* 16:237-242, 1986.
- f. Diesendorf M. Is Fluoride Effective? *Fluoride* 20:2, 51-53, 1987.
- g. Diesendorf M. Misleading publicity for a fluoridation trial(letter). *N. Z. Medical Journal* 101:832-833, 1988.
- h. Diesendorf M. Anglesey fluoridation trials re-examined. *Fluoride* 22:53-58, 1989.
- i. Diesendorf M. Have the Benefits of Water Fluoridation been Overestimated? *Intern. Clin. Nutr. Review*, 10:2, 292-303, 1990.
- j. Diesendorf M. The Health Hazards of Fluoridation: a Re-examination. *Intern. Clin. Nutr. Review*, 10:2, 304-321, 1990.

### **EFFECTIVENESS OF FLUORIDATION**

5. Fluoride in milligram per day doses is not necessary for life or for sound teeth. Not a single person has ever been shown to have a genuine "deficiency" of fluoride.
6. There is now a substantial body of evidence that the mechanism of action of fluoride is on the surface of teeth, and that there is little or no benefit in swallowing fluoride. Thus the argument for fluoridating drinking water is weakened still further. (Exhibit\_\_\_\_\_).
7. Over the past 20-30 years there have been large declines in tooth decay in both fluoridated and nonfluoridated communities in the western world. Today, 99.5% of people in western continental Europe, 91% in Britain, 34% in Australia and 50% in the USA, Canada and New Zealand do not consume fluoridated water. Still, there have been very large reductions in tooth decay in the nonfluoridated regions of all these countries. (Exhibits\_\_\_\_\_).
8. Traditionally it has been claimed that there are scores of studies on fluoridated communities from around the developed world which prove or "demonstrate" that water fluoridation has enormous benefits. In practice, those studies which have been re-examined critically have been found to be very badly designed and/or executed.
9. At best these studies show that tooth decay has been declining in fluoridated regions, but the evidence also shows that there are over 20 studies showing that tooth decay has also been declining in unfluoridated areas. (Exhibit\_\_\_\_\_).
10. The early cross-sectional surveys of tooth decay in naturally-fluoridated communities in the USA by Dean claimed to find an "inverse relationship" between fluoride concentration in drinking water and tooth decay (DMFT). But although Dean studied hundreds of communities, he published the results for only 21. (Exhibit\_\_\_\_\_). Such highly selected data are unlikely to give unbiased results!
11. The early "trials" of artificial fluoridation in North America have been severely criticized in a detailed scientific monograph by Sutton

- (Exhibit\_\_\_\_), on the grounds of major failings in experimental design, statistical analysis and selective quoting of results. Most reviews of the alleged benefits of fluoridation still cite the early trials as if they were "gospel," and omit to cite Sutton's critique of them.
12. The design inadequacies of some of the well-known fluoridation trials conducted in various parts of the world are summarized as follows:
    - a. In not one of the Australian fluoridation trials has there been simultaneous observation of changes over time in tooth decay in the test community and an appropriate nonfluoridated control population. (Exhibit\_\_\_\_).
    - b. In the two trials held in Anglesey, Wales, in the 1970s and 1980s, the "control" was chosen 19 years after fluoridation of Anglesey, from a known high-tooth-decay area. This negated the benefit of the blind examinations of teeth. Moreover, the test population was rural while the "control" was urban, and so they are not comparable. (Exhibit\_\_\_\_).
    - c. In the Hastings, New Zealand trial, the decline in tooth decay resulted mainly from instructions to dental therapists to find and fill fewer cavities. The instructions, which were never mentioned in published reports of the trial, were revealed in material obtained by Colquhoun by means of a request under the Official Information Act. (Exhibit\_\_\_\_).
    - d. In the Grand Rapids study, almost all the reductions in tooth decay occurred in the first year. The official results also imply that tooth decay was decreasing with increasing age or, in other words, that fluoridation was actually filling cavities. Since these results are impossible, they must reflect sampling errors.
    - e. In the study of fluoridation at Tamworth, Australia, a large part of the reported reduction in tooth decay occurred too late in time to have been caused by fluoridation.
  13. Results running counter to the alleged inverse relationship have been reported from time-independent surveys in naturally fluoridated locations in India, Sweden, Japan, the United States, and New Zealand. (Exhibit\_\_\_\_).
  14. In Australia in 1987, the prevalence of decay in the permanent teeth of elementary school children in the unfluoridated Australian state capital city of Brisbane was equal to or less than that in the fluoridated state capitals of Adelaide, Perth and Melbourne. (Exhibit\_\_\_\_).
  15. It should be noted that I am comparing similar populations: all are major cities by Australian standards, with similar socio-economic class. Many pro-fluoridation studies make inappropriate comparisons, such as comparing fluoridated large cities with unfluoridated small rural towns (which have different socio-economic and dietary patterns from the large cities, and hence different levels of tooth decay).
  16. Colquhoun has reported on tooth decay in all 12- and 13-year-olds in the major cities of New Zealand in 1984 and 1986. He found that tooth decay in unfluoridated Christchurch is approximately the same as in all the other major cities in New Zealand, which are fluoridated. (Exhibit\_\_\_\_).
  17. The results from a 1986-1987 survey of US school children by the NIDR, with data from dental examinations of 39,207 children in 84 areas throughout the US, showed no significant reduction in tooth decay in fluoridated areas. (Exhibit\_\_\_\_). This supported the findings of an earlier Missouri study (Exhibit\_\_\_\_).
  18. In animals, experiments are often much better designed and controlled than with humans. In the laboratory rat, which seems to be generally regarded as a good model for caries in humans, it was found that no decay reduction

could be obtained from an implanted subcutaneous device which released fluoride slowly into the bloodstream (and from there to the saliva). (Exhibit\_\_\_\_\_).

### SAFETY OF FLUORIDATION

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19. Most assessments and reviews of the "safety" (i.e. health hazards) of water fluoridation, which have been written from a pro-fluoridation prospective, have only considered the health implications for the "average person." This is a natural consequence of focusing on fluoride concentrations in drinking water rather than on the range of daily doses actually ingested by people.
20. The proper approach to risk assessment in toxicology protection is to identify the high-risk groups in the community and to set safety standards for daily doses with sufficient margin to protect them with a high degree of certainty. If only the risks to the "average" member of the community are known, a "safety factor" of 10 is normally used to allow for high-risk groups. Any other major uncertainties are compensated for by increasing the "safety factor". (Klaassen, C.D., Principles of Toxicology (1986)).
21. Such an approach has not been followed for water fluoridation, which was introduced long before the growth in awareness of environmental chemical and physical health hazards of the 1970s.
22. By estimating the fluoride intake of some of the high-risk groups and by reviewing the published scientific literature, it is found that there can be no safety margin for members of some of these groups if they consume water fluoridated at 1 ppm.
23. The most obvious high-risk groups are those which consume large daily doses of tapwater, such as infants who are fed on powdered formula reconstituted with fluoridated water, long-distance runners and other sportspeople, outdoor labourers and diabetics. People with malfunctioning kidneys are also at high risk, since the kidney is responsible for excreting fluoride.
24. The fluoride intake from the major contributors to the fluoride dose (tapwater in the home and that used in commercial processing of food and beverages) can be estimated from a recent survey of "total water" and "tapwater" intake by 26,000 people in the USA. (Ershow & Cantor, National Cancer Institute, 1989. (Exhibit\_\_\_\_\_)).
25. In the Ershow survey, the average daily intake of all participants was 2.07 (plus or minus 0.80) liters of "total water", including 1.19 (plus or minus 0.70) liters of tapwater. The large value of the standard deviation demonstrates the importance of determining the high-consumption groups rather than simply focusing on the averages.
26. The percentile distribution shows that 5% of participants had a daily "total water" intake greater than 3.55 liters, and 5% had a "total water" intake of less than 1.01 liters. This wide range shows the difficulty of trying to medicate a whole community safely and effectively through the water supply.
27. For estimating the risk of diseases such as skeletal fluorosis, it may be more appropriate to consider the top 1% of water drinkers. This group has a daily "total water" intake of greater than 4.65 liters. For adult males aged 20-64, the average intake is 2.5 liters, but 1% consume 5.5 liters or more of "total water."
28. For water fluoridated at 1 ppm, 1 liter contains 1 mg of fluoride. Natural fluoride in raw food could add daily another 0.3-0.8 mg, while other items such a fluoride tooth pastes and tea drinking add still more.
29. In summary, based on the comprehensive US survey, it is likely that about

1% of the adult population in a fluoridated area ingest daily about 6-7.5 mg fluoride, excluding fish and tea. (Exhibit\_\_\_\_). These results are similar to the earlier estimates of the Royal College of Physicians, which gave "maximum" daily intakes of 6 mg excluding tea. (Royal College of Physicians, 1976).

30. Breastmilk has one-hundredth of the fluoride content of artificially fluoridated drinking water. Therefore, infants who are fed on powdered formula reconstituted with fluoridated water receive at least 100 times the fluoride intake of breastfed babies. This is accepted as a fact by both sides of the fluoridation debate.
31. In my view, to deliver such an unnaturally high fluoride intake to the most sensitive age-group of human beings is a violation of the principles of toxicology and of medical ethics.
32. The fluoride intakes of 6-month old infants, who are fed on powdered formula reconstituted with fluoridated water, are typically 4-6 times the daily doses recommended by US pro-fluoridation pediatricians for fluoride supplements in nonfluoridated areas. (Exhibit\_\_\_\_).
33. The very low traditional estimates of fluoride consumption in fluoridated areas must be discarded as being unrealistic, and contrary to the evidence.

### **Dental Fluorosis**

34. Dental fluorosis is a particular type of mottling of teeth which is caused only by the ingestion of fluoride during early childhood. In its milder forms, which are ranked as grades 1 and 2 on Dean's classification index, dental fluorosis comprises opaque white patches which cover less than 50% of the enamel surface. The more severe grades, 3 and 4, can involve dark brown staining and pitting of the fluorosed enamel.
35. On the basis of controlled-dose studies, it is stated that a substantial proportion of children suffer dental fluorosis of grades 1 and 2 when doses exceed 0.1 mg/kg of body weight/day. (Exhibit\_\_\_\_). It is claimed that the "Optimal" dosage to reduce subsequent tooth decay is 0.05-0.07 mg/kg/day, though as Leverett has pointed out, there is little direct evidence to support this claim (Exhibit\_\_\_\_).
36. Even if this were true, the safety margin between 0.07 (beneficial) and 0.1 (harmful) is very small. Indeed, the wide variation in dose from drinking fluoridated water makes it inevitable that a significant proportion of children in fluoridated areas will have dental fluorosis.
37. In the 1930s, in naturally fluoridated areas where fluoride concentration was about 1 ppm, Dean observed dental fluorosis of grades 1 and 2 in about 10% of children, but none of greater severity. Recent evidence shows that the prevalence and severity of dental fluorosis have increased in both fluoridated and nonfluoridated areas, but these increases are generally much greater in fluoridated areas.
38. In several recent American studies, the prevalence of all grades of dental fluorosis ranged from 26% to 51% in fluoridated areas, while the more "objectionable" grades 3 and 4 affected 1% - 2% of children. (Exhibits\_\_\_\_).
39. Dental fluorosis is generally believed to be a result of disturbance or damage to the ameloblasts, the cells which are responsible for the development of the dental enamel. As such, it is an indicator of physiological damage or disease, rather than simply a "cosmetic effect."

## Skeletal Fluorosis

40. When fluoride is ingested by adults, about 50% is excreted by the kidneys (provided that they are working normally) and almost all the remainder is stored in the bones. In infants and young children, there is evidence that considerably more than 50% is stored in the bones.
41. Skeletal fluorosis is a disease involving changes in the structure of bones and calcification of ligaments, which results from the chronic intake of fluoride over a period of years. Early clinical stages resemble arthritis, with patients experiencing pain and stiffness in bones and joints. Restriction of movement occurs in the spine, mainly in the cervical region, but also in the lower back, shoulder joint, hip and knee.
42. The conventional wisdom on skeletal fluorosis, in reports which have a pro-fluoridation perspective, is that there are no osteosclerotic changes in "temperate countries" when the fluoride concentration in drinking water is below 4 ppm, and there are no "clinically significant" changes, except for dental fluorosis, below 8 ppm.
43. It should be noted that fluoride doses are not usually specified in the conventional wisdom, only concentrations. However, the EPA and other regulatory agencies have stated that crippling skeletal fluorosis results from intakes of fluoride of 20 mg/day over periods of 20 years or more. But these agencies do not justify this figure, nor do they give a figure for the dose causing crippling skeletal fluorosis over a lifetime, which is surely lower.
44. In addition, they do not give a figure for skeletal fluorosis which produces clinical symptoms but is not crippling. Such pain and stiffness in bones and joints is simply ignored.
45. The "conventional wisdom" -- that there are no osteosclerotic changes when the fluoride concentration in water is below 4 ppm and no "clinically significant" changes below 8 ppm -- is wrong. Skeletal fluorosis with clinical indications has been reported for over 25 years in the refereed medical literature from at least 4 countries (including USA) from places where the fluoride content of drinking water is less than 2.5 ppm. Given the lack of training western doctors receive on skeletal fluorosis, it is very likely that early stages of the condition (including pain and stiffness) are being misdiagnosed as arthritis in artificially fluoridated areas. (Exhibit\_\_\_\_).
46. In India there have been several reports of skeletal fluorosis with serious complication where fluoride concentrations in drinking water were below 1.5 ppm.
47. What is the prevalence of people of average mass who live in fluoridated areas and are in the top 1% of water drinkers throughout their lives? They may be at risk of skeletal fluorosis because as infants they were formula-fed, as children they drank water-based beverages rather than cow's milk, and as adults they had strenuous outdoor jobs or exercised heavily.
48. In the pro-fluoridation literature, there is a strong tendency to regard people who are at high risk of adverse effects from fluoridation as abnormal and somehow unworthy of protection by the same standards which are applied by toxicologists as a matter of course to other chemicals.
49. There have been no properly conducted scientific studies to investigate the prevalence of skeletal fluorosis within the high-risk groups -- only reassuring anecdotes from medical researchers and dentists with vested interests in the use of fluoride for therapy or as a preventive medicine.
50. Skeletal fluorosis is a well-known public health problem in several naturally fluoridated areas of the world. Most artificially fluoridated areas were only fluoridated in the 1960s and 1970s. In such regions it is still too early to expect to see enhanced levels of skeletal fluorosis in epidemiological

surveys of the general population. A survey of subsets of the population which are at high risk might be useful. Unfortunately, such surveys have not been performed scientifically.

### **Hip Fractures**

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51. Clinical trials have shown that fluoride therapy for osteoporosis increases bone fracture rates, contrary to the previous belief. (Exhibit\_\_\_\_\_).
52. There is now evidence that this hazard may extend down to the much lower fluoride doses received from fluoridated drinking water. Since 1990, four epidemiological studies have been published from the USA and Britain, showing that there is an increased rate of bone fractures (notably hip fractures) in older people in fluoridated areas. (Exhibits\_\_\_\_\_).
53. Proponents of fluoridation point out that the increase in fracture rates is fairly small. But I believe that it will inevitably become greater with time, until people have become exposed to fluoridation from birth to old age. Hip fracture is fatal in about 25% of cases.

### **Hypersensitivity**

54. Clinical reports of hypersensitivity to 1 ppm fluoride in drinking water or 1 mg/day in fluoride tablets have been published by Waldbott, Feltman, Shea, Grimbergen and Petraborg (Exhibits\_\_\_\_\_).
55. These reactions include some of the following symptoms:
  - gastrointestinal upsets;
  - skin rashes (also after bathing in F- water);
  - mouth sores;
  - migraine-like headaches;
  - arthritic-like pains;
  - dryness of the mouth;
  - excessive water consumption;
  - chronic fatigue;
  - depression;
  - nervousness; and
  - respiratory difficulties.

These symptoms subside after discontinuation of exposure to fluoride. In many cases the association has been confirmed by blind and double blind-challenges. (Exhibits\_\_\_\_\_).

56. The standard response of proponents of fluoridation and pro-fluoridation reports has been to quote a statement by the Executive Board of the American Academy of Allergy that: There is no evidence of allergy or intolerance to fluorides as used in the fluoridation of communal water supplies.

Dr. Waldbott, a Fellow of that same Academy, has responded that: Curiously, none of these prominent scientists had carried out research on the health effects of fluoride; no hearings were held on the subject and no inquiries were made of the members of the Academy regarding fluoride poisoning among their patients.... The Bibliography did not include any of my original publication on chronic fluoride poisoning... (Waldbott, Fluoridation: the Great Dilemma, 1978).



Clearly the statement by the Executive Board cannot be regarded as a scientific refutation of the published reports of hypersensitivity.

57. Waldbott also pointed out that the Academy's statement was apparently made at the request of the pro-fluoridation USPHS and that most of the members of the Executive Board of the Academy had received grants from the USPHS. Four members of the Board actually received grants around the time that their statement was published. Therefore, at least several members of the Executive Board were in a situation of potential conflict of interest.
58. Another response to reports of fluoride hyper-sensitivity has been to take the position that the reports should be ignored until those making them can produce a theoretical mechanism to explain their observations. This position appears to be inconsistent with modern scientific method which places empirical observation before theories.

### **CONCLUSION**

59. The fluoridation of drinking water delivers an uncontrolled dose of a chronically toxic substance to consumers. In artificially fluoridated areas the prevalence and severity of dental fluorosis is increasing. Reports of hypersensitivity reactions in the medical and dental literature have not been refuted scientifically.
  60. Skeletal fluorosis has been reported in naturally fluoridated areas of at least 4 countries where the fluoride concentration ranges from 0.7 to 2.5 ppm. In Britain and the USA, there is a much higher rate of hip fractures in older people in fluoridated than in nonfluoridated areas. Both skeletal fluorosis and hip fractures are likely to become prevalent among high-risk groups (people with malfunctioning kidneys and/or high water intake) in artificially fluoridated areas in people who have been exposed to 1 ppm fluoridated water from infancy to old age.
  61. It is my best judgment, reached with a high degree of scientific certainty, that fluoridation is invalid in theory and ineffective in practice as a preventive of dental caries. It is dangerous to the health of consumers.
  62. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**SAFE WATER ASSOCIATION, INC.,**

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**Plaintiff,****vs.****Case No. 92 CV 579****CITY OF FOND DU LAC,****Defendant.**

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**AFFIDAVIT OF DR. RICHARD G. FOULKES  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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State of Washington,  
City of Bellingham

Dr. Richard G. Foulkes, being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

**BACKGROUND AND EXPERIENCE**

1. I am a practicing physician and private consultant in Health Services in Abbotsford, B.C., Canada.
2. I have served as a Special Consultant to the Minister of Health of British Columbia 1972-1975, during which time I was Commissioned by the Government of the Province of British Columbia to study the entire health care system of the Province and make recommendations for "rationalization" and program improvement.
3. I was appointed as a Clinical Assistant Professor in the Dept. of Health Care and Epidemiology of the University of British Columbia, 1973-1976.
4. I received my B.A. (1950) and M.D. (1954) from the University of British Columbia and certification in Hospital Organization and Management from the Canadian Hospital Association and the University of Manitoba (1964).
5. I have written more than 46 published articles on various aspects of the Health Care Delivery System. The most important publication for the purpose of this affidavit being my Commissioned Report, "Health Security for British Columbians", 1973.
6. In this major Canadian study, I dealt with the issue of fluoridation of drinking water as part of the review process and recommended that it be made "mandatory." I have now completely reversed this position.
7. From information readily found in reputable journals with peer review mechanisms, as well as in various government documents, it is clear that the fluoridation of water supplies can no longer be held to be either safe or effective in reducing dental caries.
8. I was elected Fellow of the American Public Health Association in 1970, "in recognition of superior professional stature and community leadership."
9. My field of study, health care services delivery systems and policy planning, has lead me to re-consider thoroughly and in an impartial scientific manner, research into the safety and effectiveness of artificially fluoridated drinking

water ("fluoridation").

## EFFECTIVENESS OF FLUORIDATION

10. In theory, fluoridation is a public health procedure. Its advocates state that it is effective in reducing or preventing dental caries without any adverse effects.
11. This health effect will occur, they say, provided that the concentration of fluoride in the drinking water is maintained at an "optimal level" that is usually given as 0.7 to 1.2 parts per million (ppm) or milligrams per liter (mg/l).
12. Publications that promote fluoridation refer to the 1942 study by Dr. H. Trendley Dean of the U.S. Public Health Service (USPHS) of 7,257 children, 12 to 14 years old, in 21 US cities as "proof" of the theory that there is an inverse relationship between the concentration of fluoride in the water and dental caries. In other words, more fluoride, fewer cavities. Further, that a level of about 1 ppm will provide an anti caries effect with minimal tooth "mottling", now known as dental fluorosis.
13. In 1960, Dr. Dean, known as the "father of fluoridation", was cross-examined in the law suit to enjoin fluoridation of Chicago's water (Schuringa v Chicago).
14. Dean, under cross-examination by Mr. Dilling, aided by F.B. Exner, M.D., F.A.C.R., a recognized international authority on fluoridation, was forced to admit that his early studies of Galesburg, Quincy, Monmouth and Macomb, and his later studies of 21 cities with 7,257 children, did not meet his own criteria of "lifetime exposure" and "unchanged water supply" and were, therefore, worthless.
15. Dr. Exner prepared an "Analytical Commentary" on Dean's testimony. Exner refers to the transcript and exhibits that show that not only were the basic criteria lacking in Dean's work, but also random variations found in both high and low fluoride areas cancelled out any "benefits" that appeared in the high fluoride vs. lower fluoride cities. (Exhibit\_\_\_\_\_).
16. Scientific proof that the basic theory upon which fluoridation rests is false has been shown in a number of studies.
  - a. Professor Y. Imai in Japan found that there were minimum caries in that country at 0.3-0.4 ppm and that above this, caries increased markedly. (Exhibit\_\_\_\_\_).
  - b. In 1981, R. Ziegelbecker of the Austrian Institute for the Environment, and who is held in high esteem in Europe, published his analysis of ALL of the data available to that time, including Dean's 21 cities, and showed:
    - The prevalence of dental caries in children aged 12 to 14 from 136 communities with drinking water containing 0.15 - 5.8 ppm fluoride shows no relationship with the concentration of fluoride naturally in drinking water. (Exhibit\_\_\_\_\_).
  - c. Professor Teotia of the L.L.R.M. Medical College, Meerut, India, who has studied endemic fluoride in India for thirty years, concluded that:
    - Normal water (less than 1 ppm) and adequate calcium nutrition provide maximum protection against dental fluorosis and caries. (Exhibit\_\_\_\_\_).

### **Suspect "Clinical Trials"**

17. All of the promotional literature presents as "evidence" for the effectiveness of fluoridation a series of trials in North America in which fluoride at "optimal" levels was added to water in a number of cities, the dental effect of which was to be compared to "control" cities over time.
18. These "experiments" were started in 1945 and involved the cities of Newburgh, Grand Rapids, Evanston and Brantford, with Muskegan, Kingston and Oak Park as "controls."
19. According to Dr. Philip Sutton, who carried out an extensive critique of these studies in 1959 ("Fluoridation Errors and Omissions in Experimental Trials"), the endorsements of fluoridation by Medical and Dental organizations and even that of the WHO (1958) appear to be based on the reported "results" of these experiments. (Exhibit\_\_\_\_\_).
20. Sutton concluded that:
  - The sound basis on which the efficacy of a public health measure must be assessed is not provided by the five crucial trials.
21. Sutton's critique shows that the results reported were effected by poor experimental and statistical methods, failure to consider random variation, examiner variability and failure to eliminate examiner bias.
22. Sutton's analysis also points to the falsification of data. Specifically, he points to Muskegan, a "control" city, that was reported to show no change in the DMFT (Decayed Missing and Filled Teeth) when the opposite was true. There was a decline in caries over the observation period in the nonfluoridated city. Sutton speculates that this was the reason for the fluoridation of Muskegan, rather than "popular demand," that ended the experiment.
23. Sutton's conclusions were that there is no way that these "experiments" support the reduction in caries claimed by the promoters. Over the time period of the trials, there was a reduction in dental caries. However, these reductions took place in both fluoridated and unfluoridated areas.

### **Studies showing fluoridation not responsible for decline.**

24. A number of studies show that tooth decay reductions are taking place in the developed world in both fluoridated and nonfluoridated areas.
25. Mark Diesendorf, PhD., a Principal Research Scientist and Lecturer at the Australian National University, studied reports of the DMFT in both fluoridated and nonfluoridated areas in eight developed countries over a period of thirty years.
26. He found that significant reductions found in both fluoridated and nonfluoridated areas could not be attributed to the fluoridation. (Exhibit\_\_\_\_\_).
27. John Colquhoun, B.D.S., PhD., former Principal Dental Officer, Dept. of Health, Auckland, New Zealand, and Research Fellow, University of Auckland, showed that in his country, caries reduction was taking place before the introduction of fluoridation, and before the introduction of topical fluorides and fluoride tooth paste. (Exhibit\_\_\_\_\_).
28. Dentists trained by the US National Institute for Dental Research (NIDR) performed examinations on 39,207 school children aged 5-17, in 84 areas throughout the US. Dr. John Yiamouyiannis, a noted American Fluoride researcher, carried out a detailed analysis of this data, and published it in Fluoride.
29. Dr. Yiamouyiannis reported a statistically reduced dmf in five year olds with life-long residence in fluoridated areas. This was expected and is caused by

a delay in eruption of teeth due to the effect of fluoride. The difference is no longer significant in six year olds, and disappears entirely among eight year olds.

30. Overall, the massive study showed no statistically significant differences in the decay rates of permanent teeth or the percentages of decay-free children in the fluoridated, nonfluoridated or partially fluoridated areas. (Exhibit\_\_\_\_\_).

## SAFETY OF FLUORIDATION

31. "Adverse effect" is terminology frequently used in medicine to denote a "hurtful" or "injurious" outcome of exposure to any element having the potential to cause the effect.
32. The evidence is undeniable that fluoride, naturally occurring in water supplies in high concentrations, produces major disability in millions.
33. Studies from India (Exhibit\_\_\_\_\_), China and Africa are clear in attributing severe crippling dental and bone disease (Osteofluorosis) to long term ingestion of fluoride.
34. There are studies from the late 19th century that demonstrate the toxic effects of fluoride on plants; insects; animals, including those domesticated by man; and man himself.
35. The classic work of Kaj Roholm in Denmark (Fluorine Intoxication, a Clinical - Hygienic Study, 1937) showed in detail the consequences of exposure of workers in that country to the dust of a fluoride-containing ore.
36. There are numerous in vitro studies in the literature showing adverse effects of fluorides on animal and human cells. Many of these are reviewed in the publication of the National Research Council of Canada "Environmental Fluoride", Rose and Marier, 1977. (Exhibit\_\_\_\_\_).
37. When the concept of fluoridation to the "optimal" level of 0.7 to 1.2 ppm was first conceived in the 1940's, the total intake of fluoride by children was estimated to be about 0.5 mg each day.
38. Today, it is estimated to approximate more than 3 mg/day in fluoridated and 2 mg/day in unfluoridated areas, even for two year olds. The ingestion by adults in fluoridate areas probably exceeds 6 mg/day. (Exhibit\_\_\_\_\_).
39. It should be noted that these estimates are based on the intake of a 44 lb. child and a 110 lb. adult. Intake of a 200 lb male athlete or heavy industrial worker replenishing himself with food and water in a fluoridated area is likely to be in excess of 12 mg/day.
40. Initially, the "optimal" level of fluoride (1.0 ppm) was established with the knowledge that an intake of 1 mg/day by the child during tooth forming years would produce dental fluorosis of some degree in 10 percent of children.
41. Today, the much higher levels of ingested fluoride are related to the consumption of fluoridated water, food and beverages prepared in fluoridated areas, as well as mouth washes, tablets, drops and dentifrices. There can also be a contribution from the atmosphere and fluoride containing medications.
42. Approximately 40 percent of fluoride is retained in the body, and most of the remainder is excreted through the kidneys.
43. Retained fluoride is cumulative and has a predilection for teeth and bones and, secondarily, soft tissues.
44. Adverse effects of fluoride are caused by the interference with the activities of enzymes of various types. These are exerted on teeth, bone, cartilage and, possibly thyroid, kidneys and other body tissues.
45. The amount of fluoride ingested and its effects are highly dependent on age,

sex, weight, physical activity, environmental temperature, nutritional status of the individual, as well as the amount of fluoride to which the individual is exposed in food, drink, medication, atmosphere, etc.

### **Hypersensitivity**

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46. The "bell-shaped" curve is frequently used in medicine and toxicology to represent the manner in which individuals react to the effects of specific chemical agents. There is no reason to think that fluoride is different. A number of individuals experience significant adverse reactions to this substance at levels that produce no obvious ill effects in the majority.
47. Experimental evidence is available that shows that multiple symptoms can be produced in sensitive individuals by water fluoridated at the "optimal" level. These symptoms, which may involve all the body's systems, including cardio-vascular, gastro-intestinal, dermatological and neurological, are relieved by switching the patient to nonfluoridated water.
48. Dr. George Walbott of the US and Dr. G.W. Grimbergen of the Netherlands both carried out "double blind" studies that demonstrated this. (Exhibit\_\_\_\_). Rose and Marier, in their report, list the systems reported to be effected in sensitive individuals. (Exhibit\_\_\_\_).
49. There are also reports of genetic syndromes that are brought to the fore by fluoridated water and are cleared by switching to nonfluoridated. One of these is Gilbert's Syndrome, hyperbilirubinemia (jaundice). (Exhibit\_\_\_\_).
50. These sensitive individuals probably fit into the first part of the bell-curve. While they are a minority of the population, the effects are clearly adverse to the victims.

### **Dental Fluorosis**

51. Dental Hypoplasia is a disorder caused by interference with the normal process of tooth formation. The earliest sign is failure to properly mineralize the tooth surface, which shows as white flecks. In moderate and severe cases, the teeth become discolored (brown to black) from chemicals in the mouth.
52. Additionally, dental fluorosis can cause the teeth to become pitted, brittle and chipped. When cavities occur, in many cases the teeth break away when filling is attempted, so that fillings cannot be anchored properly, and the tooth must be extracted.
53. Dental fluorosis is increasing. A.I. Ismail showed in 1990 that there is an incidence in Quebec of 50 percent in some groups of school children. (Exhibit\_\_\_\_). A recent study in British Columbia has shown dental fluorosis at this level in a nonfluoridated area.
54. This is no surprise. It is generally considered that 0.75 to 1.0 mg/day of fluoride is sufficient to cause fluorosis in children. Total intake shown in Exhibit\_\_\_\_ is high enough in foods and fluids alone to cause dental hypoplasia.
55. Dental fluorosis is not merely "cosmetic," as claimed by some promoters. It is also an adverse or injurious effect, with serious implications for the future development of skeletal fluorosis and/or bone and joint cancer.

### **Skeletal Fluorosis**

56. Skeletal fluorosis is a disease caused, like dental hyperplasia, by the action of ingested and retained fluoride on enzyme processes. In this instance,

- those responsible for proper bone growth.
57. It has been demonstrated, by the use of photo-micrographs, that fluoride may cause disruption in both bone and adjacent cartilage. (Prof. Miklos Bely, National Institute of Rheumatology, Hungary, "special lecture," 19th Conference of the International Society for Fluoride Research, Kyoto, Japan, September 8, 1992).
  58. On x-ray the cortical (outside) structure appears thickened. But in fact the bone is weakened by resorption of the trabeculae (inner supporting structure). In extreme cases, individuals are crippled, bed-ridden and may suffer from neurological complication owing to spinal cord compression by overgrowth of the vertebrae.
  59. Teotia has reported that "continuous intake of more than 2.5 mg of fluoride per day for more than 6 months deposits 4000 to 6000 ppm of fluoride, and causes detectable radiological changes of fluorosis. (Exhibit\_\_\_\_\_).
  60. Data cited above (exhibit\_\_\_\_\_) show that this amount of fluoride per day is exceeded in children in "optimal" fluoridated areas. It is exceeded in adults, when food and beverage intake alone are considered.
  61. "Benefits and Risks 1991" states that 20-80 liters of "optimally" fluoridated water per day for 10-20 years is required to develop skeletal fluorosis. This is greatly exaggerated. Nonetheless, fluorosis is dependant upon the actual amount of the element ingested and retained. Since fluoride is cumulative, the SAME exaggerated point should be reached by ingesting 10 mg/day for 20 years, or 5 mg/day for 40 years.
  62. It is known that some men drink 5-6 quarts of water per day. This 5-6 mg of fluoride is ample to achieve the equivalent level in 34 years. A male in excess of 200 lbs. could show signs of skeletal fluorosis at an even early time. Even the exaggerated level supposedly required to cause harm stated in "Risks and Benefits" can and will be reached by most men over a lifetime.

#### **Fractures of the Proximal Femur (Hip)**

63. To 1992, a number of studies showed a correlation between the concentration of fluoride in drinking water and fractures of the hip in the elderly (65 years and older). Among the most recent are:
  - . Jacobsen, S.J. et al, J.A.M.A. Vol 266; No 4; July 25, 1990.
  - a. Cooper, C. et al, J.A.M.A. Vol 266; No 4; July 25, 1990.
  - b. Sowers, M.R. et al, Am Jour Epidem; Vol 133; No 7; 1991.
  - c. Colquhoun, J. New Zeal Med Jour; P343; 14 Aug 1991.
64. "Benefits and Risks 1991" presents some of these, but presents Cooper's original finding of "no relationship", and conveniently omits his reversal of opinion after the recalculation presented in J.A.M.A.
65. On August 12, 1992, J.A.M.A. published the paper "Hip Fractures and Fluoridation in Utah's Elderly Population." (Exhibit\_\_\_\_\_).
66. This study showed "a small but significant increase in the risk of hip fractures for both men and women exposed to artificial fluoridation at 1 ppm, suggesting that low levels of fluoride may increase the risk of hip fractures in the elderly." The increased risk for women was 1.27, and 1.41 for men.

#### **Chromosomal (Genetic) Abnormalities**

67. Dr. Ional Rapaport showed in two studies in the US, 1956 & 1959, that the incidence of Down's Syndrome (Mongolism) was higher in fluoridated areas. These studies were published in the Bulletin of the French Academy.

68. "Benefits and Risks 1991" states that these findings have been refuted, although they have not. One of the so-called "refutations" a study by Dr. J.D. Erickson entitled "Water Fluoridation and Congenital Malformations: No Association", actually presented confirmation of Rapaport's findings. Erickson showed a 15 percent higher overall rate of Down's Syndrome births in the fluoridated areas of metropolitan Atlanta and revealed a higher age-specific rate among younger mothers in fluoridated areas, as did Rapaport in Wisconsin and Illinois.
69. Dr. Schatz, the co-discoverer of the antibiotic "streptomycin," reported in his study of Chile the rate of infant mortality in three areas examined, and the number of deaths due to congenital malformations. (Exhibit\_\_\_\_\_).
70. This long-term study showed infant deaths resulting from congenital abnormalities, and found that Curico (F 1 ppm) had 244 percent more such deaths than San Fernando (no F) and 94 percent more than La Serena (F 0.67 ppm), and 288 percent more than Chile as a whole.
71. Schatz stated in his report:
  - o The large scale, overall statistical studies which compare total populations in fluoridated and control cities in the US actually conceal the information they purportedly seek. This occurs because the relatively well-nourished majority numerically overwhelms those groups in the under-nourished minority which are most susceptible to fluoride toxicity.

### **Cancer**

72. The study given most prominence in showing a cause and effect relationship between artificial fluoridation and deaths from cancer in the US is that of Dr. Dean Burk, former Head of Biochemistry, US National Cancer Institute (NCI) and Dr. John Yiamouyiannis.
73. The original study was reported in 1975, revised twice by Burk, and published in 1977. These dates are important, as promotional materials for fluoridation point to the earlier study and criticisms of it but do not report on the later study which, in spite of unsupported statements in "Benefits and Risks 1991", has not be refuted.
74. The study compared the 10 largest cities in the US fluoridated since 1952-1956, with the 10 largest American cities with comparable cancer death rates during the pre-fluoridation time period (1944-1950), but not fluoridated as of 1969. This study was based on an analysis of cancer deaths in a population of 18 million.
75. The study showed that, in the US, there are 10,000 to 20,000 excess deaths annually from cancer in those persons residing in fluoridated vs nonfluoridated areas. (Exhibit\_\_\_\_\_).
76. Debate regarding this study led to investigations by a subcommittee of the US Congress. A brief from Dr. Yiamouyiannis prepared for the House Subcommittee on Intergovernmental Relations, Sept. 21, 1977, presents details of attempts made to refute Dr. Burk using faulty data. (Exhibit\_\_\_\_\_). Information emerged in the subcommittee hearing that the NCI had not, to that date (1977), and after 30 years of fluoridation, carried out adequate animal studies to ascertain the cancer producing potential of fluoridation.

### **Bone Cancer and Osteosarcoma**

77. The most recent study on the possible relationship between fluoridation and osteosarcoma was prepared by Perry D. Cohn, PhD, M.P.H. of the New



- Jersey Dept. of Environment. (Exhibit\_\_\_\_\_).
78. Three municipalities in New Jersey were studied for the incidence of osteosarcoma in both fluoridated and nonfluoridated areas. The ratio of cases in fluoridated vs nonfluoridated areas was 5.1 to 1. The areas were carefully screened to define artificially fluoridated and nonfluoridated populations.
79. In studies in Seattle and Iowa, the rates of both sexes for bone and joint cancers rose 47 percent in fluoridated areas, and declined 34 percent in nonfluoridated areas.

## CONCLUSIONS

80. I have based my conclusions about fluoridation upon research and evidence that is scientifically sound, and of the type usually relied upon by experts in my field.
81. My conclusions regarding fluoridation, achieved by adding hydrofluosilicic acid or sodium fluoride to attain the "optimal" fluoride concentration of 0.7 - 1.2 ppm are as follows:
- . Hydrofluosilicic acid is a toxic waste product and has no positive health effects on the human body.
  - a. The theory that dental caries and fluoride levels have an inverse relationship is false. The "experimental trials" that have been the basis for fluoridation have been shown to be invalid, and, possibly, fraudulent. Dental caries have declined in developed countries independently of fluoridation. Studies of large numbers of school children show no significant difference between those living in fluoridated areas compared to those in either partially or nonfluoridated areas.
  - b. Fluoride even at the "optimal" level has been shown to cause serious injurious and adverse effects in humans. These are contributed to by the physiological differences between persons, body diseases, total fluoride ingestion from all sources, nutritional deficiencies, age, sex, occupation and duration of exposure.
82. The following health problems are most implicated by fluoride exposure:
- . hypersensitivity reactions, which may effect any body system;
  - a. dental fluorosis caused by dental hypoplasia, a disorder effecting the normal growth of teeth;
  - b. skeletal fluorosis, a disease of bone that causes symptoms that extend from vague arthritic pain to crippling and neurological damage due to spinal cord compression;
  - c. increased fractures of the hip in the elderly;
  - d. chromosomal (genetic) abnormalities;
  - e. increased infant deaths due to abnormalities;
  - f. cancer of all types;
  - g. osteosarcoma in young males.
83. It is my best judgment, reached with a high degree of scientific certainty,
84. that fluoridation is invalid in theory and ineffective in practice as a preventive of dental caries. It is dangerous to the health of consumers.
85. I further swear that the statements regarding fluoridation made by me on the CBC broadcast "Marketplace," aired 11/24/92, remain true and correct today.
86. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**SAFE WATER ASSOCIATION, INC.,**

**Plaintiff,**

**vs.**

**Case No. 92 CV 579**

**CITY OF FOND DU LAC,**

**Defendant.**

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**AFFIDAVIT OF DR. SHEILA L.M. GIBSON  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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Nation of Scotland  
City of Glasgow

Sheila L.M. Gibson, M.D., being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

**BACKGROUND**

1. I am at present a research Physician at the Glasgow Homoeopathic Hospital, Glasgow, Scotland. Prior to that I was a lecturer in Medical Genetics at Glasgow University, a post which combined clinical work, teaching and research.
2. Prior to that I worked with Professor A. Goldberg (now Sir Abraham Goldberg) in the Gardner Institute University Department of Medicine in the Western Infirmary, Glasgow, researching lead poisoning.
3. On the subject of fluoride, I have recently published a research paper entitled "Effects of fluoride on immune system function." Complementary Medicine Research, 1992, 6, 111-113. (Exhibit\_\_\_\_\_).
4. I have also published 11 articles on lead poisoning, genetics and research in complementary medicine.
5. I was Brunton Medalist (Top student in my year at Glasgow University, 1962). I also won many prizes and medals during my undergraduate career.
6. My introduction to toxicology was through Professor Goldberg, when I carried out research into lead poisoning. Throughout my medical and scientific career I have become increasingly aware of the impact of environmental pollution on human health.
7. My interest and expertise has lead me to review, in an impartial scientific manner, research into the safety and effectiveness of artificially fluoridated water (fluoridation).

8. My experience has lead me to review and consider a large body of evidence, including the following important and persuasive studies:
  - i. Waldbott, G.L., Fluoridation, the Great Dilemma. Coronado Press, 1978.
  - ii. Yiamouyiannis, J. Fluoride the Aging Factor. Health Action Press, 1983.
  - iii. Grimbergen, G.W. A double-blind test for determination of intolerance to fluoridated water, Fluoride, 7, 1974.
  - iv. Cook, H.A. Fluoride Toxicity, 1972.
  - v. Yiamouyiannis, J. Water Fluoridation and tooth decay. Fluoride, 23, 55-67, 1990.
  - vi. Diesendorf, M. The mystery of declining tooth decay. Nature, 322, 125-129, 1986.
  - vii. Hildebolt, C. F. et al. Prevalence among geochemical regions in Missouri, Am. J. Phys. Anthropol, 78, 1989.
  - viii. Colquhoun, J. Influence of social class and fluoridation on child dental health. Comm Dent. Oral Epidem. 13, 1985.
  - ix. Holt, R. D. Enamel opacities in children whose mothers took part in a dental health education scheme. Comm Dent. Oral Epidem. 18, 74-76, 1990.
  - x. Dooland, M.B. A photographic study of enamel defects among South Australian school children. Aust.Dent J. 35, 470-473, 1989)
  - xi. Whitford, G.M. The physiological and toxicological characteristics of fluoride. J. Dent. Res. 69, 1990.
  - xii. Gray, A.S. Fluoridation. Time for a new base line? J. Canad. Dent. Ass. 53, 763-765, 1987.
  - xiii. Spak, C.J. Studies of human gastric mucosa after application of 0.42% fluoride gel. J. Dent. Res. 1990.
  - xiv. Spak, C.J. Tissue response of gastric mucosa after ingestion of fluoride. BMJ, 298, 1686-1687, 1989.
  - xv. Hedlund, L.R. Increased incidence of hip fracture in osteoporotic women treated with sodium fluoride. J. Bone Min. Res. 4, 223-225, 1989.
  - xvi. Orcel Ph. et al. Stress fractures of the lower limbs in osteoporotic patients treated with fluoride. J. Bone Min. Res. 5, suppl., 191-194, 1990.
  - xvii. Boivin, B. Skeletal fluorosis: Histomorphometric findings. J. Bone Min. Res. 5, suppl., 185-189, 1990.
  - xviii. Gutteridge D. H. Spontaneous hip fractures in fluoride-treated patients: potential causative factors. J. Bone Min. Res. 5, suppl., 205-215 1990.
  - xix. Carter, D.R. Effects of fluoride treatment on bone strength. J. Bone Min. Res. 5, suppl., 177-184 1990.
  - xx. Okuda, A. The effects of sodium fluoride on the resorptive activity of isolated osteoclasts. J. Bone Min. Res. 5, suppl., 115-120 1990.
  - xxi. Bayley, T.A. Fluoride-induced fractures; relation to osteogenic effect. J. Bone Min. Res. 5, suppl., 217-222 1990.
  - xxii. Tsutsui, T. Cytotoxicity, chromosome aberrations and unscheduled DNA synthesis in cultured human diploid fibroblasts induced by sodium fluoride. Mutation Res. 139, 193-11198, 1984.
  - xxiii. Thomson, E.J. The effect of fluoride on chromosome aberration and sister-chromatid exchange frequencies in cultured human lymphocytes. Mutat. Res., 144, 1985.
  - xxiv. Cole, J. The mutagenicity of sodium fluoride to L5178Y mouse lymphoma cells. Mutagenesis 1, 157-167, 1986.

- xxv. Li, Y. Genotoxic effects of fluoride: a controversial issue. *Mutat. Res.*, 195, 127-136, 1988.
- xxvi. Aardema, M.J. Sodium fluoride-induced chromosome aberrations in different stages of the cell cycle: a proposed mechanism. *Mutat. Res.* 223, 191-203, 1989.
- xxvii. Scott, D. Extrapolation from in vitro tests to human risk: Experience with sodium fluoride clastogenicity. *Mutat. Res.*, 189, 47-58, 1987.
- xxviii. Edwards, S.L. The crystal structure of fluoride-induced cytochrome c peroxidase. *J. Biol. Chem.*, 259, 1984.
- xxix. Rigalli, A. Inhibitory effect of fluoride on the secretion of insulin. *Calcif. Tissue Int.* 46, 333-338, 1990.
- xxx. Danielson, C. Hip fractures and fluoridation in Utah's elderly population. *JAMA*, 286, 746-748, 1992.
- xxxi. Cooper, C. Water fluoridation and hip fracture. *JAMA*, 266, 513, 1991.
- xxxii. Benefits and Risks 1991, Dept. of Health & Human Services.
- xxxiii. Rose, D. and Marier, J.R. Environmental Fluoride 1977. National Research Council of Canada, No. 16081.
- xxxiv. My own research on the effects of fluoride on the immune system is in line with the findings of these authors.
- xxxv. My conclusions regarding the fluoridation of public water supplies to between 0.5-1.5 ppm using hydrofluorosilicic acid or sodium hydrofluorosilicate are as follows:
- xxxvi. Hydrofluorosilicic acid and sodium hydrofluorosilicate are both toxic industrial waste products which have no know positive beneficial effects on human health. Fluorine has never been shown to be essential to health. Cook, H.A. Fluoride Toxicity, 1972.

#### **EFFECTIVENESS OF FLUORIDATION**

- xxxvii. Fluoridation has no significant benefit to teeth. This has been demonstrated by the work of Diesendorf, Colquhoun, Yiamouyiannis, Hildebolt, see above.
- xxxviii. It is also shown by the figures published by the British Fluoridation Society for decayed missing and filled teeth in 5 & 12 year old children (England and Wales, 1991) and 14 year old children (Scotland, England and Wales, 1991).
- xxxix. These figures show a lower cavity incidence between fluoridated and nonfluoridated areas of just .44 of a tooth for 14 year olds. However, in Birmingham, which has been fluoridated since 1964, the difference between the best and worst of the 5 health areas is .56 of a tooth for 14 year olds.
- xl. These difference are of the same order as the differences between the fluoridated and nonfluoridated areas taken as a whole. These much vaunted figures do not show any significant benefits from water fluoridation.

#### **SAFETY OF FLUORIDATION**

- xli. The immediate effects of water fluoridation to around 1 ppm can be severe. The 1983 United States Pharmacopoeia Volumes on Drug Information lists the following diseases that can occur among people consuming the amount of fluoride per day contained in 1 quart of water:

- Black Tarry Stools
- Bloody vomit
- Diarrhea
- Faintness
- Nausea and vomiting
- Shallow breathing
- Stomach cramps or pain
- Tremors
- Unusual excitement
- Unusual increase in saliva
- Watery Eyes
- Weakness
- Constipation
- Loss of appetite
- Pain and aching bones
- Skin rash
- Sores in the mouth and on the lips
- Stiffness
- Weight loss
- White, Brown or black discoloration of teeth

According to the U.S. Pharmacopeia: "Although not all these side-effects appear very often, when they do occur they may require medical attention."

- xlii. Long-term exposure to fluoride at low concentrations has adverse effects on:
- Bones. (Exhibits\_\_\_\_\_).
  - Teeth. (Exhibits\_\_\_\_\_).
  - Kidneys. (Exhibit\_\_\_\_\_).
  - Thyroid gland (Exhibit\_\_\_\_\_).
  - Pancreas (Exhibit\_\_\_\_\_).
  - Chromosomes (Exhibit\_\_\_\_\_).
  - Immune system (Exhibits\_\_\_\_\_).
- xliv. The effects on the immune system could help to explain the cancer/fluoride link, since the immune system is our first line of defence against cancer cells arising spontaneously in the body. (Exhibit\_\_\_\_\_).
- xlv. The inhibition of immune system function could also be a mechanism for the exacerbation of allergies from low levels of fluoride.
- xlv. Other conditions in which immune system function is already impaired include rheumatoid arthritis, multiple sclerosis, myelo-encephalitis, and AIDS. All these conditions could be exacerbated by fluoridation.
- xlvi. There is also epidemiological evidence of increased bone fractures in people over age 65 in fluoridated areas. (Exhibits\_\_\_\_\_).

## CONCLUSION

- xlvii. It is my best judgment, reached with a high degree of scientific certainty, that the fluoridation of public water supplies is both dangerous and ineffective.
- xlvi. I make this Affidavit in support of the Plaintiff's Motion for Summary

Judgment.

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**SAFE WATER ASSOCIATION, INC.,**

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**Plaintiff,**

**vs.**

**Case No. 92 CV 579**

**CITY OF FOND DU LAC,**

**Defendant.**

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**AFFIDAVIT OF JOHN REMINGTON GRAHAM  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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STATE OF MINNESOTA  
COUNTY OF CROW WING

John Remington Graham, being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

**BACKGROUND**

1. I graduated from the University of Minnesota, with a B.A. in philosophy in 1963. I receive my degree in law from the University of Minnesota in 1966.
2. I am a member of the Pennsylvania Academy of Science.
3. I am co-author of numerous scientific articles on the subject of fluoridation, of which some of the more important are:
  - a. Bundock, Graham, and Morin, Fluorides, Water Fluoridation, and Environmental Quality: The Quebec Experience, Science and Public Policy, June, 1982. (Exhibit\_\_\_\_). This article was prepared on invitation of the Science Policy Foundation of Great Britain, and was republished in French by the Environment Ministry of Quebec in 1984.
  - b. Graham and Burk, Lord Jauncey and Justice Flaherty: Opposing Views of the Fluoridation-Cancer Link, 17 Fluoride 63 (April, 1984). (Exhibit\_\_\_\_). This article was prepared on invitation of the International Society for Fluoride Research. It contains an incisive statistical analysis of the epidemiological evidence of cancer. Dean Burk, Ph. D., deceased, was one of the most highly decorated cancer research scientists in the world.
  - c. Morin, Graham, Bundock, and Burk, Les Fluorures, relations avec les maladies congenitales et le cancer: L'image globale, Ministere de l'Environnement, Gouvernement du Quebec, Novembre, 1984. This article is a systematic exposition of laboratory and epidemiological evidence which links artificial fluoridation of public water supplies with congenital diseases and cancer in man. A version of the paper was republished in English by the Science Policy Foundation in Great Britain.
  - d. Graham, Burk, and Morin, A Current Restatement and Continuing

Reappraisal of Demographic Variables in American Time-Trend Studies on Water Fluoridation and Human Cancer, 61 Proc. Pa Acad. Sci. 138 (June, 1988). (Exhibit\_\_\_\_). This article represents perhaps the most advanced and comprehensive work yet published on epidemiological evidence linking artificial fluoridation with human cancer, paying special attention to changes in age-race-sex composition and fluctuations in population size in the large central cities studied. This article was given special attention in a memorandum of May 1, 1990, by William Marcus, Ph. D., Senior Scientific Advisor in the Criteria and Standards Division of the Office of Water in the EPA. In that memo he advised his superiors that artificial fluoridation of public water supplies appears to create a substantial risk of human cancer. (Exhibit\_\_\_\_).

### SAFETY OF FLUORIDATION

4. The carcinogenic properties of fluoride in drinking water, especially when dissociated from sodium or the like and allowed to be ingested as free ions into the soft tissues of living animals, have long been well understood by public health authorities of the United States. It has, however, been systematically ignored and covered up.
5. In the early 1950's, Dr. Alfred Taylor at the University of Texas did a series of preliminary experiments by which it appeared that cancer-prone mice consuming water treated with sodium fluoride had shorter life spans than such mice drinking distilled water.
6. Because the mice in both the control and experimental groups ate chow containing measurable fluoride, as he learned after his initial runs, Dr. Taylor replicated his earlier work, this time using chow containing negligible fluoride. He ran twelve experiments, using 645 cancer-prone mice. He found that the cancer-prone mice drinking water containing water containing 1.0 and 10.0 ppm fluoride had shorter life-spans, as measured for statistical significance, than such mice drinking distilled water.
7. Dr. Taylor published these results, Sodium Fluoride in the Drinking Water of Mice, 60 Dent. Dig. 170-172 (1954). (Exhibit\_\_\_\_). This paper was of great importance, because the results obviously indicated carcinogenic potential of free fluoride ions in drinking water, and at the time of publication the dental profession was watching with interest the final phases of the surveys of dental caries then underway in the artificially fluoridated city of Newburgh, and city of Kingston, whose water was left untreated and contained negligible natural fluoride, in the State of New York.
8. Dr. Taylor's work was understood to mean that free fluoride ions in water are capable of promoting cancer, and that artificial fluoridation of public water supplies should not have been implemented as a public health measure, at least until the situation were adequately clarified.
9. However, in the Final Report of the Newburgh-Kingston Fluorine-Caries Study, 52 Jour. A. Dent. Assoc. 290-325,313 (1956), in regard to the work of Dr. Taylor, two years after the particulars of his work had been published in the Dental Digest, (Exhibit\_\_\_\_) and had been made known in professional circles, it was misrepresented that,
  - o "The reports by Alfred Taylor, a biochemist at the University of Texas, on the increased incidence of cancer in mice drinking fluoride-treated water have been shown to be unfounded, since the food that he was giving the mice had many times the fluoride content of the drinking water, and the food was supplied both to the control and experimental groups. Subsequent tests did not confirm



- the difference. (Exhibit\_\_\_\_\_).
10. More recently, a history of the National Institute of Dental Research by Ruth Roy Harris was published in 1989 by Monrolse Press in Rockville, Maryland, under the auspices of the United States Public Heath Service, bearing the title Dental Health in a New Age. In Chapter 5, on page 112, an account is given of Dr. Taylor's preliminary experiment. Thirty-five years after Dr. Taylor did his further work and published his results, it is misrepresented that,
    - o "Alfred Taylor, the investigator with a doctorate in biochemistry, indicated that he would not publish his findings, because was unable to confirm those results in a second experiment."
  11. So intensively is this falsehood pushed in the USPHS account, that in footnote 33 of Chapter 5 of Harris's book it says of Dr. Taylor's work, (thirty-five years after it was actually published),
    - o "A literature search of scientific journals failed to show any publication of this work by Taylor - an indication that it was not subjected to peer review."
  12. The first published work of Dr. Taylor was replicated by himself in a study published in another journal, and has been elaborated over and over gain by scientists of the world, whose results in laboratory studies have been published in good journals. I cite outstanding examples, including:
    - . Herskowitz and Norton, Increased Incidence of Melanotic Tumors in Drosophila Melanogaster, 48 Genetics 307-310 (1963). (Exhibit\_\_\_\_\_);
    - a. Taylor and Taylor, Effect of Sodium Fluoride on Tumor Growth, 119 Proc. Soc. Exptl. Biol. Med. 252-255 (1965). (Exhibit\_\_\_\_\_);
    - b. Change, Effect of Fluoride on Nucleotides and Ribonucleic Acid in Germinating Corn Seedling Roots, 43 Plant Physiol. 669-674 (1968). (Exhibit\_\_\_\_\_);
    - c. Jackimczac et al., Effect of Fluoride and Lead Ions on Human Leukocytes in Vitro, 19 Genetica Polonica 353-358 (1978). (Exhibit\_\_\_\_\_);
    - d. Emsely et al., An Unexpectedly Strong Hydrogen Bond: Ab Initio Calculations and Spectroscopic Studies of Amide-Fluoride Systems, 103 Jour. Am. Chem. Soc. 24-28 (1981)(Exhibit\_\_\_\_\_);
    - e. Emsely et al., Uracil-Fluoride Interaction: Ab Initio Calculations including Solvation, J. Chem. Soc., Chem. Commun. 1982, 476-478. (Exhibit\_\_\_\_\_);
    - f. Imai et al., Effects of Fluoride on Cell Growth of Two Human Cell Lines and on DNA and Protein Synthesis in HeLa Cells, 52 Acta Pharmacol. Toxicol. 8-11 (1983). (Exhibit\_\_\_\_\_);
    - g. Tsutsui et al., Cytotoxicity, Chromosome Aberrations and Unscheduled DNA Synthesis in Cultured Human Diploid Fibroblasts Induced by Sodium Fluoride, 139 Mutation Res. 193-198 (1984). (Exhibit\_\_\_\_\_);
    - h. Tsutsui et al., Introduction of Unscheduled DNA Synthesis in Cultured Human Oral Keratinocytes by Sodium Fluoride, 140 Mutation Res. (1984). (Exhibit\_\_\_\_\_);
    - i. Tsutsui et al. Sodium Fluoride-Induced Morphological and Neoplastic Transformation,sister Chromatid Exchanges and Unscheduled DNA Synthesis in Cultured Syrian Hamster Embryo Cells, 44 Cancer Res. 938-941 (1984). (Exhibit\_\_\_\_\_);
    - j. Jones et al., Sodium Fluoride Promotes Morphological Transformation in Syrian Hamster Embryo Cells, 9 Carcinogen. 2279-2284 (1988). (Exhibit\_\_\_\_\_); and

- k. Aardema et al., Sodium Fluoride-Induced Chromosome Aberrations in Different Stages of the Cell Cycle: a Proposed Mechanism, 223 Mutation Res. 191-203 (1989). (Exhibit\_\_\_\_).
13. This formidable body of research is obviously of great importance in the eyes of the law, because it has been held in many places that, if laboratory tests indicate that a certain substance can produce harmful effects in animals, it is legally presumed, until the contrary is proved, the same substance is harmful to man. See, e.g., Environmental Defense Fund v Environmental Protection Agency, 548 F2d 998 (D.C. Cir 1976).

### **CANCER IN MAN**

14. Given an impressive body of laboratory work plainly showing carcinogenic potential in water-borne fluorides, an enhanced importance was and should have been attached to the epidemiological work on cancer by Dr. John Yiamouyiannis and Dr. Dean Burk, which was first inserted in the Congressional Record in 1975.
15. Their extensive work was next presented at scientific meetings and printed in scientific journals in the United States, then introduced before hearings conducted by subcommittees of Congress in 1976 and 1977.
16. It was considered and found to be sound by a special committee of the environment ministry of Quebec in 1979, and was found to be meritorious after extended trials before courts of equity in Pennsylvania and Texas in 1978 and 1982. This work, as noted by Judge Flaherty in the Pennsylvania trial, showed a striking increase of human cancer mortality associated with artificial fluoridation of public water supplies. The opinion of the court read in part:
  - o Point by point, every criticism defendants made of the Burk-Yiamouyiannis Study was met and explained by the Plaintiffs. Often, the point was turned around against defendants. In short, this court was compellingly convinced of the evidence in favor of the Plaintiffs. (Exhibit\_\_\_\_, pg.9).
17. In the early 1980's, I had a series of personal conferences and entered into extended correspondence with the Dr. Burk. He prepared me with the principles of medical statistics.
18. At length, we produced a set of nineteen tables and five figures in the early months of 1984, which we continued to revise and refine until the early months of 1985. These tables and figures were drawn ab initio from government sources, and recapitulated the basic data, as well as the adjustments thereof in a newer and sounder form.
19. Dr. Burk and I prepared two papers, which were published in refereed journals, elaborating on the significance of said tables and figures.
20. The first paper was submitted on invitation of the International Society for Fluoride Research, and is entitled, Lord Jauncey and Justice Flaherty: Opposing Views on the Fluoridation-Cancer Link, 17 Fluoride 63-71 (1984). (Exhibit\_\_\_\_)
21. The other paper was submitted at the time I was admitted as a member of the Pennsylvania Academy of Science. We were joined in this effort by Dr. Pierre Morin, who had reviewed the Burk-Yiamouyiannis Study for the environment ministry of Quebec. The paper was published as A Current Restatement and Continuing Reappraisal Concerning Demographic Variables in American Time-Trend Studies on Water Fluoridation and Human Cancer, 61 Proc. Pa. Acad. Sci. 138-145 (1987),(Exhibit\_\_\_\_), actually published in the summer of 1988, a few months before the death of Dr. Burk.

22. A paper contemporaneously published and confirmatory thereof was done by an Austrian epidemiologist, Dr. Rudolph Ziegelbecker: Zur Frage eines Zusammenhanges zwischen Trink-wasserfluoridierung, Krebs, und Leberzirrhose, 128 gwf Wasser/ Abwasser 111-116 (1987). (Copy available in German)
23. The government of the United States has tried to cover up the laboratory work of Dr. Taylor and the many studies confirmatory thereof, by officially denying their very existence, when these papers are readily available in published form to interested scientists. Similarly, the government of the United States has officially maintained that the epidemiological work by Dr. Burk and Dr. Yiamouyiannis was not adjusted for age, race, and sex.
24. The trials on fluoridation in Pittsburgh and Houston focused largely on exploding the latter fabrication. This misrepresentation of the studies was boldly asserted by the assistant director in charge of field studies, effectively the chief epidemiologist of the National Cancer Institute, in the trial at Pittsburgh, and the deputy director of the National Cancer Institute in the trial at Houston.
25. Not only had Dr. Burk and Dr. Yiamouyiannis adjusted for demographic factors, they had done so using two variations of the direct method, one partial but featuring age and race, the other full but featuring age only with separate treatment of race and sex, and also using the two variations of the indirect method for age, race, and sex simultaneously, one with weighted averages and a national standard, the other with unweighted averages and an urban standard.
26. Their critics, who favored the indirect method with weighted averages and a national standard, had omitted virtually all the data relevant and necessary to do those adjustments properly in a time-span study.
27. Our general conclusions, upon completion of our work, are fairly summarized in the abstract of our paper published in the Proceedings of the Pennsylvania Academy of Science, (Exhibit\_\_\_\_), to wit:
  - o "This article reviews an important phase of the debate concerning a striking association between artificial fluoridation of public water supplies and increased cancer death rates in large central cities of the united states from 1940 through 1968. The authors believe that this association reveals a causal relationship between water fluoridation and human cancer.

Critics insist that the association is explained away by demographic changes in the two groups of central cities which have been compared. The authors evaluate the major papers of these critics, and show that, if all available and pertinent data are standardized by the indirect method for age, race, and sex, the association between fluoridation and cancer remains substantially intact, but somewhat reduced.

Attention is also given to a recent suggestion that the association can be explained by changes in population size of the twenty cities observed. Analysis of this proposal reveals that, in the cities considered during the period observed, changes in population size were essentially an inverse index of population aging, and yielded adjustments parallel to those for age, race, and sex.

It is concluded that artificial fluoridation appears to cause or induce about 20-30 excess cancer deaths for every 100,000 persons

exposed per year after about 15-20 years."

## CONCLUSION

28. There is a very substantial body of laboratory work which demonstrates that fluoride is a carcinogen, and in the form of free ions in drinking water actually does cause or induce cancer in mice.
  29. We now understand in terms of subcellar mechanisms why this phenomenon is observed. Knowing that sodium fluoride dissolved in drinking water causes cancer in mice, we are invited to infer in scientific logic and in environmental law that artificial fluoridation of public water supplies probably causes cancer in human beings.
  30. The public health authorities of the United States, which promoted artificial fluoridation from the very beginning, have officially denied over the past thirty-five years that these many studies, all published in scientific journals, even exist.
  31. We have taken a panoramic survey of the cancer mortality experience of about sixteen to nineteen million people in twenty large central cities over a span of about thirty years, dividing between those ten cities artificially fluoridating during the last fifteen to eighteen years of the thirty years considered and those ten cities remaining unfluoridated during the entire span, so as to give us the benefit of an extended base line during which the cancer death rates of the two groups were virtually identical.
  32. Following introduction of artificial fluoridation in the experimental cities, a dramatic rise in cancer mortality was there observed as compared to the experience in the control cities.
  33. The health authorities of the United States have officially claimed over the past sixteen years that these epidemiological data have not been adjusted for demographic variables, notwithstanding that such adjustments have been displayed plainly before their eyes in scientific meetings and publications, as well as legislative and judicial hearings. And these federal bureaucrats have claimed that such adjustments wipe out any observed difference in human cancer mortality between fluoridated and unfluoridated areas.
  34. In fact, in every single paper they have published, although they have studiously concealed the fact, they have left out virtually all of the data necessary and pertinent for making just such adjustments. When those data are included, and their own methods are followed, such adjustments yield enormous excesses of cancer mortality in fluoridated cities.
  35. It is my best judgment, made with a high degree of scientific certainty, that fluoridation is very dangerous to the health of those who drink it.
  36. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**SAFE WATER ASSOCIATION, INC.,**

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**Plaintiff,****vs.****Case No. 92 CV 579****CITY OF FOND DU LAC,****Defendant.**

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**AFFIDAVIT OF GERARD F. JUDD, Ph.D.  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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State of Arizona  
County of Maricopa

Gerard F. Judd, Ph.D., being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

**BACKGROUND**

1. I have been a professor of Chemistry at Phoenix College, Phoenix Arizona, since 1965.
2. I received my B.A. in chemistry from the University of Utah in 1943. I received my M.S. from the University of Portland in 1948. I received my Ph.D. in physical and organic chemistry from Purdue University in 1953. I did Postdoctoral research at Purdue University, on fluorinated organometallic reactions. in 1954.
3. A few of my more recent research, academic and service honors include:
  - a. Elected to Emeritus Member of American Chemical Society, 11/92.
  - b. "20 Year Outstanding Teaching Award and Pin" from Maricopa County Community College District, Dr. Paul A. Elsner, Chancellor, 2/92.
  - c. Reviewed two fundamental chemistry textbooks for publishers, 5/91.
  - d. Received "Speaker's Gold Plated Champion's Award for Research, Communication and Education," regarding better teeth, health and government. Arizona Breakfast Club, Harry E. Everingham, President, 11/24/90.
  - e. "Faculty Appreciation Gift for Outstanding Contributions to Teaching," Maricopa County Community College District, Phoenix, Arizona, Dr. Paul A. Elsner, Chancellor, 3/4/85.
4. I have devoted thousands of hours during my career to studying the chemistry of fluoride. In addition, in preparing this affidavit, I have specifically researched and summarized the following professional and technical literature on the epidemiological effects of fluoride:
  - a. Journal of Fluoride, August 1992 - January 1983.

- b. Chemical Abstracts, August 1992 - January 1989.
  - c. Index Medicus, May, June and July 1992.
  - d. Fluoridation The Great Dilemma, a 421-page book by George L. Waldbott, M.D. in collaboration with Albert W. Burgstahler, Ph.D. and H. Lewis McKinney, Ph.D.
  - e. A Struggle With Titans, Forces Behind Fluoridation, a 383-page book by George L. Waldbott, M.D. (a scientist's look at fluoridation).
  - f. Fluoridation, the Aging Factor, a 203-page book by John Yiamouyannis, Ph.D. in Biochemistry, and world-leading authority on the biological effects of fluoride.
  - g. Fluoride, The Freedom Fight, a 207-page book by Dr. Hans Moolenburgh, M.D. (The Netherlands).
  - h. Fluoridation, a 264-page book by Isabel Jansen, R.N.
  - i. The Fluoride Question, Panacea or Poison?, a 176-page book by Anne-Lise Gotzsche, medical journalist (England).
  - j. Hello, Test Animals . . . Chinchillas or You and Your Grandchildren, a 180-page book by W. R. Cox, chinchilla breeder and researcher.
  - k. The Grim Truth About Fluoridation, a 128-page book by Robert M. Buck, journalist.
  - l. Fluoridation, Poison on Tap, a 460-page book by Glen S. R. Walker, consultant in strategic metals, munitions, and chemical industry, registered by the National Association of Testing Authorities in Australia.
  - m. Fluoride in Australia, a Case to Answer, a 159-page book by Wendy Varney, journalist.
5. During the past two years I have personally discussed the effects of artificial fluoridation of drinking water with many individuals possessing outstanding background on the subject of fluoridation, including the following:
- o Albert Burgstahler, Ph.D., University of Kansas;
  - o Dr. Mel Ruber, Ph.D., Columbia, Maryland;
  - o Dr. Robert Carton, Ph.D., former head of EPA Employees Union, Environmental Protection Agency, Washington, D.C.;
  - o Dr. William Marcus, Ph.D., epidemiologist, Environmental Protection Agency, Washington, D.C.;
  - o Dr. William Foulkes, M.D., Vancouver, Washington, former head of Ministry of Health in British Columbia;
  - o Dr. John Colquhoun, Ph.D., Titi Rangi, New Zealand;
  - o Dr. Albert Schatz, Ph.D., chemistry researcher, retired, Temple University, Philadelphia, Pennsylvania;
  - o Dr. Cornelius Steelink, Ph.D., Chemistry Professor, University of Arizona;
  - o Dr. John Yiamouyiannis, Ph.D., Delaware, Ohio;
  - o Dr. John R. Lee, M.D., Sebastopol, California.

#### **EVIDENCE AGAINST THE SAFETY OF FLUORIDATION**

6. My research, communication and discovery concerning the epidemiological effects of fluoridation has provided me with solid scientific evidence on which to base the following conclusions.
7. Fluoride has never been established as, and is not, essential in nutrition for soft tissues, bones or teeth.
8. There are no experiments or data which establish that fluoride in any form or in any concentration is harmless when put into drinking water for human

- consumption or usage.
9. Fluoride at low levels has been shown to unsnap hydrogen bonds in the enzyme cytochrome oxidase, and thus ruin its ability to handle oxygen in humans, animals or plants. (Exhibit\_\_\_\_\_).
10. It is well-established in academic and industrial chemical industry that the hydrogen-fluoride hydrogen bond is stronger than the hydrogen-nitrogen or hydrogen-oxygen hydrogen bonds characteristic of human enzymes. Therefore, human enzyme systems (thousands of enzymes) are subject to destruction when water containing fluoride is consumed. After a few weeks for some, and a lifetime for others, a large enough reservoir of fluoride is built up to cause serious ailments.
11. At least 63 human, animal and plant enzymes are for the most part destroyed or modified by fluoride.
12. A summary of important epidemiological effects of fluoride from Chemical Abstracts, 1992-1989 (53 pages); Journal of Fluoride, August 1992-January 1993 (42 pages); and Index Medicus, May, June and July 1992 (3 pages) failed to produce even one article proving fluoride to be harmless.
13. Contrariwise, hundreds of experiments on test animals, humans, plants, and their cells, have invariably demonstrated harmful effects.
14. A large number of epidemiological effects in the way of ailments and allergies caused by fluoride have been clinically established by competent authorities, including those below.
15. Forty-nine or more serious allergenic conditions were established by George Waldbott, M.D. These were proven by removing patients from drinking water with fluoride in it, in which case they were cured. This was followed up with single- or double-blind tests with fluoride tablets.
16. Eight of Dr. Waldbott's side effects were confirmed through double-blind tests organized by Dr. H. Moolenburgh, with 12 other physicians, one pharmacist, and one attorney. (Exhibit\_\_\_\_\_). Only one of these side effects presented in court was sufficient to cause the Holland Ministry of Health to discontinue fluoridation of water in that country. These side effects are listed in Waldbott's book, pp. 123-125.
17. Genetic changes in bone cells and sperm cells of mice were thoroughly studied, re-studied and established by Dr. Albert Taylor. This work has been confirmed by numerous other researchers.
18. Fluoride as a factor in cataracts has been established by statistical studies of Dr. Ionel F. Rapaport and confirmed by the research of Dr. Burgstahler. This has also been confirmed by analysis of cataracted and un-cataracted eye lenses. The older the person, the more the fluoride in the lens. (Exhibit\_\_\_\_\_).
19. SIDS (crib or cot death) has been related to fluoride poisoning by Dr. J. Colquhoun (exhibit\_\_\_\_\_), Dr. Bruce Spittle, and others.
20. Chronic fatigue syndrome (CFS), and chronic fluoride toxicity (CFT) have been found to be very closely related in their symptoms (Exhibit\_\_\_\_\_).
21. RSI (repetitive stress injury, or carpal tunnel syndrome) has been linked to the accumulation of fluoride in the bone by Dr. Geoffrey E. Smith. Additional work supporting this link was found by Dr. Sutton. (Exhibit\_\_\_\_\_).
22. Dental fluorosis has been shown recently to occur at fluoride levels as low as .3 ppm, as opposed to earlier studies of Dr. H. Trendly Dean, who set 1.0 as a tolerable limit, allowing 24 percent fluorosis. The degree of fluorosis depends on the nutritional status of the person.
23. Dr. Waldbott had over 400 cases of pre-skeletal bone fluorosis in patients, which he established was caused by their drinking fluoridated water. (Exhibit\_\_\_\_\_). This has been further confirmed by many other studies. The

- degree of bone fluorosis is strictly related to bone fluoride content.
24. Embrittled bones are caused by drinking fluoridated water, as well as by administration of tablets to "harden bones." (Riggs study, Exhibit\_\_\_\_; Utah study, Exhibit\_\_\_\_; Jacobson's study, Exhibit\_\_\_\_; Cooper's study, Exhibit\_\_\_\_; and Sower's study, Exhibit\_\_\_\_).
  25. Increased infant mortality and birth defects (two to three times increase) was established by Dr. Albert Schatz to be present in Chilean children administered fluoridated water in an experimental study in Curico, Chili, with San Fernando and La Serena as a control towns. (Exhibit\_\_\_\_). Dr. Schatz found fluoridation did no good for teeth, and caused enormous increase in miscarriages. The malformations and infant mortality dropped dramatically upon cessation of the fluoridation. Similar malformations and infant mortalities are now occurring in U.S.
  26. C. R. Cox, working with the University of Oregon, found that 17 ppm fluoride in feed caused constipation, great mature and baby chinchilla death, small litters and over four generations a smaller, inferior rabbit.
  27. Down's Syndrome was established to be linked to consumption of fluoride through statistical studies and re-studies by Dr. Ionel F. Rapaport, M.D. and Waldbott, Fluoridation the Great Dilemma, pp. 212-219. Dr. Rapaport also found that 70% of Down's Syndrome babies were born with cataracted eyes.
  28. Genu valgum (knock knees) has been reported as having been caused by fluoride in drinking water..
  29. Gilbert's Disease (hemorrhagic yellow jaundice) has been cured by taking the patient off fluoridated drinking water. (Exhibit\_\_\_\_).
  30. Collagen synthesis has been shown to be impeded by fluoride by the work of B. Uslu, Andola School of Medicine, Eskisehir, Turkey.
  31. Immunosuppression, according to Sutton and Gibson, may be caused by consumption of fluoride. (See Exhibits\_\_\_\_\_).
  32. Decreased immunodiffusion has been established as due to fluoride ion, making it a negative chemitoxic agent (this means it impedes the "taxiing" or motion effect). (Exhibit\_\_\_\_).
  33. Between 1953 and 1968, there were approximately 572,810 (44,062 per year average) more deaths due to all types of cancer in 10 major fluoridated cities compared to non-fluoridated cities. Sex, race and age changes in these populations were insignificant during this period, so that nothing else could be established as causal. (Exhibit\_\_\_\_).
  34. In Antigo, Wisconsin, heart attacks were shown to dramatically increase both in the general population and the people under 65 and over 65 when fluoridation was instituted and continued over 35 years.
  35. A tremendous increase in caiman (alligator) deaths was experienced once Kansas City, Kansas water was fluoridated at the Parrot Hill farms under the care of Patricia Jacobs, naturalist.

#### **EVIDENCE AGAINST THE EFFECTIVENESS OF FLUORIDATION**

36. In contrast to the claims of the Human Health Services and the American Dental Association that fluoride reduces DMF (decayed, missing, filled teeth) 65 percent, it has now been established through a very large number of reliable studies that fluoride may actually cause a slight amount of DMF. (A large amount of DMF is actually related to nutrition.)
37. Dr. Yiamouyiannis found that of 39,200 students, ages 5-19, from 89 fluoridated and non-fluoridated areas, the teeth of those living in non-fluoridated areas had slightly less DMF. (Exhibit\_\_\_\_).
38. A survey of 1,500 fifth grade students in Missouri gave slightly lower DMF for those who lived in a non-fluoridated area. This was also true in a survey



- of 1500 6th graders.(Exhibit\_\_\_\_\_).
39. A study of school children in Tucson, Arizona by Dr. Cornelius Steelink (Chemistry Department, University of Arizona), established that there was an increase in DMF with an increase in fluoride in the water. (Exhibit\_\_\_\_\_).
  40. A thorough study of the entire population of Japan (included 20,000 school children, 1972) established that when the fluoride in the drinking water was above .4 ppm there was more decay. (Exhibit\_\_\_\_\_).
  41. A study of Auckland, New Zealand, found that DMF decreases depended heavily on dental education in the schools and the salary of people from various areas, and insignificantly on the amount of fluoride in the water. (Exhibit\_\_\_\_\_).
  42. In Garis, Africa a high proportion of 14 to 15-year-olds had first permanent molars which were extensively carious or missing despite 1.06 ppm fluoride in drinking water. High sugar intake was a possible factor.
  43. Earlier "studies" justifying fluoridation of drinking water have been unmasked and debunked by competent authorities (Dr. Waldbott, Dr. Colquhoun, Dr. Foulkes, Dr. Mark Diesendorf, Dr. Sutton, Dr. Exner and Dr. Rudolf Ziegelbecker) on the basis of neglecting variables, cheating and group selection, not completing the studies, etc. (Exhibits\_\_\_\_\_).
  44. As one example, phosphate, calcium and strontium were not accounted for in the Newburgh-Kingston study, or any other study, to the best of my knowledge. Dr. Waldbott established that the Kingston water had deficiencies of these elements.

### **CONCLUSION**

45. My research has made it clear that the American Dental Association and U. S. Human Health Services have made a wrong turn in their attempt to improve the teeth of the American public.
  46. Fluoride in drinking water should be limited to .1 ppm where possible, since reverse osmosis can easily reduce fluoride below this value.
  47. It is my best judgment, reached with a high degree of scientific certainty, that fluoridation is invalid in theory and ineffective in practice as a preventive of dental caries. It is also dangerous to the health of consumers.
  48. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**SAFE WATER ASSOCIATION, INC.,**

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**Plaintiff,**

**vs.**

**Case No. 92 CV 579**

**CITY OF FOND DU LAC,**

**Defendant.**

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**AFFIDAVIT OF GEORGE W. KELL  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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State of California  
City of Modesto

GEORGE W. KELL, being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

1. I am an attorney at law, duly licensed to practice as such and practicing said profession in the State of California. My offices are located at 201 E. Rumble Road, Ste. A-1, Modesto, CA 95350.
2. I was awarded the degree of Bachelor of Arts in 1949, Bachelor of Law August 30, 1952, and Juris Doctor on June 6, 1966, all by the University of Wisconsin. I actually completed my law studies in August 1952, whereupon I was admitted to the Wisconsin Bar, but immediately departed the State of Wisconsin for California where, upon completing additional studies, I was admitted to the California Bar on January 14, 1954.
3. Beginning about 1948 or 1949 I became aware that I was suffering a number of physical symptoms and complaints, which included at that time: nervousness, irritability, inability to concentrate, mental confusion, non-anatomical areas of tenderness in various areas of my skin, particularly the scalp, and an overall feeling of systemic "stress". I had not previously had these symptoms. I later learned that Madison, Wisconsin, where I was residing at that time, was first fluoridated in June, 1948.
4. Shortly after arriving in California I took up residence in the city of Monterey Park, near Los Angeles. I was first employed by an insurance company, then as an Assistant U.S. Attorney for what was then the Southern District of California, thereafter by the California State Department of Justice as a Deputy Attorney General, and in 1962 as a partner in the law firm of Song, Kell & Schwartz. My partner, Mr. Al Song, was first the Assemblyman and then the State Senator for the district in which Monterey Park was located. Upon forming this partnership I became a full time resident of Monterey Park, whereas my employment in Los Angeles had previously occupied most of my waking hours. Unknown to me at the time was the fact that Los Angeles water, coming from the Colorado River, contained essentially no fluoride; Monterey Park's water, however, contained approximately two to three parts per million of fluoride because Monterey Park water supplies were drawn from deep wells which brought

- the water up from an area of former volcanic activity.
5. While I continued to work in Los Angeles and sleep in Monterey Park my symptoms remained at a tolerable and non-disabling level, but were gradually and insidiously progressive over the years. In addition to the foregoing, my symptoms and complaints, as the years went on, included the following: joint stiffness, arthritis, rheumatic pain, excessive thirst, frequent urination, constipation, frequent infections, skin eruptions and sensitive skin, soreness and aching of the legs and feet, back pain, muscle cramps, frequent allergic reactions, disturbing and increasing gastrointestinal problems, hemorrhoids, stomach ulcers, headaches, ringing and buzzing in the ears, frequent urinary infections, shortness of breath, muscle weakness, irregular heartbeat and skips of the heartbeat, hypoglycemia, non-anatomical numb or hyper sensitive areas, liver spots, impairment of sense of taste, smell and hearing, pain when moderately pressing down on a bone anywhere in the body, ammonia odor in urine, brittle and crumbling teeth, and physical exhaustion so deep and compelling as to be beyond description.
  6. By this time, January 1967, I had been hospitalized twice, (after collapsing in court on one occasion), for exhaustion, intravenous feedings, and diagnostic studies. It was suggested that I consult a psychotherapist. I did undergo therapy for several months, whereupon I was informed that my symptoms must be "physical" because they did not have a psychiatric origin. My physical complaints, emotionality and irritability had progressed to the point that my law partners requested that I leave the firm.
  7. In February 1967, having left the Los Angeles area because I believed the smog was a cause of my problems, I accepted employment in a "country law office" in Merced, California. Unknown to me at the time, Merced was a fluoridated city. My symptoms continued unabated.
  8. In the early part of 1968 a Mr. Riggins, alleging total disability, consulted me, seeking an attorney who would sue the United States Public Health Service for allegedly "poisoning" him with the fluoridated waters he had been drinking over the years. He had thoroughly researched the etiology of his multiple systemic disorders and was extremely knowledgeable concerning all aspects of fluoride and fluoridation. His symptoms were almost identical to mine.
  9. Nevertheless, I refused to accept his self diagnosis until, after several months, he brought in a report from a doctor which stated that persons who had previously experienced nephritis or hepatitis were known to be more susceptible to chronic fluoride poisoning because those organs, once damaged by infection, did not produce adequate enzymes. These enzymes are needed to combat low level toxicity. Deprived of that first line of defense, these people sustained losses of calcium which, on combining with fluoride, took the form of calcium-fluoride. This substantially reduced the toxicity of the fluoride so that it could be expelled from the body. As a child I had suffered from a very grave case of hepatitis. At this point Mr. Riggins' argument struck home.
  10. I began researching medical authorities in the library, finding no medical information whatsoever on the subject of "chronic fluoride toxicity". However, I found several texts which discussed chronic lead poisoning, and the symptoms of chronic lead poisoning closely paralleled, to the point of almost virtual identity, those symptoms that I had been experiencing.
  11. The reason for this: lead and fluoride are both "free radicals", which assault the enzymes, and impairment of various enzymes was the cause of my physical deterioration. Fluoride also assaults the myelin sheath surrounding the nerves, which explained many of my neurological symptoms, emotionality, mental confusion etc.

12. I immediately adopted a regimen which included only distilled water, and
  - 13.
  14. was rewarded by a gradual improvement which continued for approximately 2 years before my condition stabilized. All symptoms had then cleared, except that I was left with a significant decrease in my ability to hear, and in my senses of taste and smell.
  15. I am convinced to a high degree of certainty, based upon my long experience with fluoridated and non-fluoridated water, that the fluoride was the cause of my debilitating symptoms.
  16. On the Sunday before Christmas, 1990, after passing blood for several days, I was unable to urinate and was forced to seek medical attention. I was advised that the cause was probably a tumor. On January 25, 1991 a scan was taken, revealing a tumor three times the size of my left kidney, engulfing the kidney itself.
  17. I learned from the urologist that this growth was, in his opinion, malignant, based upon the fact that the last 100 renal tumors removed by his office had all been malignant.
  18. As to etiology, I believe that the tumor is obviously a product of my long-term exposure to fluoridated water. I had the symptoms of cancer in 1967-1968. I have not had them since that time, until the tumor was discovered 2 years ago.
  19. Based upon the fact that Dr. Dean Burke, PhD, former head of the Cytochemistry Section of the National Health Institute found that there was a 30% increase in gastrointestinal and urinary tract tumors in fluoridated cities, as compared to the demographics of unfluoridated cities; and based upon the fact that it is known that any irritant may cause cancer if it is present in the body long enough, and the further fact that the fluoride used for fluoridation of water is not a natural substance to the body, I believe that it is quite likely that fluoridation is also the cause of my tumor.
  20. I believe fluoridation of drinking water is dangerous to those who consume it.
  21. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**SAFE WATER ASSOCIATION, INC.,**

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**Plaintiff,****vs.****Case No. 92 CV 579****CITY OF FOND DU LAC,****Defendant.**

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**AFFIDAVIT OF DAVID C. KENNEDY, D.D.S  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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State of California  
City of San Diego

David C. Kennedy, D.D.S., being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

**Background**

1. I am President of the International Academy of Oral Medicine and Toxicology (1992-1994).
2. I am also a practicing Dentist in California.
3. I graduated from the University of Kansas with a BA degree in comparative Biochemistry and Physiology in 1967. I received a D.D.S. degree from the University of Missouri at Kansas City in 1971. I also served as a Lieutenant in the U.S. Navy Dental Corps from 1971 to 1973.
4. I have been invited to speak before numerous international conferences, and have delivered papers before groups in Switzerland, Paris, New York, Scotland, Germany and Brazil, among others, on the effects of toxins on the body.
5. I have spent considerable time and energy examining the evidence concerning the safety and effectiveness of fluoridation, both in my role as a practicing Dentist, as well as in my role as President of the Academy. I have presented my findings below. Summary of Points Made in Affidavit
6. Adding fluoride to drinking water leads to uncontrolled random dosages.
7. There is no margin for safety between the so-called "therapeutic" or "optimal" dose and onset of toxicity for fluoride poisoning.
8. Fluoride accumulates in the environment and results in ever increasing levels in soil, food and water.
9. Fluoride has been shown to be a carcinogen.
10. Fluoride has not been shown to be effective in reducing tooth decay.
11. Fluorosis adversely affects at least 1 out of 5 children and can have a deleterious effect on bone growth and cause premature joint and ligament aging.
12. Fluoride is a major world pollutant.
13. Children fed "home cooked" foods and formula will grossly be over dosed

with fluoride.

14. Increased hip fractures and osteoporosis are scientifically associated with water fluoridation.
15. Scientific fraud has been employed in order to support the disposal of this toxic substance in public water supplies.

### **Uncontrolled Random Dosages**

16. The dosage of any medication, poison or drug is proportional to the weight of the individual. There is wide variation in individuals with regard to the amount of water consumed. The amount consumed fluctuates both from winter to summer and with age. 1% of the population consume over 5 liters of water per day. There is also wide variation in the level of fluoride found at the tap. Accurately supplying any medication through the water supply is simply impossible.
17. Certain groups are at higher risk of excessive exposure than others. People on poor diets, the elderly, and those in poor health. The athlete or physical laborer who drink large quantities of water will obviously be dosed with far more fluoride than the elderly. Infants due to their small body weight and total dependence on fluid nourishment will receive a proportionately large dose than the adult. Human breast milk is relatively low in fluoride consequently the infant fed on formula prepared from tap water is at an even greater risk.

### **No Margin For Safety**

18. The proponents of fluoridation admit the relatively narrow range between the claimed "therapeutic" dose and the onset of toxicity. In several countries severe skeletal fluorosis has been documented from water containing 2 to 3 parts per million (ppm). In medicine we generally insist on a therapeutic index (margin of safety) along the order of 100. A therapeutic index as low as 2 to 3 is simply unacceptable by today's standards. Excessive Fluoride Intake
19. Despite the assurances of many fluoridation proponents, the fact remains that Americans are consuming many times more fluoride than the previous generations. In a 1969 study, H. Spencer, M.D. found adults in the Chicago area consumed 3.57 to 5.37 mg/day. Everyone agrees that this amount is excessive. In 1949 the United States Public Health Service researcher F. J. McClure reported that the dietary fluoride intake averaged only 0.2-0.3 mg/day. Fluoride is not a nutrient. Fluoride is Probably a Carcinogen
20. In 1977 Burk and Yiamouyiannis reported a higher rate of cancer in a broad ten year epidemiological study of fluoridated versus non-fluoridated communities. The National Cancer Institute (NCI) claimed to have found no significant increases. During L. H. Fountain's congressional investigations of fluoridation the NCI Director, Arthur Kraybill, admitted making false representations and numerical errors in their studies. When these USPHS studies were corrected for the NCI "math" errors, they too showed a 5% increase in cancer mortality in the fluoridated communities. There are numerous laboratory and epidemiological studies which support our concern for the toxicity of this material.
21. During the Fountain Congressional Hearings of 1977 the NCI admitted that they had relied upon no scientific data, what so ever, when they claimed 25 years earlier that fluoride would be safe to add to the community water supplies. As a direct result of these hearings independent testing was ordered

- to begin immediately. Twelve years later they managed to produce a two year toxicological study of rats. Fortunately, they selected the very reputable Battelle Research Institute of Columbus, Ohio to run the study.
22. Battelle found a very positive correlation to the amount of fluoride consumed and the size number and kind of cancer the mice developed. The study ran for only two years or about the life span of the animals. The animals were awash with illness and abnormalities of all kinds including kidney disease, liver disease, blood diseases, tumors, and cancer. In particular the fluoride groups showed thyroid adenomas, dysplasias of the oral mucosa, liver cancer of a very rare type (hepatocholangio-carcinoma), and osteosarcomas of which one appeared in the mid-range male rat and four appeared in high-range male rats. Female rats exhibited dose-related osteosclerosis and all fluoridated rodents developed dental fluorosis.
  23. It is significant that the bone fluoride levels of the high-range were approximately the same as found in humans who live 15-20 years in a fluoridated community. Thus, the tissue levels of the highest dose tested were in fact no different than what humans will experience. I can recall no other carcinogen test where short lived animals were exposed to exactly the same level as humans.
  24. The findings of the Battelle study were in direct contradiction to the frequently published claims of absolute safety. In an attempt to defuse this politically embarrassing bomb shell the USPHS arranged a pro-fluoride committee to review the research. The peer review committee was given an incomplete and drastically modified summary of the data. In the report they reviewed every tumor was downgraded at least one level. One tumor, the largest osteosarcoma, was eliminated entirely. The hepatocholangiocarcinoma which by itself was a significant finding was reduced to a hepatoma.
  25. Dr. Mel Reuber, the pathologist credited with first diagnosing this unusual lesion, reviewed the pathology slides and stated that he disagreed with the down grading. He stated that his independent review of the pathology slides from the Battelle study showed without a doubt that the lesions were in fact hepatocholangiocarcinomas.
  26. Others tumors were dismissed through what was termed "historical controls". This type of statistical manipulation is not considered by the scientific community as a valid scientific approach. The National Toxicological Program (NTP) committee used the tumor data from control animals in other unrelated studies where the intake of fluoride was not strictly controlled. The fact that some of the control rats also developed similar cancers was used as justification for the elimination of many of the cancers from the Battelle study. This approach was not valid since the "historical controls" were animals from other studies where their feed contained significant quantities of fluoride. Their actual dose fell between the low and mid-range dose animals of the Battelle study. The tumor incidence they experienced agreed with the predicted incidence from the Battelle study. The committee was not informed that the "control animals", fed commercially processed rat chow, had received a higher dose of fluoride than the low dose animals in the Battelle study.
  27. Dr. William Marcus, senior scientist for the Environmental Protection Agency Water Quality Division, speaking before the Chemical and Engineering Society stated that in his 20 years at the EPA he had never seen a study where every finding had been significantly downgraded in this manner. His review of the data showed an unusually clear straight line correlating between the dose of fluoride and type and number of tumors developed, including the historical controls. Furthermore, he stated that it is

- unprecedented for an animal study of a potential carcinogen to be conducted at the same dosage level as humans. In his opinion the findings were grossly manipulated.
28. Despite all of these manipulations the study was found to show evidence of carcinogenicity and fluoride was ruled an equivocal carcinogen.
  29. The sexual characteristics of osteosarcoma in animals has been confirmed in humans. The New Jersey Dept. of Health Study confirms the increase incidence of osteosarcoma in males. (Exhibit\_\_\_\_). Fluoride is Not Effective in Reducing Tooth Decay.
  30. Fluoride has been proven ineffective in reducing tooth decay. There is not one, blinded, animal study which found fluoride in water at 1 ppm reduced tooth decay. There are no blinded studies of humans which show a reduction in tooth decay from consuming 1 ppm artificial fluoride.
  31. When all published studies were examined by Dr. Ziegelbecker in 1981, no correlation was found between the level of fluoride in water and dental caries. (Exhibit\_\_\_\_).
  32. Mark Diesendorf studied the decayed, missing, and filled rate (DMFT) in fluoridated vs. non-fluoridated areas in 8 developed countries, over a period of 30 years, and found no correlation to the amount of fluoride consumed and DMFT. He did find a large drop in tooth decay over that period, whether or not the community was fluoridated. (Exhibit\_\_\_\_). That is why it is so important for scientific studies to have matched controls. With tooth decay rates dropping, the mere fact that tooth decay dropped after the addition of fluoride cannot be attributed to that single factor.
  33. Dr. John Colquhoun, former Chief Dental Officer for the Department of Health for Auckland, New Zealand and head of the fluoridation program, confirmed Diesendorf's findings. He found no significant difference between fluoridated and non-fluoridated areas (DMFT 2.7 fluoridated vs. 2.4 non-fluoridated). This unpopular finding was changed. Colquhoun contends his reported data was manipulated so that it showed a benefit for consuming fluoride which simply did not exist. He further showed that decay was related to the educational and economic level of the parents. (Exhibit\_\_\_\_).

#### **Fluorosis Affects More Than Teeth**

34. Fluorosis currently affects at least one out of five people in this country. The process whereby fluorosis is initiated is of interest, since we have a systemic poison which produces a visible effect on the enamel of teeth.
35. When the concentration of fluoride rises above the threshold, the cells which make enamel, ameloblasts, become poisoned. As they degenerate they lay down irregular enamel. Instead of the regular hydroxyapatite, they will produce mottled, porous and thin enamel.
36. As the poisoning worsens the enamel may even be absent. At the same time the enamel is being mottled other hard and ligament tissues are being affected as well. Fluoride is a Major World Pollutant
37. Fluoride is a major world wide pollutant. Chlorofluoro hydrocarbons are believed responsible for the loss of the ozone layer. Last year alone the municipalities around San Francisco Bay dumped more than 90,000 pounds of fluoride in the bay in tap water run off. Adding literally hundreds of tons of fluoride to the nations water ways has contaminated the entire ecology of our country and eventually the planet.

**Children Fed "Home Cooked" Foods and Formula Will Grossly be Over Dosed with Fluoride.**



38. Few children eat an average amount of anything. It is not the average child that is at risk here. Those unfortunate infants subjected to home cooking are at the greatest risk. It is also the hypersensitive child who is the prime target of this toxic substance, as well as children who consume more than average amounts of water.
39. Infants who consume water based formulas and processed chicken are clearly at risk as shown by the data from recent nutritional studies. (Randolph L. The Study of Fluoride Intake in New York Residents, 12/1/88 Dept. of Health NY).
40. Glen S. R. Walker wrote, "An average six month old baby weighing 16 to 20 pounds should consume 2 1/2 ounces of milk per pound body weight per day, making the weight of its daily milk between 40 to 50 ounces. If a powdered milk formula is used and prepared with fluoridated water, the infant will consume, from water alone, well over 1 milligram per day". (Exhibit\_\_\_\_\_).
41. This is four times the maximum recommended in 1977, by the U.S. Council on Dental Therapeutics. 1 milligram per day for an adult with an average weight of 160 LB is the "recommended level" and equates to 1/8 of a milligram per day for an infant weighing 20 pounds.
42. It is irresponsible for dentists and public health officials to advocate the addition of a toxic substance to the community water supply without absolute proof of safety. Since voluminous data already exists indicating fluoride is not a benign substance, and is in fact one of the more toxic substances known to mankind the proof of safety must be able to withstand the most rigorous scientific inspection. The fact is that having a community water supply dispense a toxic substance will overdose many of the children.

**Increased Hip Fractures and Osteoporosis are Scientifically  
Associated with Water Fluoridation.**

43. Several studies have found that fluoride inhibits broken bone healing and contributes to osteoporosis and abnormal collagen formation. Dr. Jennifer Jowsey, one of the originators of the theory that fluoride might help osteoporosis, admitted that fluoride was producing osteoporosis in some bones and at the same time osteosclerosis in others. Dr. J.C. Robins has also noted this deleterious effect.
44. Drs. Aksyuk and Bulychev found that the consumption of as little as 1.6 ppm water caused premature aging in the bones of 15-16 year old girls, as well as calcification of the inter osseous membranes and irregular bone formation. (Physiological Effects of Small Amounts of Fluoride on the Organism," Gigena i Sanitariya, Vol 27, #12, P 7-10 (1962) It seems clear that at the same dose level where fluorosis occurs, the osteoblasts also produce abnormal bone growth. These effects may have a delayed response which is not seen until the sixth or seventh decade of life.
45. In 1990 a large national survey of hip fracture rates published in the Journal of the American Medical Association found a dramatic link between fluoridated water and the frequency of hip fracture. (Exhibit\_\_\_\_\_).
46. This study closely followed a report in the New England Journal of Medicine which found that attempts to treat osteoporosis with fluoride actually increased the disease and resulted in increased bone fractures.
47. There is no question that fluoride is a toxic substance which readily enters the body and has a wide range of systemic effects. Since some people drink excessive amounts of water the extreme example must be used in the calculation of the safety not the average.
48. On numerous occasions, those responsible for the safety of our water have

bowed to political pressure and abdicated that responsibility. The majority of developed nations have chosen to not fluoridate their water supply. Fluoride is a toxic waste by product of fertilizer production and aluminum manufacturing. Consequently, the United States is one of the major producers of this hazardous waste, it would be extremely costly to dispose as a hazardous waste. These companies have found it far cheaper to support "scientific research" into the benefits of consuming hazardous waste and sell it to the cities as a health product than to dispose of this material properly.

### **The Manipulation of Science**

49. When research results that do not support the use of fluoride are reported, the funds are immediately withdrawn and no further report is issued. For example, when Dr. Feltmans conducted a study of prenatal and postnatal fluoride consumption which was financed by a USPHS grant. His preliminary findings not only failed to confirm the fluoridation thesis but indicated probable ill effects to a significant percentage of the population because of allergy to fluorides.(Exhibit\_\_\_\_). The funds to continue the study were immediately withdrawn.
50. It is my best judgment, reached with a high degree of scientific certainty, that fluoridation is invalid in theory and ineffective in practice as a preventive of dental caries. It is dangerous to the health of consumers.
51. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.

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See Dr David Kennedy in [Fluoridegate An American Tragedy](#) and [Poisoned Horses](#).

**SAFE WATER ASSOCIATION, INC.,**

**Plaintiff,**

**vs.**

**Case No. 92 CV 579**

**CITY OF FOND DU LAC,**

**Defendant.**

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**AFFIDAVIT OF ROBERT ROY KINTNER, Ph.D.  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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State of South Dakota  
City of Sioux Falls

Robert Roy Kintner, Ph.D., being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

**BACKGROUND**

1. I am a full professor of chemistry at Augustana College, Sioux Falls, SD. I have held that position since 1965. Prior to that time, I was assistant [1957-1960] and associate professor [1960-1965] at Augustana college.
2. I received my B.S. in chemical technology from Iowa State University, Ames, IA, and my Ph.D. in organic chemistry from the University of Washington, Seattle, WA.
3. I have collaborated in post-doctoral research at the University of California, Santa Cruz, CA; the University of Nebraska, Lincoln, NE; and the University of Washington, Seattle, WA.
4. I am a member of the American Chemical Society (past chairman of the Sioux Valley Section of the American Chemical Society and local section Counselor to the national society). I am also a member of the South Dakota Academy of Science (past academy president). For over a decade I was a faculty intern with The American Society for Testing Materials [ASTM] associated with the sub-committee responsible for formulating standards in the solid waste management area.
5. I have received the following honors and recognition from my peers:
  - a. Burlington Northern Foundation Faculty Achievement Award for "unusual effort devoted to ensuring the quality of student classroom experiences and the possession of high scholarly standards."
  - b. Listed in Who's Who in Science and Technology (initial listing 1982).
  - c. Listed in Leaders in American Science (initial listing 1962).
  - d. Elected to membership in Sigma Xi (a national science research recognition society).
  - e. Elected to membership in Phi Lambda Upsilon (a national chemistry honorary society).

6. I have authored 10 publications in respected science periodicals, a chapter in a science reference volume, co-authored 9 technical reports, and have supervised the publication of 5 papers resulting from the research of my students. Included in my publications are the following which are pertinent to the subject of this affidavit:
  - a. R. Roy Kintner, "Dietary Fluoride Intake in the USA." editorial in Fluoride 4:43, 1971.
  - b. Robert Roy Kintner, "Dietary Fluoride Intake in the USA Revisited." editorial in Fluoride 24:1, 1991.
  - c. Robert Roy Kintner, "Dietary Fluoride Intake in the USA Revisited; Part 2." editorial in Fluoride 24:51, 1991.
  - d. R. R. Kintner, "Adult and Young Adult Total Fluoride Intake in the USA." Proceedings of the South Dakota Academy of Science 70:137, 1991.
  - e. An additional manuscript has been accepted for publication in Proceedings of the South Dakota Academy of Science and is entitled, "Infant and Toddler Total Fluoride Intake in the USA."
7. My field of study, interest and expertise has led me to consider thoroughly, and in an impartial manner, research in the area of artificial water fluoridation.
8. The sources of data upon which I base my conclusions include:
  - a. Kramer, L., Osis, D., Wiatrowski, E., and Spencer, H. 1974. Dietary Fluoride in Different Areas in the United States. Am. J. Clin. Nutr. 27:590-594. (Exhibit\_\_\_\_\_).
  - b. Osis, D., Kramer, L., Wiatrowski, E., and Spencer, H. 1974. Dietary Fluoride Intake in Man. J. Nutr. 104:1313-1318. (Exhibit\_\_\_\_\_).
  - c. Singer, L., Ophaug, R.H., and Harland, B.F. 1980. Fluoride Intake of Young Male Adults in the United States. Am. J. Clin. Nutr. 33:328-332. (Exhibit\_\_\_\_\_).
  - d. Singer, L., Ophaug, R.H. and Harland, B.F. 1985. Dietary Fluoride of 15-19-Year-Old Male Adults Residing in the United States. J. Dent. Res. 64:1302-1305. (Exhibit\_\_\_\_\_).
  - e. Singer, L. and R. Ophaug. 1979. Total Fluoride Intake of Infants. Pediatrics 63:460-466. (Exhibit\_\_\_\_\_).
  - f. Wiatrowski, E., L. Kramer, D. Osis, and H. Spencer. 1975. Dietary Fluoride Intake of Infants. Pediatrics 55:517. (Exhibit\_\_\_\_\_).
  - g. Ophaug, R.H., L. Singer, and B.F. Harland. 1980. Estimated Fluoride Intake of 6-Month-Old Infants in Four Dietary Regions of the United States. Am. J. Clin. Nutr. 33(2):324-327, 1980. (Exhibit\_\_\_\_\_).
  - h. Ophaug, R.H., L. Singer, and B.F. Harland. 1980. Estimated Fluoride Intake of Average Two-Year-Old Children in Four Dietary Regions of the United States. J. Dent. Res. 59:777-781. (Exhibit\_\_\_\_\_).
  - i. Ophaug, R.H., L. Singer, and B.F. Harland. 1985. Dietary Fluoride Intake of 6-Month and 2-Year-Old Children in Four Dietary Regions of the United States. Am. J. Clin. Nutr. 42:701-707. (Exhibit\_\_\_\_\_).
  - j. Ershow, A.G. and K.P. Cantor. 1989. Total Water and Tapwater Intake in the United States: Population-Based Estimates of Quantities and Sources. National Cancer Institute Order #263-MD-810264, Life Sciences Research Office, Federation of American Societies for Experimental Biology. (Exhibit\_\_\_\_\_).
  - k. Clovis, J., and J.A. Hargreaves. 1988. Fluoride Intake from Beverage Consumption. Community Dent. Oral Epidemiol. 16:11-

15. (Exhibit\_\_\_\_\_).
- l. Heifetz, S.B., W.S. Driscoll, H.S. Horowitz, and A. Kingman. 1988. Prevalence of Dental Caries and Dental Fluorosis in Areas with Optimal and Above-Optimal Water-Fluoride Concentrations: A 5-Year Follow-up Study. *J. Am. Dent. Assoc.* 116:490-495. (Exhibit\_\_\_\_\_).
- m. Leverett, D. 1986. Prevalence of Dental Fluorosis in Fluoridated and Non-fluoridated Communities - A Preliminary Investigation. *J. Publ. Hlth. Dent.* 46:184-187. (Exhibit\_\_\_\_\_).
- n. Szpunar, S.M. and B.A. Burt. 1987. Trends in the Prevalence of Dental Fluorosis in the United States: A Review. *J. Publ. Hlth. Dent.* 47:71-79. (Exhibit\_\_\_\_\_).
- o. Szpunar, S.M. and B.A. Burt. 1988. Dental Caries, Fluorosis, and Fluoride Exposure of Michigan School Children. *J. Dent. Res.* 67:802-806. (Exhibit\_\_\_\_\_).
- p. Diesendorf, M. 1990. The Health Hazards of Fluoridation: A Re-Examination. *International Clinical Nutrition Review.* 10:[2]304-321. (Exhibit\_\_\_\_\_).
- q. Gray, A.S. 1987. Fluoridation: Time for a New Baseline? *J. Can. Dent. Assoc.* 53:763-765. (Exhibit\_\_\_\_\_).
- r. Yiamouyiannis, J.A. 1990. Water Fluoridation and Tooth Decay. Results from the 1986-1987 National Survey of U.S. School Children. *Fluoride* 23:55-67. (Exhibit\_\_\_\_\_).
- s. Zacherl, W.A. and D.M. Long. 1979. Reduction of Caries Attack Rate -- Non-fluoridated Community. Abstract #535, *J. Dent. Res.* 58:227. (Exhibit\_\_\_\_\_).
- t. Diesendorf, M. 1990. Have the Benefits of Water Fluoridation Been Overestimated? *International Clinical Nutrition Review* 10:292-303. (Exhibit\_\_\_\_\_).
- u. Danielson, C., J.L. Lyon, M. Egger and G.K. Goodenough. 1992. Hip Fractures and Fluoridation in Utah's Elderly Population. *JAMA* 268:746-748. (Exhibit\_\_\_\_\_).
- v. Pendrys, D.G. and R.V. Katz. 1989. Risk of Enamel Fluorosis Associated with Fluoride Supplementation, Infant Formula, and Fluoride Dentifrice Use. *Am. J. Epidemiol.* 130:1199-208. (Exhibit\_\_\_\_\_).
- w. Osuji, O.O. and G. Nikiforuk. 1988. Fluoride Supplement-Induced Dental Fluorosis - Case Reports. *Pediatric Dentistry* 10:48-52. (Exhibit\_\_\_\_\_).
- x. Marier, J.R. 1991. Intakes of Magnesium and Fluoride, and Some Systemic Effects. *Proc. Finn. Dent. Soc.* 87(4):581-594. (Exhibit\_\_\_\_\_).
- y. Leverett, D.H. 1982. Fluorides and the Changing Prevalence of Dental Caries. *Science* 217:26-30. (Exhibit\_\_\_\_\_).
9. My research, analysis and conclusions on this subject regarding adults and young adults has been published in the article Adult and Young Adult Total Fluoride Intake in the USA, (Exhibit\_\_\_\_\_).
10. My research, analysis and conclusions on this subject regarding infants and toddlers has been accepted for publication in Proceedings of the South Dakota Academy of Science, volume 71, to appear in April 1993, entitled Infant and toddler Total Fluoride Intake in the USA. The sense of this article is also contained in the previously published Exhibit\_\_\_\_\_.

#### EVIDENCE OF FLUORIDE OVER-EXPOSURE

11. It is my best scientific judgement that the average fluoride exposure for populations of non-fluoridated and low-fluoride communities in the USA is at, and in many instances, above the average dose recommended by health authorities. Exhibit\_\_\_\_\_).
12. The originally proposed "optimal" fluoride consumption level 1 mg/day presupposed a consumption level of 1 liter of tapwater per day. Thus 1 ppm (1 mg/l) was chosen.
13. The dose of fluoride actually delivered in fluoridated areas is much greater, primarily due to an underestimation of the total quantity of fluoridated water consumed and its effect upon the fluoride content of commercially prepared foods, and those prepared or reconstituted in the home. (Exhibit\_\_\_\_\_).
14. The values given for low fluoride communities [0.4 ppm and below], with no fluoridation programs, given in these Exhibits, and summarized in Table I of Exhibit \_\_\_\_, are all within the recommended fluoridation guidelines for fluoridated communities.
15. Non-fluoridated communities having higher naturally fluoridated waters [ $>0.4\text{ppm}$ ] have exposure means at the mid- to upper end of the "recommended" range.
16. A community with a naturally fluoridated water content of 0.5 ppm will already have average exposure to fluoride at the mid- to upper end of that recommended range.

#### **Adult Fluoride Exposure Levels**

17. An estimation of fluoride exposure averages may be made for population groups utilizing total fluid consumption data, the route of the majority of fluoride exposure, along with contributions from other sources for these populations. (Exhibit\_\_\_\_\_).
18. Until recently, all studies on fluoride consumption levels suffered from a lack of sound information upon which to base the total intake of fluids. In a fluoridated community this lack may lead to large errors in estimating fluoride intake, since one of the primary routes of exposure is water and foods processed and prepared therein.
19. The relatively recent availability of a water intake study (Ershow and Cantor, 1989) having well defined and statistically sound data now permits accurate fluoride exposure estimations. (Exhibits\_\_\_\_\_).
20. The Ershow and Canter total water and tapwater intake survey is based upon a stratified random sample, and represents more than 26,000 persons living in households in the U.S. (Exhibit\_\_\_\_\_).
21. Using the published data from the Ershow and Cantor study, projected means for total dietary fluoride intake in a hypothetical fluoridated city can be estimated. Because the use of fluoride containing dental health care products is so prevalent in this country, intake from that source was also included to yield a total fluoride exposure from these sources.
22. The average adult (20-64 years) daily fluoride intake in a fluoridated community is approximately 2.4 mg/day. This is more than twice the sought after level of 1 mg/day. The average total intake for adult males was higher, and calculated to be 2.7 mg/day, almost triple the generally claimed "optimum."
23. In addition, total fluid intake varies greatly between individuals. Those in the upper twenty-fifth, fifth and first percentiles in fluoridated communities are at substantial risk of excessive fluoride exposures. (Exhibit\_\_\_\_\_, table 2).
24. Consumers in the upper 5% of fluoride consumption were found to be consuming approximately 4.1 mg/day of fluoride.

25. Consumers in the upper 1% were found to be consuming approximately 5.6 mg/day of fluoride.
26. These doses range from more than three to almost six times that recommended for young adults and adults.

#### **Infant and Toddler Exposure Levels**

27. Infants primarily dependent upon formula comprise one category especially at risk of fluoride overdose. Exhibit\_\_\_\_, table 2, lists calculated average ranges of fluoride dietary intakes for 1-,3-, and 6-month-old infants using formula concentrates exclusively and prepared with 1 ppm fluoridated water.
28. Proponents of fluoridation propose an infant intake of 0.05-0.07 mg/kg of body weight/day to achieve maximum caries reduction, and consider an intake of about 0.1 mg/kg/day between birth and age 12 as capable of inducing dental fluorosis, one of the first signs of fluoride toxicity. (Exhibit\_\_\_\_).
29. As can be seen form table 2, the average intakes all lie well above the fluorosis threshold of 0.10 mg/kg/day (0.12-0.15). Fluoride overdose of those infants with a high caloric intake would be still larger. (Exhibit\_\_\_\_).
30. For the 0- to 6-month-old in the top 5 percent of fluid intake (including formula), the corresponding fluoride intake would be 1.66-1.93 mg/day. This is 0.21 - 0.24 mg/kg/day. Note that this is four times the recommended level (see #28 above).
31. While not a majority, a substantial number of infants consume formula concentrate, the likely outcome of which is fluoride intoxication during the time the bulk of their nourishment is from formula. Were an adult (150 lbs) to consume fluoride at this same ratio to body weight, it would be equivalent to daily consumption of 10 to 16 mg each day! (Exhibit\_\_\_\_).
32. Over exposure in fluoridated areas thus is found to be from more than two to more than three times that recommended for infants and toddlers. (Exhibits\_\_\_\_).
33. It should be noted that breast milk, considered to be the most desirable infant food, stubbornly retains a very low and nearly unchanged fluoride concentration, regardless of the mother's fluoride intake. Perhaps nature protects the rapidly growing infant from fluoride overdose in this manner when it is in a stage of rapid growth and cells are even more susceptible to fluoride damage. (Exhibit\_\_\_\_).
34. These dietary totals show that substantial numbers of individuals and infants (thousands in a community of 35,000) will receive highly excessive and potentially dangerous fluoride exposures when the community fluoridates its water to 1.1 ppm.

#### **FLUORIDE TOXICITY AND EFFECTIVENESS**

35. Evidence of fluoride toxicity from earlier over-exposure is reflected by the rising dental fluorosis rate. (Exhibits\_\_\_\_\_).
36. In one study, more than one-half of those aged 6-12 exhibited detectable dental fluorosis in a fluoridated city, whereas 12.2% were detected in an nonfluoridated community. The value for the nonfluoridated city was the same as that for a naturally fluoridated city prior to implementation of community fluoridation. (Exhibit\_\_\_\_\_).
37. Current fluorosis values are several-fold higher than reported for cities of similar fluoride levels in the 1940's before initiation of artificial fluoridation.

- (Exhibit\_\_\_\_\_).
38. Smith pointed out that increased fluoride intake from a fluoridated community raised the mean blood ionic fluoride steady state concentration for the total population. (Exhibit\_\_\_\_\_). Individuals having a higher blood fluoride level are at greater risk of having peak blood fluoride concentrations which exceed the threshold level for damage to sensitive cells.
  39. It is wishful thinking to assume that only tooth-forming cells are adversely affected by high blood fluoride peak levels. Smith also notes that fluorosis must be recognized for what it is: an irreversible pathological condition which is universally recognized as the first sign of systemic chronic fluoride poisoning. (Exhibit\_\_\_\_\_).
  40. Over-exposure is also shown by numerous studies in the recently identified excessive hip fracture incidence in fluoridated communities compared to those lacking fluoridation. (Exhibits\_\_\_\_\_).
  41. The major claimed benefit in water community fluoridation, namely reduction in the anticipated tooth decay rate, is at best questionable, and may be false, given solid studies indicating parallel decay rate declines of equivalent magnitude in non-fluoridated communities, both before and after, the institution of community fluoridation programs. (Exhibits\_\_\_\_\_).
  42. The exposure and resultant effect due to the almost universal public usage of a host of fluoride-containing dental products (toothpaste, mouth washes, rinses, gels, dental supervised treatments) receives little attention in most fluoride exposure studies and now makes a significant contribution to fluoride exposure. (Exhibits\_\_\_\_\_).
  43. These additional sources were not available when fluoridation was first proposed, and have long since made such fluoridation, at best, redundant, and at worst, very dangerous

## **CONCLUSION**

44. There is a high degree of scientific certainty that substantial portions of the young adult and adult populations, as well as infant and toddler populations, are being exposed to fluoride levels capable of producing cell damage, of which fluorosis is the outstanding initial manifestation.
  45. A proliferation of fluoride containing products that are now available contributes in an unplanned manner to the total fluoride intake.
  46. Exposure to fluoride is uncontrolled because individuals normally select the volume and components of their diets in complete disregard to its fluoride content. Actual consumption levels vary greatly from person to person, putting those in the upper levels of consumption especially at risk.
  47. Adults in fluoridated areas consume 2.4 to 3.3 times more fluoride than adults in nonfluoridated cities. Those living in nonfluoridated areas already consume the so-call "optimum" level of fluoride without artificial fluoridation.
  48. It is my best judgment, reached with a high degree of scientific certainty, that fluoridation is invalid in theory, and is dangerous to the health of consumers.
  49. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**SAFE WATER ASSOCIATION, INC.,**

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**Plaintiff,****vs.****Case No. 92 CV 579****CITY OF FOND DU LAC,****Defendant.**

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**AFFIDAVIT OF DR. LENNART KROOK  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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State of New York  
City of Ithaca

Dr. Lennart Krook, being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

1. I am a Doctor of Veterinary Medicine (D.V.M.) and a Doctor of Philosophy (Ph.D.).
2. I am employed by the College of Veterinary Medicine, Cornell University, Ithaca, NY. I was promoted to Full Professor of Pathology in 1965.
3. I received my D.V.M. from the Royal Veterinary College, Stockholm, Sweden, in 1953. I received my Ph.D. from the Royal Veterinary College, Stockholm, Sweden, in 1957.
4. I have a joint appointment to the Division of Nutritional Sciences at Cornell University.
5. I have carried out extensive research on fluoride intoxication under field conditions and in the laboratory in cattle, pigs and foxes. The research has been published in refereed scientific journals. The articles include:
  - a. Industrial Fluoride Pollution. Chronic fluoride poisoning in Cornwall Island cattle. Cornell Vet., 69, Suppl. 8:1-70 (1979).
  - b. Effect of dietary calcium and fluoride levels on growth and reproduction of swine. Nutrition Report Internatl., 5:313-320 (1972).
  - c. Dietary calcium and fluoride interaction in swine; Effects on physical and chemical bone characteristics, calcium binding protein and histology of adults. J. Nutrition, 102:1623-37 (1972).
  - d. New York State and US Federal fluoride pollution standards do not protect cattle health. Cornell Vet., 70:183-192 (1980).
  - e. Milk production of cows exposed to industrial fluoride pollution. J. Toxicol. Environ. Health, 10:473-78 (1982).
  - f. Dental fluorosis in cattle. Cornell Vet., 73:341-62 (1983).
  - g. Toxic effects of food borne fluoride in silver foxes. Cornell Vet., 76:395-402 (1986).
  - h. Milk production of cows fed fluoride contaminated commercial feed. Cornell Vet., 76:403-414 (1986).
  - i. Fluoride intoxication of dairy calves. Cornell Vet., 77:84-98 (1987).

- j. Ameliorative effects of reduced food-borne fluoride on reproduction in silver foxes. Cornell Vet., 78:385-391. (1988).
6. Consumption of 1 mg of fluoride per day is claimed to reduce dental caries. Consumption of 2 mg of fluoride per day is considered the lower toxic level in children (Exhibit\_\_\_\_). Consumption of 3.2 mg of fluoride is considered the lower toxic level in adults (Exhibit\_\_\_\_).
7. As soon as water is fluoridated, the food chain becomes fluoridated. Our vegetables in our garden are fluoridated, our cereals and vegetables processed in fluoridated water are fluoridated, and so on in a never ending chain.
8. After the water in Chicago was fluoridated to 1 ppm, the intake of fluoride was determined by chemical analyses of actual diets. It ranged from 3.6 mg to 5.2 mg per person per day (Exhibit\_\_\_\_). This is in excess of levels considered safe.
9. Variation in water consumption is great, and so is, consequently, the variation in the fluoride consumption in fluoridated areas. An outdoor worker, who easily consumes one gallon of water in a warm day, receives a toxic dose from that source alone.
10. Early trials of the effectiveness of fluoridation were not carried out in a scientific manner, and used procedures which tend to render biased results. In addition, Ottawa Kansas abandoned fluoridation after 3 years, during which time tooth decay actually increased (Exhibit\_\_\_\_). Research since that time supports the conclusion that fluoride is ineffective at preventing caries (Exhibit\_\_\_\_).
11. There is serious reason to believe fluoride may impact hardening of arteries and heart death.
12. In 1953, after 8 years of fluoridation, heart deaths in Newburgh, NY were 74% higher than the national average.
13. Antigo, Wisconsin, fluoridated its water in 1949. By 1957, the heart death rate in Antigo surpassed the national average for the first time and the rate continued climbing thereafter. >From 1950 to 1970, the national average rose by 35 deaths per 100,000, while in Antigo it rose by 289 deaths per 100,000, which is 744% higher than the national average. Prior to fluoridation, the heart death rate in Antigo was 26% less than the national average. 25 years after fluoridation it was 48% greater than the national average.
14. In 1956, the 13th paper from the Newburgh-Kingston study dealt with pediatric findings (Exhibit\_\_\_\_). The authors measured hemoglobin levels, and index of anemia, and stated that "the hemoglobin levels showed no significant difference between Newburgh and Kingston children." Then you look at the figures: 29 of the 500 children in Newburgh were anemic, and 10 of 405 Kingston. The rate of anemia in children in fluoridated Newburgh was 2.35 times greater than in the children in non-fluoridated Kingston. This difference IS statistically significant.
15. One disease of adulthood and aging which is associated with excessive water intake is chronic kidney disease. Water intake is increased with chronic kidney disease, and the ability of the kidneys to get rid of ingested fluoride is decreased. The risk of chronic fluorosis is therefore increased to two reasons.
16. My own research into the effects of fluoride on animals has raised many concerns about the safety of fluoridation.
17. Fluoride is transmitted from the cow to the fetus through the placenta. Teeth and bone fluorosis can be congenital.
18. Fluoride decreases the normal release of calcium from the bone and milk production decreases. The catastrophic decrease in milk production

- sproduced by fluoride exposed cows is described in Exhibits \_\_ & \_\_.
19. Studies on decreased milk production in which I have participated show that the full impact of fluoride exposure is manifest after several generations. A calf born to a fluoride exposed cow has a certain fluoride burden at birth. The calf is continuously exposed to fluoride and her offspring is subjected to still higher fluoride accumulation, etc. We have called this the "generation effect." (Exhibit\_\_\_\_).
  20. The effects of food-borne fluoride on reproduction in foxes are reported Exhibits \_\_ & \_\_. Fluoride exposed vixens produced much smaller litters and neonatal death was high. Reduced fluoride intake resulted in increased kit production and decreased neonatal mortality.
  21. While the above research was performed on animals, there is no reason to believe that the results do not apply to human beings.
  22. It is my best judgment, reached with a high degree of scientific certainty, that fluoridation is invalid in theory and ineffective in practice as a preventive of dental caries. It is dangerous to the health of consumers.
  23. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.

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Research report, Editorial, Fluoride 39(1)1-2 January-March 2006 "[Failure to diagnose fluoride poisoning in horses caused by water fluoridation](#)"

Research report, Fluoride 39(1)3-10 January-March 2006 "[Fluoride poisoning of horses from artificially fluoridated water](#)" Lennart P. Krook, Cathy Justus Ithaca, NY and Pagosa Springs, CO, USA (See photos)

Research report, Fluoride 39(2)89-94 April-June 2006 "[Allergy in horses from artificially fluoridated water](#)" Cathy Justus, Lennart P. Krook Pagosa Springs, CO, and Ithaca, NY, USA (See photos)

Video: [Poisoned horses](#) 33:56 minutes.

State Of Wisconsin

Circuit Court

Fond Du Lac County

SAFE WATER ASSOCIATION, INC.,

Plaintiff,

Case No. 92 CV 579

vs.

CITY OF FOND DU LAC,

Defendant.

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**AFFIDAVIT OF JOHN R. LEE, M.D.  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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State of California  
City of Sebastopol

John R. Lee, M.D., being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

**BACKGROUND AND EXPERIENCE IN GENERAL**

1. I am a physician, retired from active practice since April 1989, having maintained a busy family practice in Mill Valley, California, since 1959. While in practice, I was a member of the staff of Marin General Hospital, San Rafael General hospital (now closed), and Ross General Hospital (now closed) and was active with Marin Medical Society, serving as director, editor of its Medical Bulletin, delegate and chairman of the Society's Environmental Health Committee. I am a member of the American Academy of Family Physicians and, for two years, was president of its Marin chapter. I also served as a Clinical Instructor in Family Practice at the University of California Medical School in San Francisco. Though now retired from active practice, I continue to teach a course I created fourteen years ago, entitled "Optimal Health", at the college of Marin and I consult with patients primarily on problems of nutrition and osteoporosis.
2. I graduated cum laude in mathematics from Harvard University in 1951 and received my M.D. from the University of Minnesota Medical School in 1955. After my internship (now called residency) at Minneapolis General Hospital, I practiced briefly in Faribault, Minnesota, before joining the Navy as a Medical Officer in 1957. I served 14 months with a Marine Regiment in Japan and Okinawa as Regimental Surgeon and 10 months as a Naval Medical Officer at Treasure Island, California. I am retired from the Naval Reserve as Lt. Commander, Medical Corps, USNR.
3. I have written the following published articles:
  - Optimal Fluoridation-The Concept and Its Application to Municipal Water, Fluoridation, Western Journal of Medicine 1975.
  - Gilbert's Syndrome and Fluoridation, FLUORIDE, 1983.
  - Fluoridation and Cancer, Cancer Forum, 1989.
  - Fluoridation and Osteoporosis, FLUORIDE, 1990.
  - Osteoporosis Reversal-The Role of Progesterone, International Clinical, Nutrition Review, 1990.
  - Osteoporosis Reversal with Transdermal Progesterone, Lancet, 1990.
  - Is Natural Progesterone the Missing Link in Osteoporosis Hormonal and Nutritional Aspects of Osteoporosis, Health & Nutrition Update, 1991.
  - Fluoridation and Osteoporosis '92, FLUORIDE, 1992.

Also, I co-authored with Dr. G. L. Waldbott the following:

- Toxicity From Repeated Low-Grade Exposure to Hydrogen Fluoride/case Report, Clinical Toxicology, 1978.

In addition, I have authored several chapters and presently serve as an advisor for a book on medicine scheduled for publication in 1993.

4. In recognition of my fulfilling continuing education programs in family practice, I received the following awards from the American Academy of Family Physicians:
  - Charter Fellow, 1973 and
  - 25 Years of Service Award, 1984
  - Life Member Award, 1990

#### **ADVERSE HEALTH EFFECTS OF FLUORIDATION**

5. Because of my interest in nutritional and environmental health, I was made chairman of the environmental health committee of our Marin Medical Society. In 1972, after an election in which the fluoridation had narrowly passed, I and my committee were asked by the medical society to review the scientific evidence in regard to fluoridation.
6. In so doing, we reviewed all the scientific references offered by the Public Health Department spokesmen and those offered by the anti-fluoridation spokesmen (consisting, by and large, of the same set of references). Among the many references we examined were included the Grand Rapids/Muskegon, the Newburgh/Kingston, and the Bartlett/Cameron study, all putatively major studies upon which the fluoridation proposition is based.
7. Somewhat to our surprise, we found that these original studies were so badly designed, so poorly executed, and so full of internal contradictions that we concluded the available literature did not support the Public Health fluoridation claims in three vital areas:
  - a. credible documentation or demonstration of dental benefits.
  - b. the dangers of fluoride toxicity, and
  - c. present total fluoride intake from other sources.
8. For these reasons, our committee decided we could not support fluoridation.
9. I was then asked to perform, along with the dental society, a study of dietary fluoride intake in Marin county prior to the initiation of water fluoridation. I proceeded with this study which was eventually published in the Western Journal of Medicine, (Exhibit \_\_\_\_), having found that the daily dietary fluoride intake of typical "unfluoridated" Marin children equaled or surpassed the optimal daily dose as recommended by the Public Health Department.
10. This issue was debated before the California State Board of Health, at which I participated. In claiming a much lower dietary fluoride intake, the only study presented by the Public Health Department spokesman was the 1943 data from McClure but fraudulently re-dated to indicate 1973 diets. Despite having this fraud revealed to them before their vote, the State Board of Health moved to fluoridate Marin county. It was then that I realized that the fluoridation problem was not scientific, but something else entirely.
11. The same issue of Western Journal of Medicine published an opposing article by Professor Newbrun who, lacking any contrary data or any real data of dietary fluoride since 1943, presented the ludicrous argument that only the fluoride in water acted to prevent dental decay. Shortly after the

publication of my study, several larger studies were reported, all confirming my findings.

12. In particular, a study by Wiatrowski et al. found that pediatric processed foods contained toxic levels of fluoride due to the use of fluoridated water (Exhibit \_\_\_\_ ) and this led to an industry-wide change in the formulation of pediatric foods, eliminating the use of fluoridated water.
13. On presenting the findings of our environmental health committee and the results of the dietary fluoride study, the Marin Medical Society board of directors voted to withhold its approval of fluoridation. This led to several debates before the board between myself and Public Health spokesmen who unsuccessfully sought to overturn the Society's decision. This decision held firm until after my retirement from active practice in 1989 when a new board, without any debate, discussion, or knowledge of its own history, rubber stamped its approval of fluoridation. My written requests for a new hearing on the subject have remained unanswered. Again I am forced to conclude that the fluoridation issue is not science but something else.
14. During my practice from 1972 to my retirement in 1989, I observed numerous patients whose illnesses suggested fluoride toxicity. To test this hypotheses, I utilized the "challenge" test, a standard test by which, for instance, milk intolerance in infants is demonstrated. In this manner, I have found fluoride toxicity to cause or exacerbate numerous illnesses including gastrointestinal disease, urinary bladder spasms, musculoskeletal illnesses, and, in particular, Gilbert's syndrome, a constitutional mild jaundice caused by a deficiency in a single liver enzyme, glucuronyl transferase.
15. My paper concerning fluoridation and Gilbert's syndrome was accepted by the journal FLUORIDE of the International Society of Fluoride Research in 1983 (Exhibit \_\_\_\_).
16. During these years, I also had occasion to appear with Dr. Waldbott as medical consultant in a legal suit involving the multiple illnesses of a man poisoned by exposure to fluoride in the course of his occupation. The man was successful in his suit and Dr. Waldbott and I co-authored a report concerning this case, published in the journal, Clinical Toxicology (Exhibit \_\_\_\_).
17. I have had several other experiences testifying as a fluoride expert in fluoridation-related legal challenges or debates before municipal boards. In these situations, the arguments of fluoridation proponents are always based on discredited historical claims or ad hominem attacks against their opponents and never on the abundant scientific evidence available on the subject of fluoridation, which refutes their claims.
18. Subsequently, I became a member of the International Society of Fluoride Research and met from time to time with scientists from around the world. The bulk of these scientists' research was directed at the problem of fluoride toxicity and the goal of keeping fluoride to an acceptable minimum in the environment.
19. Throughout the scientific community, fluoride is known to be a potent enzyme inhibitor and, as such, is dangerous to many botanical and animal life forms. As a result of this work, most of the world's nations with sufficient technology for fluoridation choose not to fluoridate and considered the U.S. Public Health policy of mass fluoridation to be unwise and lacking in credibility.

## **BONE FRACTURES**

20. In my practice, the problem of osteoporosis attracted my attention. There were those who argued fluoride might be beneficial to bones, basing this

largely on the putative assumption that fluoride is beneficial to teeth. Bone researchers around the world reported studies which indicated fluoride was, instead, toxic to bones.

21. Fluoride proponents in the U.S., such as Dr. Riggs, persisted with fluoride treatment trials until 1990 when they found that hip fracture rates actually increased in the fluoride-treated patients when compared to the control patients.
22. When hip fracture rates are compared between fluoridated and unfluoridated communities, all five recent ecologic studies in the U.S. and U.K. indicate they are positively correlated to fluoridation (i.e., increased).
23. The U.S. Public Health Department claims there is one study that shows a fluoridation benefit in hip fracture reduction and therefore the picture is clouded. This is the Finnish study by Simonen and Laitinen in which they claimed to compare hospital discharge data for residents of Kuopio and Jyväskylä, regardless of where they were treated.
24. According to the data they collected, hip fracture rates for fluoridated Kuopio residents were lower than that for Jyväskylä residents. However, criticism of this paper by bone specialists at the University of Kuopio and others refuted this conclusion on the basis of incomplete data collection and the authors' apparent ignorance of the research in Kuopio of the histomorphologic evidence of fluoride toxicity to bone.
25. Despite the publication of Simonen and Laitinen's paper, Kuopio's city council decided to discontinue fluoridation in Kuopio which, until then, was the only community in Finland that was still fluoridated.
26. The most recent study by Danielson of Mormon Utah communities reveals a 100% increase in hip fracture rates in women by age 75 and an overall increase of 40% in men's hip fracture rates in the fluoridated community. (Exhibit \_\_\_\_).
27. In spite of all this evidence, the U.S. Public Health Department continues to advocate fluoridation. Here again, the role of science and interest in the public health seems to have a low priority in the U.S.P.H.S. agenda.

#### **DENTAL FLUOROSIS**

28. Dental fluorosis (i.e., visible mottling of children's teeth due to fluoride) is universally recognized as sign of systemic fluoride toxicity. All early references to the calculation of "optimal fluoridation" agreed that this level of fluoride intake would cause less than 10% of the children to show dental mottling.
29. However, numerous references in the U.S. and Canada now show 10% mottling in unfluoridated children and over 30% mottling in fluoridated children. This is irrefutable evidence that our children are exposed to excess fluoride and, by definition, they are being subjected to systemic fluoride toxicity.
30. While this fact is admitted, the U.S. Public Health Department recommends only that all sources of fluoride other than fluoridation should be decreased. This bit of tortured reasoning is based, like the argument concerning fluoride and hip fracture, on the putative claim that fluoridation reduces dental caries in children.

#### **CANCER**

31. In April, 1991, I participated in the Peer Review meeting of the NTP (National Toxicology Program) fluoride/cancer rodent study held in

Triangle Park, North Carolina. In this study, dose-related increases of a rare type of liver cancer, thyroid adenomas, mucosal dysplasias, osteosclerosis, and bone cancer were found in fluoride-exposed rodents.

32. The Peer Review panel was presented with only a watered-down version of the bone cancers for their consideration. After considerable discussion, the panel concluded that the dose-related increase in bone cancer in male rats was, indeed, possibly due to the fluoride.
33. Thus, an official U.S.P.H.S. board agreed that no longer could fluoride be considered free of cancer risk.
34. They refrained, however, from calling for a reduction in the maximum contaminant level (MCL) for fluoride, this being a function of the EPA (Environmental Protection Agency) which has yet to act on it.

#### **INEFFECTIVENESS OF FLUORIDATION**

35. No reputable study of the past two decades has shown a significant reduction of children's caries rates by fluoridation.
36. The most recent NIDR (National Institute of Dental Research, 1986-1987) report of over 39,000 U.S. schoolchildren finds no difference in DMF (decayed, missing, or filled) rates relative to fluoridation status. (Exhibit \_\_\_\_).
37. Similar results are obtained in a follow-up Newburgh/Kingston study, studies of Boston area communities, and studies in Canada, New Zealand, an Australia.
38. Fluoride has no known metabolic function that fulfills the category of "essential" for humans. The National Academy of Sciences, in their 1971 book FLUORIDES, Chapter 5, called "Is fluoride an essential element?", answers with a "NO".
39. The federal Register, since 1979, no longer classifies fluoride as "essential or probably essential".
40. It is therefore my best scientific judgement that fluoridation of public water (1 ppm fluoride) is ineffective in promoting dental health. Further, it is capable of inducing serious health problems.
41. A partial list of additional references on which I base this judgement is enclosed.
42. I make this affidavit in support of the Plaintiff's Motion for Summary judgement.

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**State Of Wisconsin**

**Circuit Court**

**Fond Du Lac County**

**SAFE WATER ASSOCIATION, INC.,**

**Plaintiff,**

**Case No. 92 CV 579**



**vs.**

**CITY OF FOND DU LAC,**

**Defendant.**

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**AFFIDAVIT OF WILLIAM L. MARCUS, Ph.D., D.A.B.T.  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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State of Maryland  
City of Boyds

William L. Marcus, Ph.D., being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

**BACKGROUND**

1. I received my B.A. from Brooklyn College in 1961, My M.S. in Pharmacology from Howard University in 1968, and my Ph.D. in Pharmacology from Howard University in 1971.
2. I have held the following positions:
  - a. 1990-1992 Senior Science Advisor in the Health and Ecological Criteria Division, Office of Drinking Water, EPA, Washington, D.D.
  - b. 1983-1987 Adjunct Assistant Professor of Toxicology in the Department of Biometrics, Bethesda Naval Hospital, Bethesda, MD.
  - c. 1979 Senior Science Advisor and designated Chief Toxicologist by Director of Criteria and Standards Div., Office of Drinking Water, EPA.
  - d. 1978-1979 Branch Chief of the Health Efforts Review Branch, Office of Drinking Water, EPA.
  - e. 1975-1978 Senior Toxicologist, Office of Toxic Substances, EPA.
3. I have been awarded the BRONZE MEDAL, US EPA 1977. This medal was awarded for "Contributions to Development and Review of Toxicological Studies." Also, the BRONZE MEDAL, US EPA 1983. This medal was awarded for the Initiation and Development of the Health Advisory Program for the Office of Drinking Water.
4. I also received a COMMENDATION, from the Office of Toxic Substance for Work on the Agency for Toxic Substances and Disease Registry Toxicology Profiles on Benzene and Arsenic.

**EVIDENCE OF HEALTH RISKS OF FLUORIDATION**

5. My specific job responsibility as Senior Science Advisor was to review all the science that was to be used by the U.S. EPA's Office of Drinking Water.
6. In on May 29, 1990, I wrote memoranda (exhibit\_\_\_\_) to EPA's management to Mr. Michael B. Cook, Director of the Office of Drinking Water and to LaJuana Wilcher, Assistant Administrator Office of Water.
7. The subject of these memoranda was fluoride and the possible and certain adverse health effects this element has on the human population.
8. In my memorandum entitled, Fluoride Conference to Review the NTP Draft Fluoride Report, the National Toxicology Program's (NTP) report was

discussed and critically reviewed. (Exhibit\_\_\_\_). This report concerned studies performed on rats to examine a possible link between cancer and fluoridation. The original report submitted by NTP's contractor (Battelle) was rewritten. Most carcinogenic endpoints determined by Battelle's board certified veterinarian pathologists were systematically downgraded by NTP employees to lesser carcinogenic lesions.

9. My review of the evidence did not agree with the NTP's conclusions because there were logical errors and omissions of fact in the report.
10. First, because earlier tests ignored fluoride, the historical database animals used for comparison actually constituted a group which had received fluoride sufficient to place them between the low- and mid-concentration group in the NTP study. If fluoride in fact influences the "spontaneous" or background incidence of osteosarcomas in male rats, comparisons with those in the historical database is misleading. Those rats had consumed significant fluoride.
11. The use of historical controls by NTP was the basis of the characterization that there was equivocal evidence of carcinogenic activity. Independent investigators for the U.S. Congress have determined that the systematic downgrading of the different types of cancer as stated in the report done by the original contractors, was coerced from NTP employees.
12. I also pointed out in my memos that, in the animal studies the levels of fluoride found in the bones of the animals were the same as or lower than those found in people. The highest dosed level of rats had lower levels of fluoride in their bones (5,470 ppm) compared to people (7,000 ppm) at the MCL (maximum amount allowed by law) of 4 ppm.
13. This can be interpreted as people who ingest drinking water at the MCL have 1.3 times more fluoride in their bones than male rats who get osteosarcoma. This is the first time in my memory that animals have lower concentrations of the carcinogen at the site of adverse effect than do humans.
14. Subsequently an evaluation of fluoride and nonfluoride exposed human populations was published. The study demonstrated that in New Jersey there is as high as an eight-fold increase in osteosarcoma (almost always fatal within 4 years) in white men under eighteen years of age in fluoridated areas, as compared with nonfluoridated areas. This demonstrates that my original concerns were well founded. (Exhibit\_\_\_\_).

#### **GENETIC MUTATIONS**

15. There were also three different short term in vitro tests performed on fluoride and all these tests proved fluoride to be mutagenic. An Ames test was performed and reported to be negative. Bruce Ames, in a letter to Arthur Upton introduced in the Congressional Record, stated that his test system was inappropriate for fluoride testing based on a number of technical considerations.
16. EPA's own guidelines require that in vitro tests be taken into consideration when found positive. In this case, the mutagenicity of fluoride supports the conclusion that fluoride is a probable human carcinogen.
17. Melvin Reuber, M.D., a board certified pathologist and former consultant to EPA and part time EPA employee, reviewed some of pathology slides and the Battelle report. Dr. Reuber has had his pathologic diagnoses challenged several times in the past. When an independent board together with Dr. Reuber went over the slides, his opinion was always upheld. He first published the work that identified hepatocholangiocarcinoma as a pathologic entity.

18. The report changed Battelle's own board certified veterinary pathologist's diagnoses from hepatocholangiocarcinoma to hepatoblastoma and finally to hepatocarcinoma. Dr. Reuber reviewed the pathology slides and stated that these lesions are indeed hepatocholangiocarcinoma. Because Dr. Reuber first identified and published his findings on this tumor, I trust his opinion in this matter. These tumors are extremely rare. Dr. Reuber's diagnoses would make the liver cancers found significant because of their rarity. This changes the equivocal finding of the board to at least some evidence or clear evidence of carcinogenicity.
19. In addition, the oral changes in the report were down-graded from dysplasia and metaplasia to degeneration. Dr. Reuber said that this change should also be reviewed. The report also down-graded adrenal pheochromocytomas and tumors to hyperplasia. This needs to be reviewed by an independent board.
20. The other liver carcinomas were down-graded to foci by artificially defining a need for 75% compression in the tumor before it was no longer a foci. Using this changed definition carcinomas were down-graded to adenomas and adenomas down-graded to eosinophilic foci. In almost all instances, the Battelle board certified pathologists' findings were down-graded. This is highly unusual.

#### **OTHER EVIDENCE OF CANCER RISK**

21. Yiamouyiannis and Burk published epidemiology studies that have since been revised twice, by Burk (former head of the Cytochemistry section at NIH). In these extensively peer reviewed papers, the authors found that about 10,000 deaths a year are attributable to fluoride water treatment. (Exhibit\_\_\_\_\_).
22. The U.S. Public Health Service (U.S.PHS) criticized the original studies by erroneously asserting that the results reported by the authors were a result of changes in the age, race and sex composition of the sample. However, the U.S.PHS itself made mathematical errors and did not include 90% of the data.
23. The U.S.PHS method of analysis, when applied to the database, confirmed that 10,000 excess cancer deaths yearly were linked to fluoridation of water supplies. This evidence has been tested in the Pennsylvania Courts and found scientifically sound after careful scrutiny.

#### **EFFECTIVENESS OF FLUORIDATION**

24. Most of the general population believe that fluoride helps prevent tooth decay. As I pointed out in my report this is not the case. There appear to be at least four different publications from the U.S., Canada, and New Zealand that have reported similar or lower tooth decay rates in non-fluoridated areas as compared to fluoridated areas. (Exhibits\_\_\_\_\_).
25. In fact 18 countries including France, Germany, Italy, Spain, Switzerland and Austria, have either banned or no longer fluoridate their water supplies because of health concerns and/or because fluoride has no effect on tooth decay.

#### **PERVASIVENESS OF FLUORIDE**

26. One fact that is ignored by current E.P.A. standards is that the amount of fluoride that is consumed once added to the general water supply is much higher than originally anticipated. It gets into all drinks that use tap water for

dilution (frozen juices, cool aid, baby formula, etc.), and sticks on the surface of any material cooked in water.

27. The type of fluoride added to tooth paste is soluble and is absorbed by people. It represents a hazard to the young because they eat and drink far greater amounts per body weight than do adults. Babies, whose formulas are made by mixing with tap water get at least an eight-fold exposure when compared to adults. Since babies are rapidly growing individuals, a greater amount is absorbed and incorporated into bone. (Exhibit\_\_\_\_\_).

### **Hip Fractures**

28. In my July 29, 1991 memorandum, I noted that more startling published data that had come to light since the fluoride regulations were promulgated. We had been reviewing the fluoride literature since January 3, 1990 in order to rewrite the fluoride regulation.
29. The information available showed that certain segments of the U.S. population are currently sustaining fluoride-induced injuries such as hip fractures. Cooper, et al., in the July 24/31, 1991 issue of the Journal of the American Medical Association (exhibit\_\_\_\_\_) states, referring to a recent epidemiology study in England:
  - 34;We found a significant positive correlation between fluoride levels in county water supplies and discharge rates for hip fracture ( $r = .41$ ,  $p = .009$  etc.). This relationship persisted for both women ( $r = .39$ ,  $p = .014$ ) and men ( $r = .42$ ,  $p = .007$ )."
30. By inspection of the figure accompanying the report, the regression lines are from 0.1 to 0.95 mg/l with no apparent threshold for production of hip fractures. In other words, there was no safe lower limit. These numbers are 4 to 40 times below the current Maximum Contaminant Level and Maximum Contaminant Level Goal (4 mg/L).
31. As the authors stated, this is the latest of many studies demonstrating adverse effects to bone caused by fluoride at levels to which the majority of the US population on public water supplies are exposed. For example, last year in this same Journal, Jacobsen reported a similar association between fluoride and hip fractures in a study of 584,000 white women over 65 in the US. (Exhibit\_\_\_\_\_, see also exhibits\_\_\_\_\_).

### **COVER-UP AT THE EPA**

32. A subsequent letter written to my second line supervisor stated, "If ... there is a risk of cancer no matter how small the potential number of deaths per year will exceed many thousands". This, as well as my original memorandum, was so compelling that EPA management decided that no reputable scientist within EPA could publicly state these concerns.
33. When I continued to speak out against this politicalization of science, and the lies and cover-up I had witnessed, my dismissal from the EPA was engineered.
34. Judge Clarke in his decision of December 3, 1992 so eloquently stated, "I conclude that the reasons given for Dr. Marcus' firing were a pretext and that his employment was terminated because he publicly questioned and opposed E.P.A.'s fluoride policy." (Exhibit\_\_\_\_\_).
35. The official line in Washington has been "fluoride is good", and all evidence to the contrary has been and is being ridiculed, denied, distorted or suppressed.

## **CONCLUSION**

36. It is my professional opinion, reached with a high degree of scientific certainty, that fluoridation has no efficacy in preventing tooth decay and represents an unacceptable risk of cancer and other adverse health effects to the general population if added to drinking water.
  37. I make this affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**SAFE WATER ASSOCIATION, INC.,**

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**Plaintiff,****vs.****Case No. 92 CV 579****CITY OF FOND DU LAC,****Defendant.**

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**AFFIDAVIT OF JIM MAXEY, D.D.S  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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State of Oklahoma  
City of Tulsa

Jim Maxey, D.D.S., being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

1. I graduated from Northeastern State College, Tahlequah, Oklahoma in 1968, with a BS Degree in biology, and minors in chemistry and sociology.
2. I graduated from the University of Missouri-Kansas City School of Dentistry in 1972. Degree, Doctor of Dental Surgery (D.D.S.) I have been practicing general dentistry in Tulsa since 1973.
3. I am bound by state dental laws and by dental ethics to "educate myself beyond the usual level," and to make the "results and benefits of my investigative efforts available to all when they are useful in safeguarding or promoting the health of the public."
4. Until 1983, I used fluoride on all my dental patients, adults as well as children. I was very proud of the fact that my community's drinking water was fluoridated.
5. I quit using and recommending fluoride in 1983 when I discovered a considerable amount of fluoride research data that had been omitted from my dental education. What had been omitted was far more important and relevant than what had been included.

**EFFECTIVENESS OF FLUORIDATION**

6. Readily available research clearly documents that fluoride does not reduce or prevent tooth decay, as claimed by the United States Public Health Service (USPHS) and the American Dental Association (ADA).
7. In addition, I have reviewed all the "classical fluoride research studies" that the ADA and USPHS refer to that supposedly support their claim that fluoride reduces tooth decay.
8. I have reviewed the Newburgh-Kingston Studies, the Grand Rapids Study, and the Aurora-Rockford Study. I have also analyzed the water studies done by Dean, Taylor and Elvove.
9. None of these studies compare fluoridated and non-fluoridated communities. They all compared fluoridated communities to fluoridated communities.

- (USPHS data actually documents that populations with the most consistent fluoride exposure have the most tooth decay. Populations with the least consistent fluoride exposure have the least amount of decay.)
10. While the concentration of fluoride in the water varied between the tested cities, the significant difference between water supplies was the total mineral content of the water.
  11. The dental "researchers" studied only a very few of the children in each of the communities, and they just took a few X-rays and then charted the decayed, missing and filled teeth. The same children were not examined from one year to the next, and there was no attempt made to exclude children who had not lived in the same community for all of their life. There was no attempt to document whether or not a child had used a consistent source of drinking water. Data from other communities that could not be made to fit their hypothesis was carefully omitted.
  12. None of these "classical fluoride studies" was done in anything remotely resembling a scientific manner. One could readily conclude the results were intentionally deceptive. They certainly are meaningless. The USPHS repeatedly refers to studies "proving effectiveness," yet when the studies themselves are actually examined, they are either greatly flawed, or they actually show just the opposite -- completely ineffective.
  13. If fluoride does actually have some effect on dental caries, the only conclusion that can be reached from the data contained in the USPHS studies is that fluoride, at most, only slows or delays the rate of decay slightly. By age 18 there is no difference in the decay rates between fluoridated and nonfluoridated populations.
  14. A study published in the Journal of the American Dental Association shows that dentists in fluoridated communities earn more money than dentists in non-fluoridated communities. Exhibit\_\_\_\_. Hardly a ringing endorsement for the fabulous savings due to fluoridation.

### **SAFETY OF FLUORIDATION**

15. The "optimum" level of fluoride concentration in the water recommended by the EPA, .7 PPM to 1.4 PPM, is defined as a balance between the prevention of dental caries and the avoidance of objectionable fluorosis. "Objectionable fluorosis" is a mottling of dental enamel characterized by staining or pitting.
16. Fluorosis is not something that happens to the tooth after it erupts. It happens before the tooth erupts into the mouth. It happens inside the body, not outside.
17. Only two conspicuous symptoms are usually recognized for diagnosing fluoride poisoning. One is bone damage that normally goes unnoticed. The other is dental fluorosis.
18. The first visible symptom of chronic fluoride poisoning is mottled tooth enamel. Mottling occurs when the ingested fluoride inhibits the enzymes in the cells that are responsible for tooth enamel formation.
19. When these cells, called ameloblast, are eventually killed by the fluoride, enamel doesn't form properly in that area of the tooth. When the tooth erupts, its enamel surface appears pitted, mottled. After eruption, the mottled area quite often stains brown.
20. Mottling starts occurring when the concentration of fluoride in the drinking water reaches just .1 PPM. The mottling gets more severe and widespread as the concentration of fluoride increases. Exhibit\_\_\_\_.
21. The reason fluoride doesn't cause visible dental fluorosis in all consumers is better understood in reference to our immune system. How resistant or susceptible a person is to a chemical poison or to a disease process varies

22. from one individual to another, and it also varies at different times for each person.
23. Fluoride is an enzyme inhibitor. Because of its ability to irreversibly bind up needed enzymes, it reduces the effectiveness of our immune system. When our immune system operates less effectively, we become more susceptible. Data suggests that fluorine, lead and arsenic belong to the same group of toxins, as far as ability to cause some symptoms of toxicity even in minute dosages.
24. Fluoridation proponents consistently declare that fluoridation has no adverse effect on health. The USPHS, however, defines adverse effect very narrowly.
25. When consumed in low concentrations, fluoride may not "cause" any severe medical problems. It definitely does contribute to an increase in the severity of the symptoms of whatever a person's bodily ill might be. For example, research has found cancer death rates are consistently 15 to 20% higher in fluoridated populations than in non-fluoridated populations. Exhibit\_\_\_\_\_.
26. Fluoride is very hazardous to all living organisms, humans included, no matter how large or small the ingested dose.

#### **POLITICALIZATION OF THE FACTS OF FLUORIDATION**

27. Medical and dental groups were consistently opposed to fluoridation throughout the 30's and 40's. Pressure from industry groups caused an abrupt about-face in 1950. Since that time, the USPHS and the ADA have consistently suppressed any evidence which contradicted their support of fluoridation. These groups have consistently lied about the results of studies, and dismissed all controversy as settled.
  28. I have had repeated dealings with officials at USPHS and the ADA. While they are simply unable to answer the various criticisms of their data and studies, they are unwilling to take seriously any evidence that might reflect adversely on fluoridation, regardless of the source.
  29. What is well settled is the science of fluoridation. It is dangerous, and ineffective at preventing cavities. Those who are politically committed to fluoridation continue to distort and suppress that science.
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**SAFE WATER ASSOCIATION, INC.,**

**Plaintiff,**

**vs.**

**Case No. 92 CV 579**

**CITY OF FOND DU LAC,**

**Defendant.**

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**AFFIDAVIT OF HANS C. MOOLENBURGH, M.D.  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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Hans C. Moolenburgh, M.D., being first duly sworn on oath, under penalty of perjury, and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

**BACKGROUND**

1. I am a medical doctor. I graduated from the University of Leyden in 1952. I have been a general practitioner in the city of Haarlem in the Netherlands since April 1953.
2. Apart from being a G.P., my main interests are clinical ecology and complementary forms of cancer treatment.
3. I have written three books on the subject of fluoridation. Two of these are in Dutch: "Fluoridering van het leidingwater," 1973 and "Fluor Liever niet" in 1990.
4. The third book is in English: "Fluoride, the Freedom Fight," 1987. This is a true and accurate account of the consideration, debate, and eventual rejection of fluoridation in the Netherlands. I was actively involved in that process, and spent a number of years becoming very familiar with the science surrounding fluoridation.

**SAFETY OF FLUORIDATION**

5. On March 20th, 1972, the city of Amsterdam began fluoridating its water supplies. This had a widespread effect on surrounding communities who derived their drinking water from the Amsterdam water suppliers, such as Heemstede, Bennebroek, Hoofddorp, Haarlemmerliede and many others.
6. I found myself in a unique position to study the effects of fluoridation first hand, as half my practice lies in Heemstede (fluoridated) and the other half in Haarlem (non-fluoridated).
7. As I had already extensively studied the possible side-effects of fluoridated water from the mainly American literature, I was on the lookout for changes in the morbidity pattern in my practice. It soon became apparent that the extensive American data showing adverse effects were accurate.
8. The adverse health effects began almost at once, with people, especially

children, developing colicky pains. The parents of these children often did not even know that their water supplies were fluoridated. These sudden changes only took place in fluoridated Heemstede, and the cure was easy: non-fluoridated water.

9. This cure was shown repeatedly to be the correct one, as parents made errors with the jerrycans of non-fluoridated water. As soon as fluoridated water was given, be it only one cup, the sensitive children began to yell again. This was particularly stressful in babies, who often yelled through the whole night.
10. Other early symptoms were the small ulcers in the mouth called stomatitis aphtosa. I also saw how children with a known allergic condition that had been under control, such as children with atopic eczema, suddenly saw a return of their complaints.
11. Based upon this experience in my own practice, I founded a group of 12 medical doctors, two biologists and one lawyer to look into these side-effects in a serious and scientific way. All the doctors came from fluoridated communities and many did not believe in the existence of the side-effects, as the health authorities had emphatically denied their existence.
12. After several months of careful study, the group began to grasp the full importance of the problem. The difficulty at first was that each symptom in itself could be interpreted as a normal illness. Only a combination of symptoms (e.g. colicky pains, small ulcers and blurred vision) pointed in the true direction.
13. Our study was greatly helped by the fact that one of the doctors, whom himself had doubted the side-effects, had severe complaints of chronic abdominal pains. He was found to be a victim of the fluoridated water.
14. In each of the many cases of adverse fluoride reaction we identified, changing to non-fluoridated water cured the complaints. When fluoridated water was returned, the complaints returned.
15. The list of the most common complaints we could readily identify with the exposure to fluoridation includes;
  - Stomach and intestinal pains
  - Mouth ulcers
  - Excessive thirst
  - Skin irritation and eczema
  - Migraine-like headaches
  - Visual disturbances (blurred vision)
  - Worsening of known allergic complaints
  - Mental depression
16. After several months a new and disturbing complaint was added to these: joint pains. While the other complaints could be cured in two or three days with non-fluoridated water, the joint complaints took several weeks to some months of non-fluoridated water to clear up.
17. Some of our group urged that double blind tests should be used to evaluate our initial findings. Even though the clinical evidence was already overwhelming, the group voted in favor of such a double blind study. These tests proved that fluoridated water caused the side effects we had identified, and the results have been published (Exhibit \_\_\_\_).
18. Through continued study and research, we now understand that what we have been studying is not an allergy for the fluoride ion as we had first thought, but an intoxication from the highly toxic fluorides that had been added to the water supplies. It is well known that sensitivity to poisons can vary from person to person, and that this variation is quite extensive.
19. In an allergy, an increased dose of the irritating substance will still only give symptoms, perhaps increased in severity, in those allergic to it.

20. In a poison, a small dose will give complaints in the more sensitive persons. In the case of fluoride, research shows that to include about 5% of the population. With increasing doses more and more people will fall ill, and when the dose is high enough everyone will be ill, with perhaps the most sensitive persons already dead or dying.
  21. This poison reaction to fluoride, rather than an allergic reaction, has also been shown by the sudden increase of complaints in populations exposed to increased fluoridation, usually due to malfunctioning fluoridation equipment.
  22. As a summary of our research, we are now convinced that fluoridation of the water supplies causes a low grade intoxication of the whole population, with only the approximately 5% most sensitive persons showing acute symptoms.
  23. The whole population being subjected to low grade poisoning means that their immune systems are constantly overtaxed. With all the other poisonous influences in our environment, this can hasten health calamities.
  24. It is in the light of this constant low grade poisoning that the substantial evidence of increased cancer death rate due to fluoridation needs to be considered and understood.
  25. It is my considered scientific opinion, and I speak in the name of my colleagues who joined in this research, that the fluoridation of water supplies gives a significant immunosuppression of the whole population subject to it, and is one of the important precursors of the civilization illnesses that are rampant in modern industrialized society.
  26. There are no artificially fluoridated water supplies today in the Netherlands.
  27. It is my best scientific judgement, made with a high degree of scientific certainty, that fluoridated drinking water is very dangerous to the health of those who drink it.
  28. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**SAFE WATER ASSOCIATION, INC.,**

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**Plaintiff,**

**vs.**

**Case No. 92 CV 579**

**CITY OF FOND DU LAC,**

**Defendant.**

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**AFFIDAVIT OF H. J. ROBERTS, M.D.  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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State of Florida  
City of West Palm Beach

H. J. Roberts, West Palm Beach, Florida, being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

**BACKGROUND**

1. I am a graduate of Tufts University College of Liberal Arts, and Tufts University Medical School, 1947, M.D. (cum laude). I have engaged in clinical research since 1948.
2. I have been certified and recertified by the American Board of Internal Medicine. See Curriculum Vitae attached.
3. I have practiced as an internist and medical consultant for four decades, and continue to do so in an active manner.
4. I am the author of six texts and over 200 published articles and letters.
5. I am a member of many prestigious scientific and research organizations, and am listed in Who's Who In America, Who's Who In The World, Who's Who In Frontier Science And Technology, and Who's Who In Science and Engineering, as well as The Best Doctors In The U.S.
6. I have been interested in water fluoridation and fluoride therapy for over 30 years. I am both professionally and corporately neutral. My opinions derive from prolonged careful study of the medical and scientific literature, and are independent of those held by any anti-fluoridation group.

**SAFETY OF FLUORIDATION**

7. Fluoride is a toxic substance.
8. There is no system in the human body that requires fluoride as an essential element, to my knowledge.
9. The assertion that fluoride is a "natural" element recalls similar references once made about arsenic and lead. There is no "minimal safe dose" of such elemental poisons.
10. Fluoride has biocidal effects through its actions on a variety of enzymes and biological systems.

11. Multiple studies indicate an increased in vertebral, hip and other bone fractures due to fluoridation. (See Journal of the American Medical Association, Exhibits \_\_\_\_ & \_\_\_\_.
  12. Moreover, Dr. William Marcus, Senior Science Advisor for the EPA, issued an urgent and official EPA memorandum on July 29, 1991 indicating the need for "immediate action because certain segments of the U.S. population are currently sustaining fluoride-induced injuries such as hip fractures." Exhibit \_\_\_\_.
  13. Damage to the immune system by fluoride in amounts of only .1 ppm have been documented by Dr. John Yiamouyiannis, Exhibit \_\_\_\_.
  14. Fluoride in the brain increased from .53 ppm in 1939 to 1.5 ppm in 1960-65. Exhibit \_\_\_\_.
  15. Many children and adults living in non-fluoridated communities currently ingest 4-5 times the recommended "optimal" level of 1 mg daily. Exhibit \_\_\_\_.
  16. Adverse brain effects of long-term fluoride exposure include headache, ringing in the ears, depression, confusion, drowsiness, visual disturbances, severe fatigue and memory loss.
  17. India regards fluorosis as a public health problem of sufficient significance to be vigorously promoting defluoridation, including the prohibition of fluoride toothpaste for children below the age of seven. The Lancet, May 18th, 1991, Exhibit \_\_\_\_.
  18. Most physicians fail to appreciate both the extent of chronic excessive fluoride intake and the profound clinical manifestations of fluorosis. Fluoride related health problems are rarely considered and diagnosed.
  19. The anti-carries effect of fluoride has been legitimately challenged. Exhibit \_\_\_\_.
  20. It is my best scientific judgement at present that fluoridated drinking water is potentially dangerous to the health of those who drink it.
  21. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**SAFE WATER ASSOCIATION, INC.,**

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**AFFIDAVIT OF JAN F. SALLSTROM, Ph.D.  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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Nation of Sweden  
City of Uppsala

Jan F. Sallstrom, Ph.D., being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

**BACKGROUND**

1. I am a research associate in Pathology at the University Hospital of Uppsala, Sweden. I have held that position since 1976. Prior to that time I was pro tempore 1974-75 assistant professor of Immunology of the Faculty of Natural Sciences, University of Uppsala.
2. I received my B.Sc. and M.Sc. in chemistry and biology from the University of Stockholm and my Ph.D. in zoophysiology from the University of Uppsala.
3. I have written the following published articles on fluoridation, all except one (iv), in the monthly journal Miljö och Framtid (MOF, roughly translated "Environment and Future", a journal for scientific information and debate). All the articles are in Swedish. Free translations of the titles are noted first, the original within brackets:

Accounts of our own data:

- i. Fluorotic teeth in Uppsala (Fluorskadade tänder i Uppsala). Oct. 1978, pp 34-37.
- ii. Professor of pedodontics verifies enamel damages of the Uppsala water (Professor i barntandvård styrker tandskador av uppsalavatten). Feb. 1979, pp 10-11.
- iii. Experts from the National Board of Health and Welfare have investigated mottled brown teeth in 1.2 mg fluoride/L area. Now we are expecting confession of the damages and a scrupulous study. (Socialstyrelsens experter har sett bruna fluorskador vid 1.2 mg fluor/liter vatten. Nu väntar vi bara på erkännande av skadorna och på en omfattande utredning). Feb. 1980, pp 15-17. Reviews:
- iv. Gillberg, B.O. Sallstrom, A. & Sallstrom J. The Centre for Ecology and the National Association of the Environmental Groups (MIGRI) informs about fluoride (Miljöcentrum and Miljövårdsgruppernas

- v. Riksförbundet informerar om fluor). Miljöförlaget, Uppsala 1979.
- vi. WHO-report recommends decreased fluoride concentration in drinking water of Uppsala. May 1978, P.28 (According to an investigation by two odontologists, heading the public dental care in the cities of Uppsala and Gothenburg respectively, 96% of children born and grown up in Uppsala with 1.2 ppm have fluorosis of Dean's grade 0.5-3, 60% of grade 1-3; Ribelius, U., Tandlakartidningen 66: 358, 1974.
- vii. American court: Public water fluoridation is a danger to health (Amerikansk domstol: vattenfluoridering en hälsofar). Dec. 1978, pp 12-13.
- viii. Fluoride - a poison with many actions (Fluor ett gift med många verkningar). May 1979, pp 12-15.
- ix. Frequent use of fluoridated tooth care agents is as dangerous as tap water fluoridation (Flitigt bruk av fluorhaltiga tandvårdsmedel lika farligt som vattenfluoridering) Oct. 1979, pp 16-19.
- x. Cancer researcher Dean Burk warns about fluoridation, Oct 1979, pp 16-19.
- xi. A thorough review of the fluoridation question (En noggrann genomgång av fluorproblematiken). Nov. 1979, pp 4-5. (A presentation of Dr. Woldbott's book).
- xii. Danish investigation: Fluoride tablets give enamel lesions (Dansk undersökning: Fluortabletter ger emaljskador). July 1980, pp 12-13.
- xiii. Water fluoridation is rejected in a new book (Vattenfluoridering avlivs i nyutkommen bok). July 1980, pp 14-15. (Presenting Dr. Sutton's book).
- xiv. Water Fluoridation in Sweden would give 80,000 people chronic illness. Fluoride poisoning beats the whole body ("Vattenfluoridering i Sverige skulle göra 80,000 människor kroniskt sjuka, Smygande fluorförgiftning drabbar hela kroppen). Jan. 1981, pp 20-22. (Discussing the work of Dr. Waldbott).
- xv. Severe criticism of the public analysis of the economy of fluoridation. Even many dentists skeptical to the proposed profitability. (Hard kritik mot fluor-ekonomi-utredningen. Även många tandläkare tveksamma till Ernst Johnssons utredning av vattenfluorideringens lönsamhet). Jan. 1981, P.23.
- xvi. Fluoride not necessary during enamel formation - conclusions of new Danish Scientific study (Fluor behövs inte under tandbildningen-slutsats av ny dansk undersökning). March 1981, p25.
- xvii. Official report (1981:32) from the Ministry of Health and Welfare; No to fluoride in water and all kinds of food (Fluorstriden rapport 1981:32: Nej till fluor i alla former av livsmedel). June 1981, pp 10-13.
- xviii. The children should get less fluoride (barnen bör få i sig mindre fluor). April 1982, pp 21-23.
- xix. Remarks to the Ministry of Health and Welfare about the investigation report "fluoride as caries prophylaxis" SOU 1981:32 (fluor i kariesforebyggande syfte SOU 1981:32. Delyttrande 1982-05-29 till Socialdepartementet). June 1982, p10. Continued Aug. 1982, pp 23-29, and Nov. 1982, pp 28-33. Debate: Much about fluoride but little debate in the odontologic congress symposium "fluoride in focus anew" (Mycket fluor men föga debatt på tandläkarstammans symposium "Fluor på nytt i centrum"). Dec. 1977, pp 8-11.

- xx. The responsible authorities make nothing of the fluoride injury in Uppsala (De ansvariga bagatelliserar fluorskadorna i Uppsala). March 1978, pp 4-6.
  - xxi. Are the dentists being misinformed about the fluoride? (Missinformeras tandlakarna om fluoren?) Jan 1979, pp 16-19.
  - xxii. National Board of Health and Welfare fluoride investigation in Uppsala scrutinized by MIGRI and Centre for Ecology: Lack knowledge or deliberate deception? (Socialstyrelsens fluorundersokning i Uppsala granskade av MIGRI och Miljocentrum: Okunnighet eller medvetet bedrageri?) April 1979, pp 6-9.
  - xxiii. Any compromise in the water fluoridation question is unacceptable (Varje kompromiss i vattenfluorideringsfragan ar oacceptabel). Dec. 1979, pp 8-9.
  - xxiv. The odontologic experts neglect the/fluoride/damages in Uppsala-different eyes (Tandlakarexpertisen vagrar se skadorna i Uppsala-olika ogon) Jan. 1980, pp 15-17.
  - xxv. Public water fluoridation would give but an insignificant reduction of tooth decay (Allman vattenfluoridering ger endat en obetydlig kariesminskning). May 1980, pp 10-13.
  - xxvi. Deceitful public report neglects the health hazards of fluoride (Bedraglig statlig rapport negligerar fluorens halsorisker). July 1980, pp 16-19.
  - xxvii. Do not allow yourself to be duped by the dentist's incorrect argumentation for fluoride (Lat dig inte duperas av tandlakarnas felaktiga argument for fluor). Sept. 1980, pp 16-23.
  - xxviii. Look but not listen. The representative from MIGRI was locked out from the discussion of the investigation of fluoride damages in Uppsala (Se men inte hora, MIGRIs represenat utestangd fran diskussionen vid fluorskadeundersokning i Uppsala) Oct. 1980, pp 15-17.
4. I have given advice to the Fluoride Council Committee of the Ministry of Health and Welfare in a hearing concerning water fluoridation.
  5. My field of study, interest and expertise -- at present cell biology and molecular pathology -- has led me to consider thoroughly, and in an impartial scientific manner, research into the safety and effectiveness of artificially fluoridated drinking water ("fluoridation").
  6. My experience has led me to review and consider a large body of evidence, as demonstrated by my reference list in paragraph 3 above, including the following important and persuasive studies:
    - a. Works of the Danish odontologic scientist, Anders Thylstrup, Ph.D., prof. of Cariology at the University of Copenhagen and his co-workers: showing fluorosis to be malformations of enamel, and pointing out that fluoride is not necessary for the developing tooth.
      1. Thylstrup, A. Fluorids effekt pa den humane emaljedannelse med saerlig henblik pa det primaere tandsaet. Thesis, Aarhus 1979. Odontologisk boghandels Forlag, Kobenhavn 1979. (The effect of fluoride on the human enamel formation, especially in primary teeth. Original in Danish with English Summary).
      2. Thylstrup, A et al. caries Res. 14:196, 1980. (Conclusion: Fluoride is not necessary during the formation of the tooth to make it more caries resistant).
    - b. Fejerskov, O(Ed) Fluorid i tandplejen, klinik, farmakologi, virkningsmekanisme. Universitetsforlaget Munksgaard, Kobenhavn,



1980. ("Fluoride in dental care, clinics, pharmacology, mechanism of action." Original in Danish.)(Conclusion: as with the preceeding report, Individual prophylaxis is preferred to water fluoridation).
  - c. Report by Lars Erik Granath, Ph.D. professor of Pedodontics at the University of Lund,(Malmo) Sweden, in which he points out that water fluoridation will give insignificant caries reduction: Granath, L.E. et al. Interaktion mellan faktorer i kariesprocessen(In Swedish. "Interaction between different factors in the caries process"). Socialmedicinsk Tidsskrift # 10, 1977. Other reports on the insignificant effect of fluoridation:
  - d. Tijnstra, T. et al. Effect of Socioeconomic factors. Comm. Dent. Oral Epidem. 6:227, 1978. (Exhibit\_\_\_\_\_).
  - e. Report by Peter Ollinen, head of the Public Dental Service of the County of Vasterbotten in Sweden, in which he concludes that unfluoridated Vasterbotten has lower caries incidence than 1.2 ppm fluoride area Uppsala (Remark to the Ministry of Health and Welfare about the investigation report "Fluoride as caries prophylaxis" SOU 1981:32. Cited in MOF Nov. 1982, pp 30-32,(in Swedish).
  - f. Discussions and reports of Swedish odontologic scientist, Gunnar Gustafsson, Ph.D., Prof. of Oral Pathology, University of Umea, about the physiologic effects of fluoride: Gustafsson, G. Remark to the Ministry of Health and Welfare about the investigation report "Fluoride as caries prophylaxis" SOU 1981:32. The works about the influence of fluoride on CAMP-levels of the body, among others:
  - g. Allmann, D. W. et al. Effect of fluoridated water on 3'5' cyclic CAMP levels in various rat tissues. J. Dent Res. 75:881,1978. (Exhibit\_\_\_\_\_).
  - h. Kleiner, H.S.&Allmann,D. W. The effects of fluoridated water on rat urine and tissue CAMP levels. Archs Oral Biol. 27:107,1982.
  - i. Kebabian, J.W. & Nathanson, J.A. Cyclic nucleotides II. Physiology and pharmacology. New York, Springer Verlag, 1982. Further health aspect: report by the professor of Embryology, University of Lund:
  - j. Kallen, B. Remarks to the Ministry of Health and Welfare about the investigation report: "Fluoride as caries prophylaxis" SOU 1981:32. cited in MOF Nov. 1982, p29,(in Swedish, about the higher incidence of children malformations of heart and feet in the Uppsala area with 1.2 ppm fluoride than in low fluoride areas and the difficulties to prove that fluoride is either teratogenic or non-teratogenic.)
7. I have based my conclusions about the adverse effects of fluoridation and the unnecessary of it upon research and evidence which is scientifically sound and of the type typically relied upon by experts in my field.
  8. I have based my doubts about the claimed caries reduction caused by fluoride also on the non-scientific attitude and methods demonstrated by the odontologic experts representing the National Board for Health and Welfare, including a) their fear for telling the truth about frequency and nature of fluorosis; and b) the fallacy in their investigation of caries and fluorosis in Uppsala, revealed by me and my co-workers, (we found that the worst cases of those controlled were excluded from the study!)
  9. My conclusions regarding fluoridation at a concentration of between .5 and 1.5 ppm, are as follows.
    - . Non-scientific approach to prevent caries.
    - A. Unnecessary measure because of insignificant effect.

- B. Fluoridation has been shown to cause serious physical harm to large numbers of the consuming public. Continued exposure, even at the low levels noted above, can and does have serious and harmful effect upon consumers, including the following health problems:
1. influence on enzyme systems;
  2. disturbing cell signalling and regulation;
  3. dental fluorosis - a visual result of the above mentioned effects

### **RATIONAL FOR ENDING FLUORIDATION IMMEDIATELY**

10. All scientists including the odontologic experts agree that fluoride causes mottled teeth or fluorosis. It is also scientifically proven that fluorosis is a hypomineralization of the enamel, meaning that the enamel is underdeveloped! On these two facts there is now a consensus.
11. However the dentists have denied the occurrence of significant fluorosis at 0.5-1.2 ppm in temperated climates, but there is no scientific doubt that it is in fact occuring in a high frequency in many countries. Even the stubborn Swedish authority has admitted that this is the case, see 1) Sallstrom, A. Ministry of Health acknowledges fluorosis at 1.2 ppm fluoride in drinking water (Socialstyrelsen erkanner fluoros vid 1,2 mg fluor/liter dricksvatten). MOF May 1981, p15-17); 2) Ribelius, paragraph 3e above.
12. Furthermore the dentists tend to neglect fluorosis, even its non-esthetic nature. The reason for this is that they so far do not understand the seriousness of this injury. It is in reality an alarm clock, signalling that important metabolic systems of the developing body have been disturbed.
13. Fluoride is a documented toxic substance which influences on enzyme activities. The odontologic experts agree on this point too, which is evident from their argumentation that fluoride ions released from the enamel inhibits bacterial activity (one of their theories about the action of fluoride). Among other enzymes being affected is adenylyl cyclase, which catalyses the production of 3'5' cyclic adenosine monophosphate (CAMP). The fluoride ion also strongly interacts with calcium ions.
14. Differences in calcium ion concentrations between the outside and the inside of the cell membrane, and of other membrane limited compartments of the cell, and calcium ion fluxes over these membranes is a key mechanism in cell signalling and external and internal regulation.
15. CAMP is another key substance regulating the biochemical processes of the cell. These two messenger substances have been shown to be involved in cell growth and differentiation, physiological processes of the cardiovascular and nervous systems, in immune mechanisms, and general metabolism.
16. After the report of Allman et al. that fluoride in concentrations achieved with water fluoridation influenced the important second messenger substance CAMP in the tissues, no one can any longer claim that water fluoridation is harmless. (Exhibit\_\_\_\_). This finding by Allmann and others gives rational basis for the understanding of all the varied adverse health effects of fluoride described in the scientific literature. Many disease states may have their root cause in the pathways from plasma membrane to response.
17. Furthermore, the fundamental dogma of fluoridation, the proposal that fluoride has to be build into into the enamel during its formation in the developing tooth has been reevaluated and found false by Danish scientists referred to above. Professor Thylstrup goes so far that he doubts that fluoride has any other possible effect on caries than being a bacteriotoxin. It neither strengthens the enamel nor is it able to repair initial caries.

18. Thus fluoride, from previously having been considered "an essential nutrient" (never proven) has now become "an antibiotic." Who wants to be responsible for putting toxic antibiotics into the drinking water for the purpose of treating tooth decay?
  19. It is my best scientific judgement that fluoridation is dangerous and unnecessary and should be looked upon as an enormous experiment with humans. From a scientific point of view it is totally unethical.
  20. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**Plaintiff,****vs.****Case No. 92 CV 579****CITY OF FOND DU LAC,****Defendant.**

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**AFFIDAVIT OF ALBERT SCHATZ, Ph.D.  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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State of Pennsylvania  
City of Philadelphia

Albert Schatz, Ph.D., being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

**BACKGROUND**

1. I received my B.Sc. in 1942 in Soil Chemistry, and my Ph.D. in 1946 in Soil Microbiology, each from Rutgers University.
2. I have held numerous academic positions. Since 1980, I have been a Senior Professor at Temple University.
3. At the age of 23, I discovered the antibiotic Streptomycin. This compound was the first effective drug for the treatment of human tuberculosis.
4. I have been awarded honorary degrees and titles by the University of Chile, the Autonomous University of Santo Domingo, the Federal University of Espirito Santo in Brazil, the National University of San Antonio Abad del Cuzco in Peru, and the University of Bogota in Colombia.
5. I have been named an honorary member of the Scientific Society of Chile, the Chilean Society of Pediatrics, The Academy of Oral Dynamics (USA), the Stomatological Society of Greece, and many others.
6. I am also a Fellow of the Royal Society of Health in Great Britain.
7. I have published three books, and more than 500 articles in scientific and professional journals, and in popular magazines and newspapers.
8. On the subject of fluoridation, I have published numerous articles, including:
  - a. The Failure of Fluoridation in Chile, Pakistan Dental Review, 1967; 15:83.
  - b. Failure of Fluoridation in the United Kingdom. Pakistan Dental Review, 1972; 22:3.
  - c. The failure of fluoridation in England. Manchester Union Leader, Jan 27, 1973.
  - d. Censorship suppresses information unfavorable to fluoridation. Divulgacion Cultural Odontologica, 1975; 110:32.
  - e. Increased death rates in Chile associated with artificial fluoridation of drinking water. Journal of Arts, Sciences and Humanities. 1976;

2:1.

9. From 1962 to 1965 I lived in Chile. During that time I served as a Professor at the University of Chile, and worked in the Faculty of Medicine, the Faculty of Dentistry, the Faculty of Agriculture, and the Faculty of Philosophy and Education. I was also associated with numerous projects in the Ministry of Health, Ministry of Agriculture and the Ministry of Education.

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### **EXPERIENCE CONCERNING THE DANGERS OF FLUORIDATION**

10. Chile began to experiment with artificial fluoridation in 1953. By the 1960s, it became clear to me that fluoridation was causing serious harm, and I undertook a study which showed increased death rates in Chile associated with artificial fluoridation. My dramatic findings were later published. (Exhibit\_\_\_\_\_).
11. My first finding is perhaps the most disturbing. Those authorized to study and review the safety and effectiveness of fluoridation consistently distorted the data to achieve the desired results.
12. When the data for the three "test" cities in Chile were examined, Curico, F 1 ppm, San Fernando F 0.0 ppm, and La Serena 0.67 ppm, the only possible conclusion was that fluoridation was causing significant numbers of deaths.
13. Consider, for example, the deaths resulting from congenital malformations as a percent of the total number of deaths. Curico has 244% more such deaths than San Fernando, and 94% more than La Serena. (Exhibit\_\_\_\_\_, table 1).
14. Infant mortality rates in Curico were 69% greater than in San Fernando and La Serena. (Id, table 2).
15. For a fuller understanding of some of the harmful effects caused by fluoridation, read exhibit\_\_\_\_\_. Chile abandoned artificial fluoridation shortly after I sent copies of my report to all dental and medical officers in the Pan American Health Organization.
16. In Chile, with widespread malnutrition and high infant mortality, it was not necessary to observe a generation of people throughout their entire life-span in order to determine whether artificial fluoridation is or is not harmful. One could see the lethal effect of fluoridation within the first year of life in terms of increased infant mortality due to acute toxicity of fluoride. Some other adverse effects, like congenital malformations, may or may not cause death.
17. In the US, the harmful effects of artificial fluoridation are not so clearly revealed by large-scale, comparative studies of the total populations of fluoridated and control cities, because Americans as a whole are in a considerably better state of nutrition than Chileans.
18. Nonetheless, artificial fluoridation of drinking water may well dwarf the thalidomide tragedy, which was dramatic because it produced crippled children who are living testimonials to what that drug has done. Many victims of artificial fluoridation, on the other hand, die quietly during the first year of their lives, or at a later age under conditions where their deaths are attributed to some other cause.

### **EFFECTIVENESS OF FLUORIDATION**

19. In 1969, the British Committee on Research into Fluoridation reported the fluoridation of water supplies is a highly effective way of reducing caries. My published analysis of the data, with Dr. Joseph Martin, shows that fluoridation does not protect against tooth decay. (Exhibit\_\_\_\_\_).

20. The data clearly showed that fluoridation only delays the appearance of caries. For example, 10-year-old fluoridated and 8.8-year-old control children had about the same DMFT. A comparison of other corresponding age groups shows a similar delay of approximately 1.2 years in the appearance of caries. (Exhibit \_\_\_\_, figure 2).
21. Fluoridation merely postpones the appearance of caries. Fluoridated children develop the same amount of tooth decay as their non-fluoridated counterparts over their lifetime. The only difference is that caries start developing approximately 1.2 years later.
22. There is no economic benefit for such actions. Since fluoride does not reduce caries, fluoridated and control children will develop the same amount of tooth decay. Both groups will therefore require the same amount of dental treatment. People in fluoridated areas therefore pay for the same amount of dental treatment plus the added cost of fluoridation.

### **REFUSAL TO CONSIDER ADVERSE EVIDENCE**

23. On the strength of the data I had analyzed in Chile, I wrote L.C. Hendershot, editor of the Journal of the American Dental Association. I asked him if he would be interested in seeing my report of increased death rates, and if he would consider it for publication in JAMA.
24. When he did not reply to that letter of inquiry, I sent him three copies of the report in January, February, and March of 1965. Dr. Hendershot refused to accept all three communications, which were therefore returned to me, unopened. Copies of the certified envelopes, marked refused, are figure 3, exhibit \_\_\_\_.
25. Such a response is typical of the proponents of fluoridation. The professional sanctions for opposing fluoridation can be severe, and it is best not to even acknowledge evidence of harm or ineffectiveness.

### **CONCLUSION**

26. Artificial fluoridation has not been as widely accepted as its proponents imply. Many cities in the US have discontinued fluoridation after starting it. Virtually all of Europe has considered and abandoned fluoridation.
  27. Because artificial fluoridation causes deaths among individuals who are for one reason or another more sensitive to fluoride toxicity than the total population taken as a whole, the controversy over whether fluoridation does or does not reduce caries is purely academic. It is criminal to implement a so-called public health measure which kills certain people even if it does reduce tooth decay in some of the survivors. As noted, the evidence is that it merely delays decay.
  28. It is my best judgment, reached with a high degree of scientific certainty, that fluoridation is invalid in theory and ineffective in practice as a preventive of dental caries. It is dangerous to the health of consumers.
  29. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**Plaintiff,****vs.****Case No. 92 CV 579****CITY OF FOND DU LAC,****Defendant.**

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**AFFIDAVIT OF A.K. SUSHEELA, Ph.D.  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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Nation of India  
City of New Dehli

A. K. Susheela, Ph.D., being first duly sworn on oath, under penalty of perjury, and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

1. I, Dr. A. K. Susheela, have spent more than 20 years doing scientific research in the field of Fluoride Toxicity and Fluorosis.
2. I am a full Professor of Anatomy (Histochemistry) and Chief of the Fluoride and Fluorosis Research Laboratories, at the All India Institute of Medical Sciences, New Delhi.
3. I have held Faculty positions at the same Institute since 1969.
4. I am a Ph.D from India, with Post-doctoral training under LORD WALTON (Neurologist) of U.K. and Dr. Ade Milhorut of the Muscle Institute, New York, USA, (which no longer exists).
5. I was a Visiting Professor at the Allan Hancock Fdn. at the University of Southern California during 1974-76.
6. I am a Fellow of the Indian Academy of Sciences and the National Academy of Medical Sciences.
7. I have won the prestigious Ran Baxy Research Foundation Award (Cash Prize) for outstanding research in medical sciences.
8. I have been involved in teaching medical students of all levels and carrying out research and guiding research in the field of muscle diseases and Fluorosis for more than 20 years.
9. My field of interest for the last 20 years has been Fluoride and Health Hazards.
10. Numerous funding organizations have been calling upon me during that time for evaluating projects for funding in the field of Biomedical Research.
11. I have been a member of several National Committees since early 1970s, where issues related to Fluoride are debated and discussed.
12. I have convened an International Conference on Fluoride and Fluorosis research in India in 1983. I edited a book on Fluoride Toxicity during 1985.
13. I have been invited to speak on my experience in the field of Fluoride Research at various scientific meetings held in: (1) Japan; (2) Denmark; (3) Switzerland; (4) Kenya; (5) U.S.A. (several times); and (6) Hungary.

14. I have guided 6 Ph.D theses in the subject of Fluoride and Health Hazards. A 7th Project is ongoing.
15. I have more than 80 scientific publications in leading Western and Indian Journals.

#### **SAFETY OF FLUORIDATION**

16. From my extensive experience, I state without hesitation and with a high degree of scientific certainty, the following evaluation of fluoridation.
17. Fluoride destroys muscle structure, muscle function and depletes muscle energy.
18. Fluoride destroys the bone.
19. Fluoride destroys the teeth.
20. Fluoride destroys the RBCs.
21. Fluoride destroys the Blood Vessels.
22. Fluoride destroys the lining of the stomach and intestine causing GI problems.
23. Evidence that is forthcoming also strongly suggests that in some individuals it causes infertility (not in all, depending on their hormonal status).
24. Substantial scientific evidences has emerged in recent years from studies conducted on Human Subjects and Hospital patients & those residing in areas/ regions/villages where fluoride content ranges in drinking water from 0.5 p.m to 38.5 ppm.
25. Twenty years of follow-up studies have now been concluded and the important findings include the following.
26. Gastro-intestinal complaints are the earliest manifestations of Fluoride toxicity and Fluorosis. The most common complaints include (1) Headache; (2) Nausea (Loss of appetite); (3) Pain in the stomach; (4) Gas formation in the stomach (bloated feeling); (5) Constipation; (6) Intermittent fermentation diarrhea.
27. As a result of the above, GI complaints in endemic areas are considered as early warning signs of the fluoride toxicity and are used as a diagnostic parameter under field based conditions. See Fluoride Ingestion and its Correlation with Gastrointestinal Discomfort. (Exhibit\_\_\_\_\_).
28. Studies on human teeth have shown that fluoride alters a chemical substance in the matrix of the tooth. The mineralization process is abnormal, leading to changes in mineral content, and cavities or pitting are known to occur.
29. In other words, Fluoride induces cavity formation, as well as discoloration of teeth. It is also evident that use of fluoride can lead to loss of teeth at an early age and one becomes edentulous. See The Status of Sulphated Isomers of Glycosaminoglycans in Fluorosed Human Teeth. (Exhibit\_\_\_\_\_).
30. Fluoride in circulation has an affinity to get deposited in tissues rich in calcium although some amount is excreted. In children, the fluoride ingested has adverse effects on kidney function. See Fluoride: Too Much Can Cripple You. (Exhibit\_\_\_\_\_).
31. During the last 20 years, six Doctorate Degrees which were carried out under my supervision and guidance have been conferred on theses on Fluoride Toxicity & Fluorosis.
32. Thesis No.1 (Ph.D): "Muscular and Neural manifestations in Fluoride Toxicity in Rabbit and Man". Submitted to All India Institute of Medical Sciences, New Delhi and conferred the Ph.D. degree to RAJ D. KAUL in 1976.
33. Significant Findings emerged from studies on human patients of skeletal fluorosis. Degenerative changes were well defined at the ultrastructural level in the fluoresced muscle obtained from patients of Skeletal Fluorosis.



34. Thesis No.2 (Ph.D): "Certain structural and functional aspects of bone with reference to Fluoride Poisoning". Submitted to the All India Institute of Medical Sciences, New Delhi and conferred the degree of Doctor of Philosophy to MR. MOHAN JHA during the year 1983.
35. Significant findings emerged from the thesis and have added a new dimension to our understanding of fluoride poisoning and fluorosis. The thesis has reported a sensitive blood based test which has been developed based on the chemical defects occurring in the tissues as a result of fluoride poisoning.
36. Thesis No.3 "Erythrocyte membrane abnormalities during Fluoride Toxicity and Fluorosis". Submitted to the All India Institute of Medical Sciences and conferred the Doctorate degree to MR. SURESH K. JAIN in 1987.
37. Significant findings emerged from the thesis, showing that fluoride inhibits the activity of enzymes of Glucose-6-Po dehydrogenase and pyruvate kinase in erythrocytes leading to impairment of carbohydrate metabolism.
38. Fluoride adversely affects membrane bound enzyme (ATP - ase) and affects the transfer of calcium and magnesium ions in erythrocytes.
39. Fluoride inhibits antibody formation in rabbits and may occur in human subjects as well.
40. Fluoride inhibits protein and DNA synthesis in cultured lymphocytes.
41. Fluoride reduces the number of lymphocytes in circulation by inhibiting their proliferation.
42. Thesis No. 4 (Ph.D): "Fluoride Toxicity Studies on Glycosaminoglycans and its Sulphated Isomers in the Calcified Tissues" Submitted to the All India Institute of Medical Sciences and conferred the degree of Ph.D. to MR. KAMAL SHARMA in the year 1988.
43. The findings emerging from the studies on both tooth & bone have made significant contributions to negate the belief that fluoride is good for teeth.
44. Instead, Fluoride does more damage to teeth than any good. Prolonged use of fluoride leads to a decrease in the organic matrix of rabbit tooth but Dermatan Sulphate content is increased.
45. High Dermatan Sulphate content appears to be the detrimental factor in causing dental fluorosis.
46. Thesis No. 5 (Ph.D): "Effects of excess fluoride ingestion on calcification of bone with reference to Glucocorticoids". Submitted to the All India Institute of Medical Sciences, New Delhi and conferred the degree of Ph.D to MR. TAPOSH K. DAS during 1991.
47. The above treatise has contributed significant, novel information in the understanding of the pathogenesis of skeletal abnormalities occurring in chronic fluoride toxicity and fluorosis.
48. Reduced plasma cortisol levels in patients afflicted with fluorosis is reported for the first time. Fluoride treated animals also produced less cortisol and revealed adrenocortical hypofunction.
49. The study also revealed for the first time, pituitary gland hypofunction which is possibly the reason for adrenal insufficiency in the production of steroid hormone.
50. Fluoride toxicity was shown to impair cortisol production, thereby altering the bone matrix constitution both organic and inorganic, leading to defective and abnormal mineralization process.
51. Thesis No. 6 (Ph.D): "Effect of fluoride on soft tissues - Structural and Biochemical studies". Submitted to the All India Institute of Medical Sciences, New Delhi and conferred the degree of Ph.D to MRS. POONAM KHARB during 1991.
52. This thesis focuses on the biochemical mechanism of ectopic or soft tissue calcification.

53. Although the treatise was completely devoted to animal studies, it offers the message to both the developing and developed world, particularly in the prevention of cardiac problems. Aortic calcification, which is very frequently occurring, perhaps is a result of excess ingestion of fluoride through food, water, drugs, cosmetics like tooth paste/mouth rinses and fluoridated water.
  54. The disappearance of Dermatan Sulphate from soft tissue (which normally has high concentration of Dermatan Sulphate) is the beginning of nucleation for calcification of the soft tissue. This process is activated by fluoride.
  55. The impact of the above contributions in the Indian National scene has been significant.
  56. India launched a Technology Mission on "Safe Drinking Water" in 1986 (now re-designated after the late Prime Minister Sh. Rajiv Gandhi, as Rajiv Gandhi National Drinking Water Mission) in which every drinking water source in the rural sector is checked for water quality, specially for Fluoride.
  57. People are keen to defluoridate the water due to gastrointestinal problems and are adopting indigenous technology for obtaining potable (defluoridated) water.
  58. Results include reduced abortions (as Fluoride is known to induce calcification of blood vessels of the fetus).
  59. Reduced still births (as Fluoride is known to induce calcification of blood vessels of the fetus).
  60. I am absolutely certain that large numbers of persons all around the world are suffering from Fluoride Toxicity, to one degree or other.
  61. The various and frequent health complaints, caused by fluoride ingestion, are often (or invariably) over-looked due to unawareness at all levels, which include the health professionals or, perhaps, due to the prevailing ill conceived, unscientific notion that "fluoride is good for teeth."
  62. Fluoride is potentially a dangerous chemical and a poisonous substance, which does no good to the human body.
  63. With a high degree of scientific accuracy and certainty, I conclude that artificial fluoridation of drinking water is an ineffective means of improving dental health, and is in fact quite dangerous to those forced to consume it.
  64. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**AFFIDAVIT OF PHILIP R.N. SUTTON, B.D.Sc.  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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Country of Australia  
State of Victoria

Philip R.N. Sutton, B.D.Sc. being first duly sworn on oath, under penalty of perjury, and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

1. Before my retirement, I was the Senior Lecturer in Dental Science in the Dental School of the University of Melbourne, for eleven years.
2. I was also a Senior Research Fellow of the University of Melbourne for nine years. When I retired, I was appointed an Academic Associate of that University.
3. Prior to joining the University, I conducted a private dental practice for twenty-five years and during the war spent five years in the Australian Army Dental Corps.
4. Therefore, I am not an 'ivory tower' scientist, but one with a very solid practical knowledge based on my thirty years experience doing clinical dental work.
5. Qualifications. A knowledge of both dentistry and academic statistics is essential if an investigator is to assess adequately the reports from fluoridation 'trials'.
6. Dental: I received my B.D.Sc.(Hons.) -- Bachelor of Dental Science -- from the University of Melbourne and later the D.D.Sc. (Doctor of Dental Science) from that University.
7. This latter degree is often, but should not, be confused with the American and Canadian D.D.S. (Doctor of Dental Surgery) degree, which is awarded on graduation in both those two countries.
8. The D.D.Sc. degree is the most senior dental degree in Australia. Under the current regulations, before entering for this degree a candidate must be a graduate of at least five years standing and must already possess either a Ph.D or a M.D.Sc. (Master of Dental Science) degree. After prolonged research, he must submit for examination a thesis which 'makes a substantial contribution to dental knowledge.'
9. Because of these very stringent requirements it is widely held to be the most senior dental degree obtainable anywhere in the world.
10. I am also a Fellow of the Royal Australasian College of Dental Surgeons,

- having been appointed a Foundation Fellow at its inauguration.
11. Statistical. I completed the course in Statistics for Research Workers conducted by the Department of Statistics, University of Melbourne. I then was admitted as a member of the Statistical Society and was later elected Chairman of the Victorian Branch of the Biometric Society (which is devoted to the statistical analysis of biological data, an essential skill if one is to comprehend the results published from fluoridation 'trials' ).
  12. Over the years I have written numerous papers and letters on a wide variety of subjects. Those which involve dental caries (decay) in general include:
    - a. Stress and Dental Caries, *Nature* 195: pp. 254-256, 1962.
    - b. The early onset of acute dental caries following mental stress. *New York State Dental Journal* 31: 450. 1965.
    - c. Stress and Dental Caries in *Advances in Oral Biology*, Vol. 2, P.H. Staple Ed. (Academic Press, New York, 1966) p 101-.
    - d. Acute dental caries, mental stress, immunity and the active passage of ions through the teeth. *Medical Hypotheses* 31: 17, 1990.
  13. Those which relate to fluoridation include:
    - a. Some statistical observations on fluoridation trials (With professor Sir Arthur Amies) *Medical Journal of Australia*, 1 February, 1959.
    - b. Does fluoride ingestion affect developing immune system cells? *Medical Hypotheses* 23: 335-336, 1987. (Exhibit\_\_\_\_)
    - c. Is the ingestion of fluoride an immunosuppressive practice? *Medical Hypotheses* 35: 1-3, 1991. Reprinted in *Fluoride* 25: 159-160, 1992. (Exhibit\_\_\_\_).
    - d. A fifty-year-old accepted but unconfirmed hypothesis. *Medical Hypotheses* 27: 153-156, 1988. (Exhibit\_\_\_\_).
    - e. Can water fluoridation increase orthodontic problems? *Medical Hypotheses* 26: 63-64, 1988. (Exhibit\_\_\_\_).
    - f. I did the statistical analysis for: Smith, G.E. A simple method for obtaining bone biopsy specimens for fluoride analysis and some preliminary results. *New Zealand Medical Journal* 98: 485, 1985.
    - g. Is fluorosis an etiological factor in overuse injuries (RSI)? *Medical Hypotheses* 21: 369-371, 1986.
    - h. Is fluoride ingestion a factor in the development of R.S.I.? *Computer Control Quarterly* Winter, 1986, pp. 50-53. (Exhibit\_\_\_\_).
    - i. The overdosing of bottle-fed infants with fluoride. *Breastfeeding Review* December, 1984.
    - j. The failure of fluoridation. *Fluoride* 23: 1-4, 1990. (Exhibit\_\_\_\_).
    - k. Is fluoride ingestion a cause of repetitive strain injury? *The Australian Secretary* June, 1985.
    - l. Fluoridation and the Constitution. *Environment and Planning Law Journal* 6: 58, 1989.
  14. In addition I have written three books on fluoridation:
    - a. *Fluoridation: Errors and Omissions in Experimental Trials*. (Melbourne University Press, 1959, second, enlarged, edition 1960).
    - b. *Fluoridation, 1979 Scientific Criticisms and Fluoride Dangers*. 1980. (A submission to the Victorian Government fluoridation inquiry).
    - c. *The Greatest Fraud: Fluoridation*. (The manuscript of this book has just been completed but it has not yet been published).
  15. My field of study, interest and expertise has led me, for a period of thirty-eight years, to consider thoroughly, and in an impartial manner, research into the safety and effectiveness of artificially fluoridated drinking-water.
  16. I have not considered in any detail the legal and ethical aspects. Both these

involve questions of opinion and I prefer to deal with facts, with statements and conclusions which can be checked and confirmed by anyone with the necessary training and with the desire to do so.

17. However, in passing, it may be mentioned that fluoridation can be illegal in some areas. After a marathon fluoridation inquiry in the High Court, Edinburgh (to which I was called from Australia to give evidence for several days) Lord Jauncey found that fluoridation was illegal in Scotland.

### **EFFECTIVENESS OF FLUORIDATION**

18. During thirty-eight years of studying reports on fluoridation, I have considered a large body of evidence, most of which was reports on fluoridation 'trials' which have been claimed to establish that fluoridation is very efficacious, in that it substantially decreases the number of decayed teeth in a treated community.
19. I have concentrated my personal investigations on the question of the efficacy of fluoridation, partly because my training in both dentistry and academic statistics enables me to understand and criticize fluoridation reports, but mainly because this is the key question in this discussion -- if fluoridation has not been shown to work, it should be abandoned, whether or not it is legal and ethical and irrespective of whether it is safe.

### **Purported Evidence of Efficacy**

20. Over the years, I have studied all the lists I have been able to find which name studies which purport to show that fluoridation is efficacious. The most comprehensive of these was that published by Murray and Rugg-Gunn in their book in 1982. This listed 128 studies, the four original ones and 124 which had commenced after 1950. An examination of that list showed that 101 of those 124 studies were either duplicates, having been listed more than once, or were obviously of such a poor standard that they could be disregarded as not being science. Despite determined attempts by the library staff to obtain them, five of the remaining reports could not be obtained for study. None of the remaining eighteen adhered to the standard scientific and statistical requirements of such a study.
21. Despite extensive research and effort, studying all available published reports from fluoridation "trials,"<sup>334</sup> not one study has been found which obeys the standard scientific and statistical requirements of a valid study and has demonstrated that fluoridation has reduced the number of decayed teeth in the medicated community.

### **Studies Which Show That Fluoridation Is Ineffective.**

22. As distinct from the many studies which have failed to show that fluoridation is efficacious, there are at least three which have demonstrated that it does not work.
23. A study conducted by the U.S. National Institute of Dental Research (N.I.D.R.). This is the only large-scale study held to assess the effects of prolonged ingestion of artificially fluoridated drinking-water (1 ppm). It involved 39,207 children up to the age of seventeen years in 84 geographical areas in the U.S.A. In 28 of these areas the children had drunk fluoridated water for the whole of their lives, in 27 areas they had been fluoridated for only a part of their lives, and in 29 areas they had drunk non-fluoridated water since birth -- up to seventeen years.

24. Unfortunately, approximately half of the data obtained in this expensive (\$3,670,000) survey was suppressed by the N.I.D.R. and 'left in a box somewhere', according to the statement of the statistician employed in the study (Hileman, 1989, Exhibit\_\_\_\_\_).
25. However, those data were eventually obtained by Dr. John Yiamouyiannis, after much fighting, by using the provisions of the U.S. Freedom of Information Act. He published a report of the result of his analysis of those suppressed data in a Guest Editorial article in American Laboratory in 1989.(Exhibit\_\_\_\_\_).
26. His detailed analysis showed that there was no difference in the number of decayed teeth in the subjects who had been fluoridated all their lives and those who had never drunk fluoridated water.
27. This result, based on such a very large sample and conducted under the auspices of the N.I.D.R., PROVIDES STRONG EVIDENCE THAT DRINKING ARTIFICIALLY FLUORIDATED WATER FROM BIRTH DOES NOT REDUCE THE NUMBER OF DECAYED TEETH WHICH DEVELOP IN THE MEDICATED COMMUNITY.
28. In 1981, R. Ziegelbecker (a statistician at the Institute for Environmental Research, Graz, Austria) studied all the reports he could obtain of studies made anywhere in the world, in 136 areas, in which the drinking-water contained fluorides naturally. This involved 48,000 12-14-year-old children. (Exhibit\_\_\_\_\_)
29. He 'graphed' these results and, although he found a very strong relation between the fluoride content of the water (0.15 to 5.8 ppm fluoride) and the prevalence of dental fluorosis -- mottled teeth, ( $R^2 = 0.849646$ , where 1.0 would indicate a perfect agreement), there was no similar association between the natural fluoride content of the waters and the prevalence of dental decay ( $R^2 = 0.0098281$ ).
30. It was originally thought (from small-scale investigations) that there was less dental decay in 'naturally fluoridated' areas, and the earliest fluoridation 'trials' were said to be set up to see whether artificial fluoridation would produce the same result.
31. However, instead of finding that fluoridated drinking-water reduces dental decay, it is now seen that having drinking-water which is EITHER NATURALLY OR ARTIFICIALLY FLUORIDATED DOES NOT REDUCE THE NUMBER OF DECAYED TEETH IN A COMMUNITY.
32. The third study may seem to be a strange choice to show that fluoridation is ineffective, for it was set up by the British Ministry of Health to 'demonstrate' that fluoridation is efficacious. The authors claimed that this eleven-year study had proved the safety of fluoridation -- although they did not investigate this aspect and provided no data to support that claim.
33. They also claimed many times in their report that this process had been 'beneficial'. Professor Albert Schatz stated in 1972: " If you read the official report uncritically and accept it on faith, you get the impression that fluoridation reduced caries. But if you carefully analyze the statistics [as I have done] you quickly realize that fluoridation did not reduce caries. The official report really proves just the very opposite to what it claims to prove. The official report is valuable because it so clearly reveals the failure of fluoridation in Great Britain." The alleged benefits are thus nothing more than a statistical illusion. (Exhibit\_\_\_\_\_).
34. Some of the evidence for the failure of fluoridation was mentioned in a Guest Editorial in Fluoride (Sutton, 1990). (Exhibit\_\_\_\_\_).
35. I have based my conclusions about fluoridation primarily upon my own research and also on evidence which I have studied and which appears after extensive examination to be scientifically sound.

36. My conclusions regarding fluoridation, achieved by using hydrofluosilicic acid to attain a fluoride concentration of between 0.5 and 1.5 ppm, are as follows:

- A. Hydrofluosilicic acid is a toxic waste product which has no known positive health effects on the human body.
- B. Fluoridation has no significant impact upon the number of decayed teeth a consumer experiences. The studies I have cited above show that there is no statistically significant difference between the number of decayed teeth found in fluoridated and unfluoridated areas.
- C. Fluoridation can, and does, have a serious and harmful effect upon consumers, including a number of health problems.

### SAFETY OF FLUORIDATION

37. Those problems I have personally studied include:

- . Dental fluorosis. This condition, formerly called 'mottled teeth', develops in approximately ten percent of children who drink fluoridated water during the period of tooth formation. It is a permanent disfigurement which can be alleviated only by expensive dental treatment. In its mildest form it is seen as 'ghastly white' (Black, 1916) spots or areas on the surface of the teeth (called 'pearly white' in the pro-fluoridation literature). More affected teeth also have areas of brown staining. This condition is often dismissed by pro-fluoridationists as merely cosmetic, but some people are very ashamed of their ugly appearance and this can lead to marked psychological problems. (In one case I encountered, the psychiatrists attributed the attempted suicide of a young child to shame resulting from this condition).
- a. Suppressed function of the immune system. This leads to a person being more susceptible to all diseases and to cancer. One may consider that it is the mechanism behind the increase in cancer death rates following fluoridation in the ten largest fluoridated cities in the U.S.A. (Exhibit\_\_\_\_\_).
- b. Skeletal fluorosis. The faulty formation of bone, associated with the development of crippling effects. One of these effects, seen in subjects who had high levels of fluoride in their bones, is called in Australia R.S.I. (repetition strain injury). This condition typically affects some typists, computer operators and musicians, and can partially or completely prevent them from pursuing those occupations. (Exhibit\_\_\_\_\_).

38. The evidence presented in articles I have read also suggest that the following adverse health effects from fluoridation have been firmly established:

- o Suppressed thyroid function,
- o Increased infant mortality rates,
- o The destruction of some enzymes,
- o Renal (kidney) failure,
- o Allergic reactions.
- o Damage to the genetic material of cells.

39. Approximately forty laboratory studies have now shown that exposing cells to fluoride can damage their genetic material. This fact could well be the most serious consequence of fluoridation as it may lead to the birth of deformed children in future generations.

40. My personal studies have led me to the same conclusion as the committee of senior scientists appointed to study fluoridation by the Minister for the

Environment, Quebec Government, Canada (Bundock, et al. 1979). The committee stated: "In the circumstances, the committee is of the opinion that an additional amount of fluorides [by fluoridation] would be not only useless but dangerous. In other words, we should be more concerned about possible intoxication than with deficiencies of fluorides." (emphasis in the original French edition).

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41. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.

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["Fluoridation 'Errors and Omissions in Experimental Trials'"](#) by Philip R. N. Sutton D.D.Sc. (Melb.), L.D.S. (Vic) Senior Research Fellow, Department of Oral Medicine and Surgery Dental School, University of Melbourne. First published 1959. Second edition, enlarged, 1960. Printed and bound in Australia by Melbourne University Press, Parkville, N.2, Victoria

[Extract from Philip R. N. Sutton's book](#) "Fluoridation the Greatest Fraud"



**SAFE WATER ASSOCIATION, INC.,**

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**Plaintiff,****vs.****Case No. 92 CV 579****CITY OF FOND DU LAC,****Defendant.**

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**AFFIDAVIT OF DR. DELOSS E. WINKLER  
IN SUPPORT OF MOTION FOR SUMMARY JUDGMENT**

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Dr. Deloss E. Winkler, being first duly sworn on oath and with personal knowledge of the information contained herein, respectfully states to the Court as follows:

1. I am a graduate of the University of Kansas. I have A.B., M.A. and Phd. degrees in organic chemistry.
2. I worked for thirty years for Shell Development Company in Emeryville, California, in the fields of organic and polymer chemistry, and six years at Beckman Instruments in Palo Alto, California, as chief polymer chemist. I have 38 United States patents and 12 publications in scientific journals.
3. For the last twenty years, I have considered with great interest, and in an impartial scientific manner, the safety of artificially fluoridated drinking water ("fluoridation").
4. In 1972, when I started work in Palo Alto, I suffered a series of illnesses which might be described as "flu-like", in which I experienced chronic fatigue, muscular weakness and muscular aches. The fatigue and muscle weakness was so overwhelming that I was unable to perform any normal task and was forced to stay in bed for a week each time, until I gained the strength to return to work.
5. This weakness occurred about once a month, and during my first eight months with Beckman Instruments I was absent from work 25% of the time. Doctors in Palo Alto and at Kaiser Permanente in Oakland were unable to help me.
6. When I learned that Palo Alto artificially fluoridated its water, it was suggested that I carry unfluoridated water from my home in Orinda to Palo Alto for drinking. No other change in my daily habits took place.
7. My symptoms quickly and completely disappeared, and my life returned to normal.
8. Twelve years ago I took part in a double blind study. I was given one-week supplies of distilled water, sometimes fluoridated to 1ppm fluoride using hydrofluosilicic acid, sometimes not. Neither the doctor nor I knew which water was fluoridated. My body accurately identified the water containing the fluoride by displaying adverse symptoms.
9. I have reviewed and considered scientific literature dealing with fluoride research, and have found that the adverse effects from fluoride identified in those studies accurately mirror my own negative physical symptoms.
10. The Physicians Desk Reference and the United States Pharmacopeia both

describe the adverse effects which I experienced as typical of fluoride poisoning. The later also notes that overdose is especially dangerous in children. Exhibits \_\_\_\_ & \_\_\_\_.

11. It is my best scientific judgment that the fluoridation of the Palo Alto drinking water caused my serious health problems.
  12. It is my best scientific judgment that fluoridation is dangerous to the health of those who drink it.
  13. I make this Affidavit in support of the Plaintiff's Motion for Summary Judgment.
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**Safe Water Association Inc., Fond du Lac, WI, June 30, 1993**

**PRESS RELEASE**

For Immediate Release  
Safe Water Association, Inc.  
Fond du Lac, WI 54935

**Judge Sends Message of Concern  
in Law Suit on Fluoridation of City Drinking Water.**

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Despite "serious questions on the wisdom of the City's course of action," Wisconsin Circuit Court Judge Peter Grimm today refused to order an end to the Fluoridation of the local drinking water.

In granting the City's motion for Summary Judgment, in a suit filed last August by the Safe Water Association, Judge Grimm ruled that he did not have the power to enjoin Fluoridation, despite the fact that the evidence proved that:

1. Significant scientific evidence links fluoride exposure to various adverse conditions in humans. The safety of Fluoridation continues to be a matter of scientific debate and research in the areas of cancer, hip fractures, chromosomal abnormalities and hypersensitivity. City exhibits show there are significant gaps in our knowledge of the effects of fluoride on the human body.
2. Fluoridation causes dental fluorosis, which the City admits is an adverse health effect. A few percent of the general population (for the City, many hundreds of children) will experience discoloring, pitting, and embrittling of their teeth due to Fluoridation.
3. The City adds more than 20 tons of Hydrofluosilicic Acid to the drinking water each year.
4. Hydrofluosilicic Acid is a toxic waste product most commonly obtained from the smokestacks of fertilizer factories.
5. Hydrofluosilicic Acid is contaminated with such heavy metals as lead, arsenic, cadmium and chromium. It can increase the lead levels of the water, which the City is actively attempting to reduce. The EPA says there is no safe level of lead exposure.
6. Hydrofluosilicic Acid has never been approved as effective or safe for human consumption by the FDA, and no physician may write a prescription for it.
7. The City does not monitor its Fluoridation program in any way to determine if it is effective. The City takes no steps to identify possible

adverse effects or reactions by members of the community. The City does not know the maximum safe level of fluoride consumption or attempt to ascertain how many members of the community are exceeding that level. No physician monitors the health of citizens being medicated with Hydrofluosilicic Acid.

8. Less than 0.1% of the roughly 500 tons of Hydrofluosilicic Acid that has been added to City water has reached its intended targets, with virtually all of the rest ending up in the environment, particularly Lake Winnebago.

9. Fluoride is readily available in tablets, which the City admits have been shown to achieve results comparable to that of water Fluoridation. Use of tablets would avoid massive pollution, avoid consumption by the 80+% of citizens too old for supposed fluoride benefits, and would ensure proper, pure dosages are received by children, under medical supervision.

Richard G. Matthew, president of the Safe Water Association, expressed disappointment over the Judge's decision, noting that it is never easy for an elected official to stand up to such a well-entrenched program, no matter how foolish and misguided it may be. He also expressed his appreciation for the concerned citizens and groups from across the country that provided a continuing stream of technical information and funds to keep the suit moving forward.

In ruling that citizens have no right to be free from unwanted and unconsented medication of themselves and their children, Matthew stated, the Judge clearly goes against values fundamental to the community and the nation.

Matthew noted that the Judge's decision makes clear his grave doubts as to the wisdom of Fluoridation, with his findings of fact showing clearly the Fluoridation is a risk to the public, unfortunately one he is not empowered to end.

Mr. Matthew also noted that his organization was fully prepared to appeal this decision, whatever the time or expense involved. The Association is determined to have its day in Court.

Information Provided by:

Scott C. Matthew

Attorney for the Safe Water Association, Inc.

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