The Chairman called the meeting to order at 1:35 p.m. in Room 200.

MEMBERS PRESENT:
Mr. Bennett
Mr. Chaney
Mr. Dini
Mr. DuBois
Mr. Jeffrey
Mr. Kovacs
Mr. Prengaman
Mr. Rusk (Late-excused)
Dr. Robinson

MEMBERS ABSENT:
Mr. Brady (Excused)
Mr. Bremner (Excused)

The first bill to be heard was A.B. 147.

A.B. 147: Prohibits manufacture, sale or use of detergents which contain phosphates.

The bill was sponsored by Assemblyman Joe Dini, and he explained the bill to the Committee. He indicated that he had introduced A.B. 147 in the hope of solving some environmental problems with the rivers and lakes in western Nevada. He said that pollution problems had caused the closing of Lake Lahontan for a period of time last summer, and that he felt A.B. 147, by reducing the presence of phosphates, would help solve some of the problems with the lake as well as reducing the potential for health problems for residents of Fallon.

The first witness speaking as a proponent of A.B. 147 was Peter A. Krenkel, director of the Water Resources Center for the Desert Research Institute, and acting director of the Bioresources Center. Dr. Krenkel, in order to lend credence to his testimony, listed his extensive experience and educational qualifications for the Committee. He indicated that the most pertinent fact was that he was an advisor to the International Joint Commission on Water Quality for the Great Lakes.

Dr. Krenkel stated that the bill proposed to ban phosphates from detergents. He added that within the past five years it had become evident that lakes showing the process of eutrophication have, as a causative, phosphorus. He said that the most obvious manifestation of the eutrophication process was the excessive growth of algae, which are stimulated by a nutrient such as phosphorus. He also said that single most important parameter that caused eutrophication in most lakes was thought to be soluble orthophosphates. Dr. Krenkel stated that lakes affected in Nevada include Lake Tahoe, Lake Mead, Lake Lahontan and other lesser lakes. He added that limiting the phosphorus would limit

the problem.

Dr. Krenkel indicated that there were several ways to control the phosphorus: it can be treated at the waste treatment plants; develop a management practice for runoff; or treat the lake to remove the phosphorus that accumulates. He said that simplest approach would be to remove the phosphorus before it gets into the system.

Dr. Krenkel explained what eutrophication was and that the detergent manufacturers had testified that the removal of phosphates from detergents would have little or no effect on algae. He added that the manufacturers had also stated that only fifteen percent of the population was affected by eutrophication. "These are obvious misstatements of fact," he said. He went on to say that three things had been recommended to control lake pollution: phase phosphorus out of detergents; control agricultural runoff; remove nutrients at the wastewater treatment plants.

Dr. Krenkel passed out some portions of published reports to emphasize his points. These are attached and marked "EXHIBIT A-1, A-2, A-3 and A-4" He referred the Committee to the chart located on page 2 of EXHIBIT A-1 and said, "Obviously, based on this parameter, the phosphorus loading on this lake is intolerable."

Dr. Krenkel then stated that wastewater treatment plants were not too dependable and referred to EXHIBIT A-2 as proof. He also indicated that the problem of substitutes for detergents containing phosphates was addressed in EXHIBIT A-3, which provided viable alternatives. Referring to EXHIBIT A-4, Dr. Krenkel stated that the Metropolitan Sanitary District of Greater Chicago has been able to obtain a seventy percent removal of phosphorus just from the phosphorus ban. He added that when the phosphorus ban became effective in Chicago, there was a much smaller amount of solid waste or sludge to be disposed of by the waste treatment plants.

Dr. Krenkel concluded his remarks by saying that he was in support of Mr. Dini's bill because he was in favor of anything that would improve the quality of water with a minimal impact.

Mr. Dini then asked what alternatives were available to the phosphate now found in detergents.

DR. Krenkel indicated that some of the substitutes were referred to in his handout and that the people who were using them seemed to be happy.

The next proponent of A.B. 147 was Nick Colonna, Co-president of the Nevada State Apartment Association. Mr. Colonna introduced

R. M. Hutchins, who was testifying with him. Mr. Colonna said that he had documented proof to show that some detergent bans had worked in different areas of the country and then listed some of the areas.

Mr. Colonna indicated that he was testifying from the point of a concerned consumer. He related his experience as a resident of Suffolk County, New York, where the use and sale of detergents had been banned. He stated that the ban in Suffolk County had worked well even though there was an initial "human cry". He indicated that aquifers had been rejuvenated and the consumers had accepted the ban.

Dr. Robinson questioned Mr. Colonna as to his place of residence. Mr. Colonna indicated that he lived in Washoe Valley.

Dr. Robinson then asked if septic tanks eliminated phosphates. Mr. Hutchins responded that they did not. He added that the chemicals in detergents that flowed into septic tanks were responsible for killing off the bacteria that made such tanks work.

There ensued conversation between Dr. Robinson and Mr. Dini concerning the flow of water into Lake Lahontan and wastewater treatment plants in the Reno/Carson City area.

Lewis Dodgion, administrator of the Division of Environmental Protection, came forward to explain how Carson City handled the discharge from the Carson River. He indicated that Carson City was going to attempt to get the discharge out of the river and go to land application. He added that there were no provisions for the removal of phosphates.

Mr. Hutchins stated that if the discharge was taken out of the river, it would still ultimately wind up in the groundwater He also referred to a television program that had indicated it would cost one hundred billion dollars to remove the known pollutants from the nation's water. He added, "We're a great nation to throw money at a problem rather than go back to the source of the problem." Mr. Hutchins informed the Committee that he had attempted to give testimony at hearings in 1971 concerning the water pollution problem. He suggested that consumers return to the use of natural soaps, and that A.B. 147 be expanded to prohibit the depositing of all synthetic chemicals into water supplies through the use of detergent products. He named some of the specific chemicals that caused problems, and indicated that he had been working on the pollution problem for approximately fourteen years.

Dr. Robinson asked Mr. Colonna if consumers living in states where detergents were banned were going to other areas to buy the detergents.

Mr. Colonna said that there was an initial problem in Suffolk

County where the consumers would go into neighboring counties to buy restricted products, but that an educational program was able to eliminate most of that sort of thing. He added that the alternative soap products were accepted by the consumers. He also said that some people who lived in "a very delicate area" near Fallon, Nevada had voluntarily used nondetergent products for a period of ten years and had no complaints about the substitutes.

Dr. Robinson asked if Pyramid Lake was showing the same signs of pollution found in Lake Lahontan and if the Truckee River was being contaminated like the Carson River. Mr. Dodgion responded that it (the river) was similarly polluted, but that Pyramid Lake was much bigger and, therefore, had a greater capacity for assimilating nutrients. He added that the Reno/Sparks treatment plant had just started removing phosphorus from the Truckee River, which would provide protection for both Pyramid Lake and Lake Lahontan. Mr. Dodgion indicated that the plant would reduce the phosphate loading of Lake Lahontan by approximately forty percent.

Mr. Colonna then read portions of a letter from the Suffolk County Health Department which indicated that there was a ninety-five percent compliance rate to the detergent ban in that county.

Mr. Prengaman asked Mr. Hutchins what else contributed to the phosphate pollution besides detergents.

Mr. Hutchins indicated that organic phosphorus was also evident in human urine, but that this kind of phosphorus was not a factor in eutrophication. He also admitted that there were phosphates in fertilizers, but that he did not think that phosphates from fertilizers caused a problem in Nevada.

Dr. Robinson asked Mr. Colonna what effect regional bans would have on the problem. Mr. Colonna said that such bans would at least be a start if a statewide ban was not practical.

Mr. Hutchins commented that wetting agents in detergents destroy the nonpermeable membranes that line the bottoms of Nevada's aquifers, thereby causing the water to flow deeper into the earth. He also cited some statistics about the amount of energy used by waste treatment plants to remove pollutants from the water.

Dr. Robinson then asked Mr. Colonna why more counties in New York had not adopted bans on phosphates or detergents.

Mr. Hutchins responded that all of the states around the Great Lakes had used bans in one form or another, and that the bans had improved the water quality in the Great Lakes considerably.

The next proponent testifying on A.B. 147 was Dennis O'Connor. Mr. O'Connor indicated that he was a resident of Fallon, Nevada. He also stated that he didn't feel that a temporary ban would

solve the problem and that other additives in detergents were just as harmful as phosphates. Mr. O'Connor said that he had voluntarily changed to biodegradable soaps which had resulted in a lessening of the build-up in his septic system. He added that biodegradable soaps used potash as an ingredient, and that the potash enriched the soil around the septic tanks.

Mr. O'Connor remarked that if the polution of Lake Lahontan continued, the people would seek legal action against the state.

Mr. O'Connor also commented that Tide used ground glass as an ingredient and that this caused skin reactions in some people. He concluded his remarks by saying that Pyramid Lake would soon have the same problems with eutrophication that Lake Lahontan was having.

Next to speak was Lou Dodgion, Administrator of the State Division of Environmental Protection. He indicated that the best report for providing information on phosphorus polution was a report titled "Phosphorus Management For the Great Lakes". Mr. Dodgion said that a phosphorus ban in Nevada would eliminate approximately thirty-five to forty percent of the phosphorus present in the waters of the state, which was not sufficient to solve the problem, and would still require plants to remove phosphorus from the water. He went on to say that such a reduction in the phosphorus would nevertheless save operating costs of waste treatment plants.

Mr. DuBois asked Mr. Dodgion if there was a problem with phosphorus pollution in Clark County.

Mr. Dodgion responded that the major waste treatment plants in Clark County were in the process of installing phosphorus removing equipment. He added that the Reno/Sparks plant was already removing phosphorus from the Truckee River to meet water quality standards and that this would add considerably to the water quality of Lake Lahontan.

Dr. Robinson asked if there were any major industrial plants which dumped phosphorus into the state's water supply.

Mr. Dodgion responded that there were not.

Tom Young, Executive Manager of the Nevada Environmental Action Trust, Indicated that he would address the financial impact to the Truckee Meadows community of removal of phosphorus from the Truckee River. He said that millions of dollars had been spent on studies of treatment processes, and that additional millions would be spent on removing the phosphorus from the water. He added that if anything could be done to cut some of the process down, thereby cutting the expenses, it should be done. Mr. Young said that sewer fees in Reno and Sparks had recently been doubled because of the cost of operating the water treatment

plant.

Mr. Young said that he had inventoried some of the soaps that were available in local markets, and that he saw no substantial differences between any of the soaps with regard to prices.

Speaking as an opponent to A.B. 147 was George Vargas, counsel for the Soap and Detergent Association. Mr. Vargas stated that if this bill were passed, there was a possibility that women would have to return to washing their clothes by pounding them on the rocks in the rivers. He also indicated that a good deal of the testimony in favor of the bill derived from studies done in the Great Lakes area, where there was heavy industrialization. He said that Nevada's problem was quite different from the Great Lakes area, and that there were no western states that had employed bans on phosphorus.

Mr. Vargas presented to the Committee a statement from Robert Sumner, Fishery Staff Specialist for the Nevada Department of Wildlife, which indicated that the fish that died at the Lake Lahontan Reservoir during the summer of 1980 died of a fish disease called Columnaris, a stress disease. This statement is attached and marked "EXHIBIT B".

Mr. Vargas then produced some Census statistics for the Committee to show that the majority of the cities in Nevada were small in population and that these cities would be hurt the most because there were no suppliers of detergents which did not contain phosphates to service these cities and communities. The statistics are attached and marked "EXHIBIT C". Mr. Vargas said that he had witnesses to testify that would show that the substitute soaps, ". . . are inferior, expensive, damaging to washing machines, and add to the cost."

Mr. Vargas added that half of the state's population was located in Clark County, where there was no problem with phosphorus pollution, and that a ban on phosphate containing detergents would cause these people to question the Legislature's action. Mr. Vargas then introduced Pete Kelly as a witness to testify against the bill.

Mr. Dini stated to Mr. Vargas that he was missing the point of the bill and that to continue loading Lake Lahontan with phosphate-containing detergents would result in another closure of the lake. He added that the people who used the water of Lake Lahontan might be forced to take legal action against Reno and Sparks if the discharge of phosphates into the lake was not stopped. He added, "I don't care how many experts you're going to bring me; I'm not going to believe any of them at this point."

Mr. Vargas responded that he could see no concrete evidence to show that the phosphates in detergents were the cause of the problems at Lake Lahontan. He also said that even if it were an established fact, he saw no need for a statewide ban to solve

the problems of one area.

Mr. Dini went on to say that several years ago, the state had issued over 70 million dollars in bonds so that Clark County could build a treatment plant to take the same problem that was now facing Lake Lahontan. He said that it was a statewide problem, and that the U.S. Congress should be approached to see what could be done about expanding the ban to the eastern slope of the Sierra Mountains, which is located in California.

Dr. Robinson asked if any determination was given for the closing of Lake Lahontan. Mr. Vargas responded that there were dead fish on the banks of the lake and a very large content of algae.

Dr. Krenkel interjected that competent studies had been done which showed that the algae in Lake Lahontan was causing health problems, and that that was why the Health Department had closed the lake last summer.

Pete Kelly, representing the Nevada Retail Association, read a statement prepared by J.L. Gilbert, Nevada District Manager. This statement is attached and marked "EXHIBIT D." The statement shows which types of cleaning detergents are preferred by consumers, and the availability of substitute, non-phosphate containing detergents. The statement also indicated that suppliers of detergents to Nevada markets might be reluctant to stock no-phosphate brands.

Mr. Dini asked Mr. Kelly if he did not think that if there was a market for no-phosphate detergents, the suppliers would provide the products.

Mr. Kelly answered that if there was an adequate market, he was sure that they would; however, the closeness of Nevada's cities to states where there was no ban, would present a problem in that consumers would be crossing state lines to purchase their favorite products

Mr. Vargas then introduced Dr. Donna Beth Downer, Dean of the School of Home Economics at the University of Nevada, Reno. Dr. Downer read her statement in opposition to A.B. 147 to the Committee. The entire content of her remarks is attached and marked "EXHIBIT E".

Following Dr. Downer, Mr. Vargas introduced Mr. Frank Anastasia, representing the Professional and Regulatory Services Section for the Packaged Soap and Detergent Division of Proctor and Gamble Company of Cincinnati, Ohio. Mr. Anastasia's remarks are also attached in their entirety and marked "EXHIBIT F and F-1". The net of Mr. Anastasia's remarks showed that a ban on detergents containing phosphates would result in his company not being able to sell the consumer the detergents that they wanted to use--those containing phosphates, which he said cleaned clothes

significantly better than detergents which did not contain phosphates.

Dr. Robinson questioned Mr. Anastasia if the testimony of a previous witness, who had indicated that Tide contained ground glass, was true.

Mr. Anastasia said, "Proctor and Gamble does not intentionally add any of the things you've heard today with the exception of pumice."

Dr. Robinson then referred to a study prepared by Samuel Hohmann, Senior Research Analyst. The report is attached and marked "EXHIBIT G". He said that the report indicated that there may be an equal amount of sludge produced by non-phosphate containing detergents as are created by those detergents which do contain phosphates.

Mr. Anastasia responded that the report was correct, and he cited other reports that had been done which corroborated the results in Mr. Hohmann's research documents. He said, "There is no reduction in sludge from phosphate detergents." Mr. Anastasia added that the consumers were complaining very much about the effectiveness of detergents which did not containe phosphates, and that they were writing to the manufacturers with their complaints instead of writing to the state governments.

Mr. Anastasia also said that after bans go into effect, sales of Proctor and Gamble products which contain phosphates go down in some states and up in other states. He added, "In the long run, there is little change." He then rated products on a scale of one to ten. Phosphate detergents rated nine; substitutes were rated at two and three.

Mr. Prengaman then said that the problem of water pollution was much more critical to residents of western states, particularly Nevada, because there was so little water available.

Mr. Anastasia indicated that he understood Mr. Prengaman's point. He also said that testimony had revolved around the millions of dollars that were spent to remove toxicants from water and he stressed that phosphorus was not toxic; that it was organic. He added that phosphorus was only a small part of pollution, and that removing it from washing detergents, would only hurt the consumer.

Responding to a question from Dr. Robinson, Mr. Anastasia said the Proctor and Gamble does manufacture phosphorus-free Tide for sale in areas where there was a ban on detergents containing phosphorus.

Mr. Vargas then introduced his last witness to oppose A.B. 147; Dr. Keith Booman, of the Soap and Detergent Association of New

Dr. Booman indicated that he agreed with Mr. Dodgion in that A.B. 147 would result in some wastewater treatment cost savings. He went on to say that there would not be environmental benefits from a ban on phosphate-containing detergents. His reasons for this statement were:

1. Effluent limits on phosphorus content remain the same regardless of what the influent concentration is, and the limits will not change whether there are detergents containing phosphorus or not.

2. Treatment plants that practice land spreading, as most of plants on the Carson River do, remove approximately 99 percent of the phosphorus before the water filters back into the river.

3. Septic systems that are adequately protecting the groundwater from bacteria are also adequately protecting the groundwater from phosphorus and other components of detergents.

Dr. Booman added that one of the reasons that detergent manufacturers like to use phosphorus is that it is treatable and if it gets into drinking water, it will not cause any human health problems. He said, "The environmental effects are negligible under the conditions that you people are talking about handling sewage and are handling sewage right now." Dr. Booman also said that he had statistics to prove that the cost savings for chemical treatment where phosphorus bans were in effect were 80¢ to $2.10 per family per year. There would be no cost savings for plants practicing land treatment, because the cost of land spreading is determined by how much land is needed and how far the sewage must be pumped.

Dr. Booman handed the Committee members a sheet detailing results of five studies done of the removal of phosphates from rivers by natural, in-stream processes. The sheet is attached and marked "EXHIBIT H", and shows that 80 to 100 percent of the phosphates were removed naturally. Dr. Booman said that the effect of phosphate discharges forty or more miles from the reservoir is much attenuated by natural processes.

Dr. Booman then passed out another sheet, "EXHIBIT I", which showed the consumer impact of bans on phosphate containing detergents. He also referred to the ban in Suffolk County, New York saying that 87 percent of the consumers in that county are going outside of the county to purchase detergents containing phosphates. He added that there was no adverse effect on the water resulting from the consumers' use of phosphate-containing detergents, and that legislation has been introduced in Suffolk County to remove the ban.

Dr. Booman said that his information was credible and that several other jurisdictions (Maryland, Orange County, and Ohio) had ev

uated it and had found it acceptable. In closing, Dr. Booman presented the Chairman with an extensive, 103 page report entitled "Economic Analysis of Phosphate Control: Detergent Phosphate Limitations vs. Wastewater Treatment". That report is on file in the Chairman's office as opposed to being a part of these minutes, and can be inspected upon request.

Dr. Robinson then referred to a letter he had received from the Max Fleischmann College of Agriculture, which gave extensive explanations of technical terminology relating to chemical ingredients of detergents. The letter is attached as "EXHIBIT J".

Dr. Robinson asked what effect the use of sodium carbonate in detergent substitutes would have on the environment.

Dr. Booman answered that there was no doubt that sodium added to soil under certain circumstances would cause problems.

Mr. Dini said that the water from Lake Lahontan was used for irrigation in the Fallon area, and that the soil in that area was already high in salinity.

Dr. Robinson then remarked that he was concerned over the possibility of agravating the salinity problem by placing a ban on detergents which use phosphates, thereby forcing people to use the substitutes which are high in sodium content.

Carol Conte then came forward and suggested that a possible solution would be to wash clothes quickly and to wash them by hand.

There being no further testimony on A.B. 147, the Chairman indicated that he would accept brief testimony from Assemblyman Dean Rhoads regarding A.B. 98.

A.B. 98: Requires public utilities to offer electricity and gas at reduced rates for use at times of low demand and for right to interrupt service at other times.

Assemblyman Rhoads indicated that the bill had originated from complaints from ranchers and farmers in Nevada who had very large power bills. He said that a possible solution to this problem would be to amend Chapter 704 of NRS by adding a new section. A copy of that proposed section is attached and marked "EXHIBIT K". Assemblyman Rhoads added that the Public Service Commission and the power companies would not be opposed to this new section in the law.

In explanation to a question from Mr. Dini, Assemblyman Rhoads said that as a trade off, the farmers and ranchers would have to use their irrigation pumps only during non-peak load times. During peak load periods, they would get commercial rates such as the large hotels do.

MR. DINI MOVED THAT A.B. 98 BE AMENDED AND REFERRED BACK TO THE COMMERCE COMMITTEE FOR FURTHER HEARINGS. THE MOTION WAS SECONDED BY MR. RUSK AND CARRIED WITH THE UNANIMOUS VOTE OF THE MEMBERS PRESENT.

Dr. Robinson asked Assemblyman Rhoads to get together with Assemblymen Schofield and Marvel to work out all of the amendments to the bill and bring them back to the Committee.

Assemblyman Rhoads indicated that he would do that.

Chairman Robinson then moved the hearing to S.B. 129:

S.B. 129: Makes certain revisions concerning certificates required on maps for certain divisions of land.

At the request of the Chairman, the testimony of the only witness for this bill, Walter Neitz, is being recorded verbatim.

"My name is Walter Neitz, I'm a practicing land surveyor in the State of Nevada and I'm also president of the Nevada Association of Land Surveyors.

This bill, as background, originally was set to clean up a few odds and ends that we've been having trouble with over the past two years.

Section 1 is essentially the same as the present statute reads except for line 9, page 2, which merely states that the performance bond has been or will be placed--it's just semantics more than anything else. What was required there is the surveyor had to make essentially a false statement and yet sign and seal it because the bonds are generally posted with the governing body after the map has been signed and sealed; so it was a kind of a little thing that stuck in a few of the fellows craws. That's basically all that was.

On Section 2, referring to reversion to acreage; we have problems with reverting a parcel map to acreage. The statute, as it now reads, requires a great multitude of bodies to sign off on a reversionary map. However, they were not party to the creation to the parcel map in the first place, and essentially, this says that it's just the ones that were party to the original division of land who should be party to the reversioned acreage. That seemed to make sense, so that was the thinking behind that section.

Section 3 is essentially dealing with condominiums and condominium parcel maps; and in the last two years or so, primarily in the Lake Tahoe area, there has been a lawsuit filed and the State Engineer was required to file a certificate stating that the quantity of water was avail-

able. The State Engineer's position was that he'd already done that when the subdivisions were originally formed, and therefore, he wasn't going to do it again. So the intent of this section was to try to relieve the requirement for those certificates on the parcel maps.

Now, on page 3, and we brought this up before the Senate and somehow it got by there and it's still in here; on line 1, page 3, it states, 'At the time a final map for a condominium is presented.' The wording there was intended to be the same as the wording previously, 'should be five or more units,' because five or more units is a condominium subdivision; four or less, of course, is a parcel map.

Then, in line 3 of that same sentence, they still left the word 'tentative' there. It should read, 'immediately before the final map,' because tentative maps are not recorded, so it's just a superfluous thing. It's no use leaving it in."

At this point Mr. Dini asked Mr. Neitz if this would be changing the definition of a condominium unit.

Mr. Neitz responded, "No." He went on to say:

"What we're saying is that the certificates by the Health Department and the Division of Water Resources for a condominium parcel map would not be required. Primarily, in fact in all of them that I've ever done, they have a condominium, consisting of four or less units, on a lot of some nature that is either in a city lot or an existing subdivision, like we have up in Lake Tahoe, in Incline and around in there, that has already been approved by the Health Department and the State Engineer. We're just asking them to redo what they've already done.

Other than that, I don't feel that the Surveyor's Association has any major problem with any of these items that are suggested for change in here. I'll be glad to answer any questions that I can."

Chairman Robinson then opened the hearing on S.B. 193.

S.B. 193: Reestablishes real estate division of department of commerce, changes fees and duties of division and brokers.

Presenting S.B. 193 was Dan Miles, Deputy Fiscal Analyst. Mr. Miles remarked that S.B. 193 was the result of an interim subcommittee study called Sunset Review, which was commissioned in the last Legislature and designated three state agencies to be

terminated on July 1, 1981.

Dr. Robinson commented that in addition to reestablishing the Real Estate Division, there seemed to be "an awful lot of amendments" in the bill.

Mr. Miles responded that he would go through the bill step-by-step relating the amendments to recommendations made by the subcommittee.

Page 1, line 3, deletion of the word "advisory" relates to recommendation three of the subcommittee report. This designation is being deleted because the commission has a larger scope than just "advising" Mr. Miles indicated that the changing of the number of commission members from five to six was not a part of the original subcommittee's recommendation, but rather, it was added by the Senate Commerce and Labor Committee.

With respect to lines 6 and 7 of page 2, Mr. Miles said that the subcommittee felt that the Governor would consult with the Nevada Association of Realtors prior to making a decision of appointment of a commission member but that the language did not belong in the law, so the subcommittee recommended removing the language.

He went on to say that the committee had recommended the duty of approving or disapproving applications be given to the division instead of the commission, therefore, that function was deleted on lines 9 and 10 of page 2 of the bill. He also said that throughout the bill, language had been changed from "the commission shall" to "the division shall" with respect to certain licensing duties.

Recommendation 33 of the subcommittee's report indicated that the commission only existed during the times that they met, therefore, language was added on lines 16 and 17 of page 2, which enables service of process to be made at the principal office of the real estate division.

Lines 19 through 25 delete the existing qualifications of commissioners, and lines 26 through 36 spell out what the new qualifications will be.

There was some discussion between Mr. Jeffrey and Mr. Miles as to the rationale for having a salesman on the commission. There was also discussion concerning the reasoning for having a member of the public on the commission. It was the general consensus of the discussion that there was no need to have a salesman or a member of the public on the commission. Mr. Jeffrey added that it was doubtful that a knowledgable member of the public could be found who would be willing to expend the time and effort that would be required of a commission member. There were also additional remarks from the other members of the Committee, which indicated that they felt that a member of the public should not be included on the commission because no public funds were involved and because the

primary function of the commission was to establish rules and regulations.

John Crossley interjected that the subcommittee had originally recommended that a salesman be included on the commission because disciplinary actions were predominantly taken against salesmen, and they lacked representation on the commission. However, he indicated that by making the broker responsible for the actions of the salesmen, there was no longer a need to have a salesman on the commission.

Recommendation 6 suggested that the commission meeting dates specified on lines 38 and 39 of page 2 were too rigorous and recommended the new language that appears on lines 43 through 49.

Mr. Miles stated that recommendation 28 of the report suggested that a broker only be required to establish a trust account when and if he actually receives trust funds. This change appears on page 3, lines 21 and 22. He also said that the subcommittee had recommended, in its recommendation number 15, that the division change its licensing procedure. A detailed explanation of this recommendation is found on the report which is attached and marked "EXHIBIT L". Mr. Miles indicated that there were changes throughout the bill with respect to language pertaining to the licensing and examination procedure.

Lines 47 and 48 of page 5 relate to recommendation number 29, which suggests that a salesman only needs to be associated with a broker once he is licensed. Mr. Miles said that the changes in time on lines 21 through 23 of page 6 were made because the subcommittee had evaluated testimony which indicated that 30 days was an insufficient period of time and had caused excessive paperwork for the division because of changes. The changes on lines 34 from 30 to 60 days were also related to the application process.

Mr. Miles explained that the changes to page 7, lines 5,6, and 7 were a part of recommendation 15, which is detailed in EXHIBIT L. He also indicated that the change on lines 38, 39, and 40 of page 7 were needed in order for the cost of transcription to be borne by the individual requesting such a transcription. This change relates to recommendation number 31, the explanation of which is found in EXHIBIT L.

Mr. Miles added that the subcommittee had recommended a partial reciprocity between Nevada and other states. This change is found on page 8, lines 17 and 18. He added that NRS 645 was a statute that had been amended many times, and that the subcommittee had tried to remove redundancies such as the one found on lines 5, 6 and 7 of page 7.

He then referred to line 50 of page 8 through line 3 of page 9. Mr. Miles indicated that this is the section alluded to before by Mr. Crossley, which made the broker responsible for the actions of the salesmen or broker-salesmen associated with him. He said that this had been the "intent" of the law before, but no clear

duty had ever been outlined.

Page 10 and 11 deal with fees charged by the division. These changes are addressed in the subcommittee's recommendation number 7, which is detailed in EXHIBIT L.

Dr. Robinson questioned the changes on page 11, lines 17 and 18.

Mr. Miles responded that this was part of recommendation number 5 made by the subcommittee, which clarified the duties of the commission and the division. He added that the subcommittee, in recommendation number 11, had suggested that the education and recovery fund share the cost of the division's Education Coordinator's salary as well as other costs relating to the operation of the educational programs. He also explained the operation of the recovery fund, and there was discussion to the effect that the right of the commission to approve expenditures for research and recovery should not be removed from the statutes as is being done in the bill.

Mr. Miles explained that the division had instituted a competitive proposal system for entities wishing to offer educational courses. Before, he said, such programs, which were paid for through the ERRF fund, were all awarded to the Association of Realtors. He indicated that the subcommittee had commended the division for this new procedure for awarding contracts.

The subcommittee had also recommended that the requirement for a claimant against the ERRF fund to post a bond be eliminated. This change is effected on page 12, lines 17 through 19. With respect to claims paid out by the ERRF fund, the subcommittee suggested that the interest rate be increased from 6 to 8 percent. That change appears on line 28, page 12 of the bill.

Lines 34 through 42 of page 12 relate to recommendation number 18, which suggests that the division revert to the procedure of obtaining fingerprints for licensees.

Mr. Miles stated that lines 11, 12, 13 and 14 on page 14 related to NRS 119, which relates to subdivision law. He indicated that the fees in this area needed to be increased in order to carry their own weight.

Mr. Miles indicated that the most important section of S.B. 193 was found on line 46, page 14, which is the reestablishment provision for the real estate division.

The final recommendations of the subcommittee suggested that the requirement for a pocket card be eliminated as well as the requirement for the applicant to provide recommendations of character for three individuals in order to be able to sit for the licensing exam.

Also testifying on behalf of S.B. 193 was Jim Wadhams, Director of the Department of Commerce. With Mr. Wadhams, was Lynn Luman, Administrator of the Real Estate Division.

Mr. Wadhams indicated that the key provision of the bill was Section 28, and that he hoped that section would be passed. He stated that he had two points that he wanted to stress. The first problem appeared on page 2, lines 18 through 36, which changed the composition of the commission. Mr. Wadhams gave the Committee a brief explanation of the function of the commission, and commented that having a member of the general public on the commission would have a "cosmetic rather than substantive" impact.

Dr. Robinson asked if there would be any objection to eliminating all of the new language pertaining to the make-up of the commission, which would return it to its original state.

Mr. Wadhams remarked that that would be fine. He also said that the language in Section 17 made the broker responsible for the actions of his salesmen. He added that it was not merely the intent of the law for this to happen, but it was the actual practice.

Mr. Wadhams then referred to lines 16, 17, and 18 on page 11 and said, "Why legislate something that's being done?" He commented that the current administration had made the change to competitive proposals for educational contracts. He said that this system was being participated in very actively. Mr. Wadhams added, "Given the nature of this fund and the amounts of monies being expended for education and research; having the commission independent of the division, to review the recommendations and ultimately pass upon the award of the contract and the disbursement of the funds, is a very valuable thing."

Lynn Luman then indicated that lines 6 and 7 on page 13 were printed in brackets in the first reprint, and this was not intended. He also asked to have the brackets eliminated after "approval" on line 16 of page 11, and to have the words "with the advice" removed from that line.

Mr. Luman also recommended the insertion of the word "fine" between the words "may" and "suspend" on line 50 of page 8.

Mr. Wadhams added that he would be happy to provide language to effect this change, which would be consistent with that of the Insurance Division.

Next to testify on S.B. 193 was John Crossley, Legislative Auditor. With Mr. Crossely was Gary Crews, who had been in charge of the audit of the Real Estate Division.

Mr. Crossley indicated that for many years, the educational contracts had been awarded exclusively to the Association of Realtors, and that it had been a recommendation of the audit report that such contracts should be opened to competitive bid, which was now being done. He went on to say that the deletion of the word "approval" from line 16, page 11, was consistent with the statement on page 2, lines 8 and 9 which say, "The commission shall act in an

advisory capacity to the real estate division . . ."

Dr. Robinson noted that only having the Commission function as an advisor instead of approving the Division's decisions and recommendations was actually contrary to general governmental procedures.

Mr. Crossley explained that the subcommittee had suggested that the Commission act "in an advisory capacity" because there was such a close relationship between the Commission members and the Association of Realtors, with several members of the Commission being officers of the Association at one time or another. It was felt that the Division did not have the same tie to the Association as did the Commission, and by having the Commission function only in an advisory capacity to the Division it would help prevent the Commission from awarding all of its contracts to the Association.

Mr. Crossley added that if the Committee wanted to change the Commission's function to one of "approving" instead of "advising", then the function of approval would need to be added to Section 3 on page 2 of the bill.

Dr. Robinson remarked that he could forsee a situation where the people who were paying into the education fund would ask that half of the fees be put into an education fund that they could run through their association. He added that he would support such a move because he did not feel that the Real Estate Division should be involved in the education business.

Gary Crews, from the Auditing Division, then indicated that the state's general fund contributed approximately $700,000 last year to the support of the Real Estate Division, which was one of the reasons that the interim subcommittee had suggested placing a public member on the Commission.

Mr. Wadhams commented that although this amount of money had been paid out of the general fund on behalf of the Real Estate Division, it should be understood that the fees collected for licensing and testing by the Division were put into the general fund. He added that although at this point the Division was not self-supporting, the proposed increases in the fees would generate enough revenue to make it self-supporting in the future.

There ensued some discussion among the Committee members to the effect that there should be no public member on the Commission because public funds would not be used for the support of the Division and because the industry was entirely regulated by a governmental agency. There was also discussion concerning the money brought in by the licensing fees and the examination fees as well as budget projections.

Speaking next was Bob Bowers, vice-president of the Real Estate Advisory Commission. Mr. Bowers introduced Joe Nolan, Dana Richards and Corky Lingenfelter, other members of the Commission.

Mr. Bowers stipulated that the Commission only had power to act upon situations that were brought before it. He also said that the Commission had no budget or staff and had an identity only when it gathered for meetings or hearings. He stressed that a member of the public would not have the dedication, knowledge or time to be a productive member of the Commission. Mr. Bowers also reiterated some of the testimony heard from previous witnesses. He said that the members of the Commission were adamantly opposed to having either a member of the public or a salesman on the Commission. He then produced a letter from Michael L. Melner, a former member of the Commission, in which Mr. Melner addressed his disapproval of having a consumer placed on the Commission. A copy of this letter is attached as "EXHIBIT M".

Mr. Bowers added that he would like to see a provision incorporated into the law that would prevent persons from filing lawsuits against the individual members of the Commission. He explained that there were persons who had filed suits against the Commission members in the past, and that there would be another one in the near future.

Joe Nolan then gave the Committee some information about the origin and background of the Education, Research and Recovery Fund, ERRF. He said that originally all licensees had been required to have a $1,000 bond for the protection of the public until the Commission decided to underwrite its own program. The funds that were in excess of the amount required to cover claims were put into a separate fund for the education of licensees. The fees and bonding limits were increased over a period of time until they reached the present amounts. He added that the excess accumulated in the education fund and that last year over $200,000 was spent for educational programs and seminars. He stressed that the fees and bonding limits were self-imposed and were increased by the licensees own wishes and were not a result of state action.

There was discussion about the requirement for the Commission to Hold hearings in the accused individual's home area. It was suggested that some provision be made to allow the state to recover, from the accused individual, some of the cost of moving hearings away from the usual meeting and hearing places if that individual was found guilty of charges.

Bill Cozart, of the Nevada Association of Realtors, to save time, passed out copies of the Association's testimony and some suggested amendments to S.B. 193. He did say that one of the proposed changes was to add new language to the law which would prohibit money from the ERRF fund from being used to pay the salaries and travel expenses of any Division personnel. A copy of the testimony and the proposed amendments are attached as EXHIBIT N and N-1. Mr. Cozart added that the money in the ERRF fund should be kept pure and should be used specifically to pay the direct costs of education and research.

In response to a question from Mr. Jeffrey, Mr. Cozart indicated

that there would be enough money generated by other fees to pay for salaries and travel. He added that such allowances were built into the budget.

Mr. Wadhams responded to Mr. Cozart's remarks by saying that he definitely opposed the amendment placing prohibitions on the ERRF fund. He said that the Governor's budget had eliminated the position which monitored, coordinated and administered the programs funded out of ERRF. He added, "It seems to us, as it did to the Senate Committee as well as the interim committee, that a program contains not only the substantive benefits, but the cost of providing that."

There was no further testimony on S.B. 193, so the Chairman moved the hearing to S.B. 269.

S.B. 269: Revises educational requirements and certain administrative procedures affecting real estate brokers and salesmen.

Bill Cozart presented the Committee with a proposed amendment to S.B. 269. A copy of that amendment is attached as "EXHIBIT O". He explained that this amendment was trying to plug a loophole that allowed people to get a Nevada broker's license without ever having to take a course in Nevada real estate law.

Also testifying on S.B. 269 were Lynn Luman, Administrator of the Real Estate Division and Richelle O'Driscoll, Education Director for the Division.

Mr. Luman and Ms. O'Driscoll explained the educational requirements addressed in the bill. Ms. O'Driscoll commented that as the language in a portion of the bill was written, the colleges and universities were unable to meet the requirements because they simply did not have as many business and real estate courses available as were being asked for.

Mr. Luman suggested that a period placed after the word "courses" on line 19, page 2 would take care of the problem.

Ms. O'Driscoll indicated that the Division was in support of the intent of the amendment proposed by Mr. Cozart on S.B. 269; however, there might be a problem with enforcement because the Division had no jurisdiction over the public colleges and universities and what they should teach. She added that the structure of curriculum in universities made it especially difficult to require a certain number of hours in a given area. She illustrated her point with an explanation of how real estate law courses were being taught in the community colleges and at the universities.

Ms. O'Driscoll also explained to the Committee how the proprietary schools differed in their approach to teaching real estate courses from the community colleges and the universities.

Immediately following Ms. O'Driscoll's comments, Chairman Robinson adjourned the meeting.

Respectfully submitted,

Evelyn Edwards
Committee Secretary

61st SESSION NEVADA LEGISLATURE

ASSEMBLY COMMERCE COMMITTEE

LEGISLATION ACTION

DATE April 9, 1981

SUBJECT A.B. 98: Requires public utilities to offer electricity and gass at reduced rates for use at times of low demand for right to interrupt service at other times.

MOTION: And refer back to Committee

Do Pass ____ Amend X Indefinitely Postpone ____ Reconsider ____

Moved By MR. DINI Seconded By MR. RUSK

AMENDMENT: Amend and referr back to Committee

Moved By _____ Seconded By _____

AMENDMENT: _____

Moved By _____ Seconded By _____

	MOTION		AMEND		AMEND	
VOTE:	Yes	No	Yes	No	Yes	No
BENNETT	X					
BRADY	Absent-excused					
BREMNER	Absent-excused					
CHANEY	X					
DINI	X					
DUBOIS	X					
JEFFREY	X					
KOVACS	X					
PRENGAMAN	X					
RUSK	X					
ROBINSON	X					
TALLY:	9	0				

ORIGINAL MOTION: Passed X Defeated _____ Withdrawn _____

AMENDED & PASSED _____ AMENDED & DEFEATED _____

AMENDED & PASSED _____ AMENDED & DEFEATED _____

Attached to Minutes April 9, 1981

ASSEMBLY COMMERCE COMMITTEE

GUEST LIST

DATE: 4-9-81

PLEASE PRINT YOUR NAME	PLEASE PRINT WHO YOU REPRESENT	I WISH TO SPEAK FOR	AGAINST	BILL NO.
Walter Neitz	Nev. Assoc. Land Surveyors	X		SB 129
[illegible]	Commerce			
[illegible]	T. C. [illegible]	X	X	153
Bob Bruce	U.P. R.E. [illegible]	X	X	193
Bill Cozart	Nev. Assoc & [illegible]	X	X	SB 193 269
[illegible]	Soap & Detergent [illegible]		X	147
Dr. D. Dolcourt	Dean Home Econ [illegible]		X	147
Pete Kelly	Retail Merchants		X	147
Dr Kerk [illegible]	So. Nev. [illegible]		X	147
Frank Daniels	[illegible]		X	147

C59

ASSEMBLY COMMERCE COMMITTEE

GUEST LIST

DATE: 4-9-81

PLEASE PRINT YOUR NAME	PLEASE PRINT WHO YOU REPRESENT	I WISH TO SPEAK FOR	AGAINST	BILL NO.
Dan Miles	LCB	—		193
Dennis O'Connor	Constitutional Legs.	✓		AB-147
Nick Colonna	Nev State Ass	✓		AB-147
R.M. Hutchins	Nevada's Water	✓		AB-147
K. Boorman	SDA		✓	147
Jim Wadhams	Commerce Dept	✓		SB193

650

EXHIBIT A-1

(1)

Rx for ailing lakes—a low phosphate diet

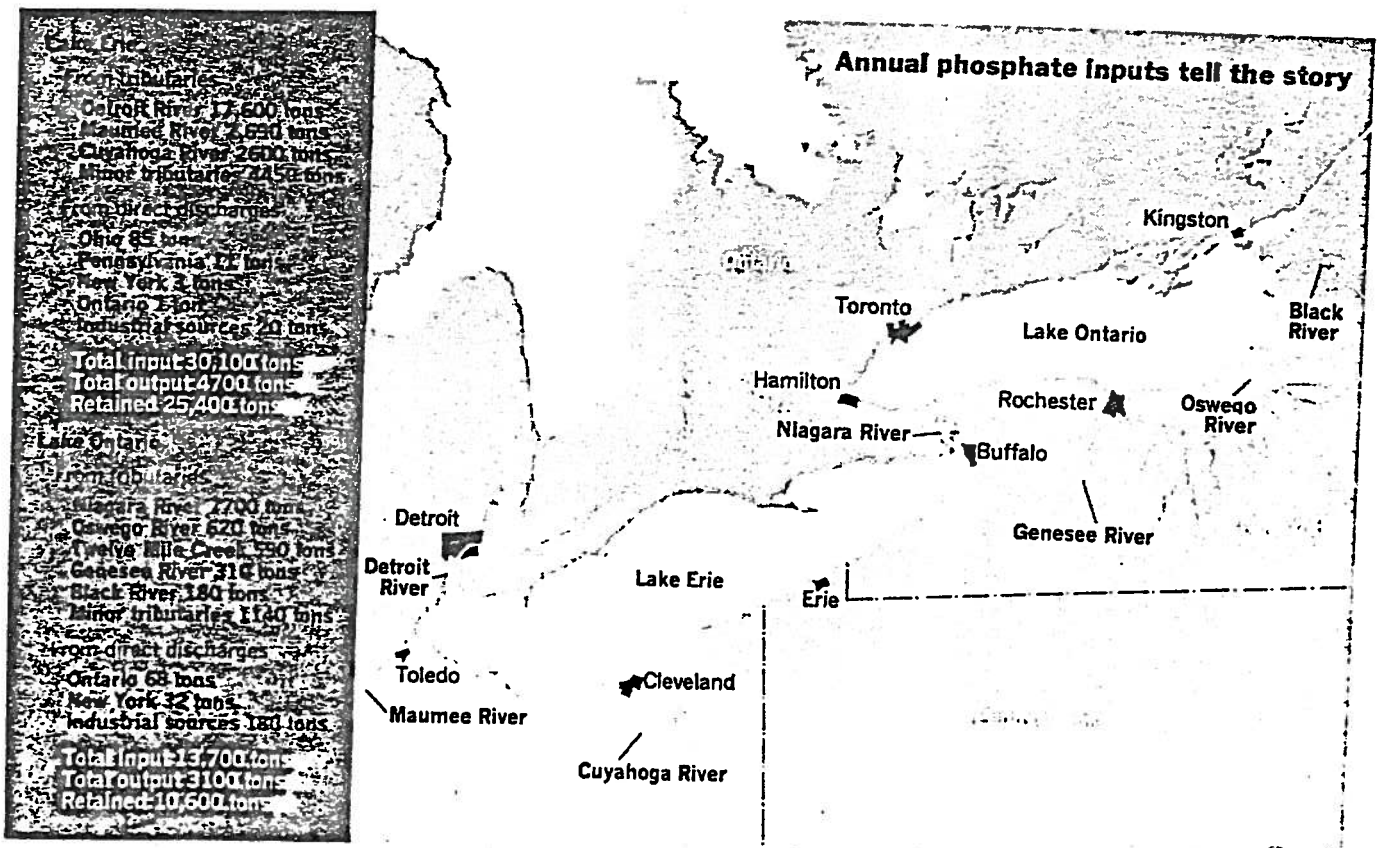
Boundary Commission study sees detergent reformulation and tertiary treatment as only hope for lower Great Lakes

At first glance, the technical report issued last month to the U.S.-Canadian International Joint Commission on the pollution of Lakes Erie and Ontario and the St. Lawrence River contains few surprises: Yes, these waters are already in an advanced state of eutrophication, and deteriorating rapidly; yes, phosphates are a key link in the deterioration process; and yes, municipal waste effluents are the major culprit, although industrial effluents are also a threat. But the significance of the report is that it goes well beyond confirming what is already known about the lakes. Specifically, the report:

- Contains perhaps the most comprehensive inventory yet of pollution sources to these waters, and includes estimates of costs of control.
- Sets up water quality objectives appropriate to the area and recommends accelerated programs to meet these goals.
- Makes a vigorous argument that control of phosphate inputs would significantly curb eutrophication of the lakes, even in the absence of similar controls on nitrates.
- Firmly endorses elimination of phosphates from household detergents. The report maintains that partial replacement now is possible, and that complete replacement might be possible in a few years.

The report asks for continued and expanded cooperation between the U.S. and Canada on the whole range of lake pollution problems, through an appropriate board appointed to coordinate the effort. The commission plans to conduct public hearings on the report early in 1970, after which it will determine what recommendations to make to the U.S. and Canadian governments. The report's programs, if duly implemented, would result in the most thorough international pollution control compact ever enacted.

Such close cooperation could provide a formal mechanism for supplementing the Federal Water Pollution Control Administration's efforts on restoring the Great Lakes through pollution abatement enforcement conferences. A minor point of contention often broached at these conferences is the efficacy of unilateral control measures on such problems as oil spills, exploratory drilling for oil and gas, and disposal of harbor dredging spoils, that are taken without implementation on both sides of the lakes. At last year's Lake Erie conference (Cleveland, Ohio), Representative Thomas L. Ashley (D.-Ohio) contended that, for many years, both

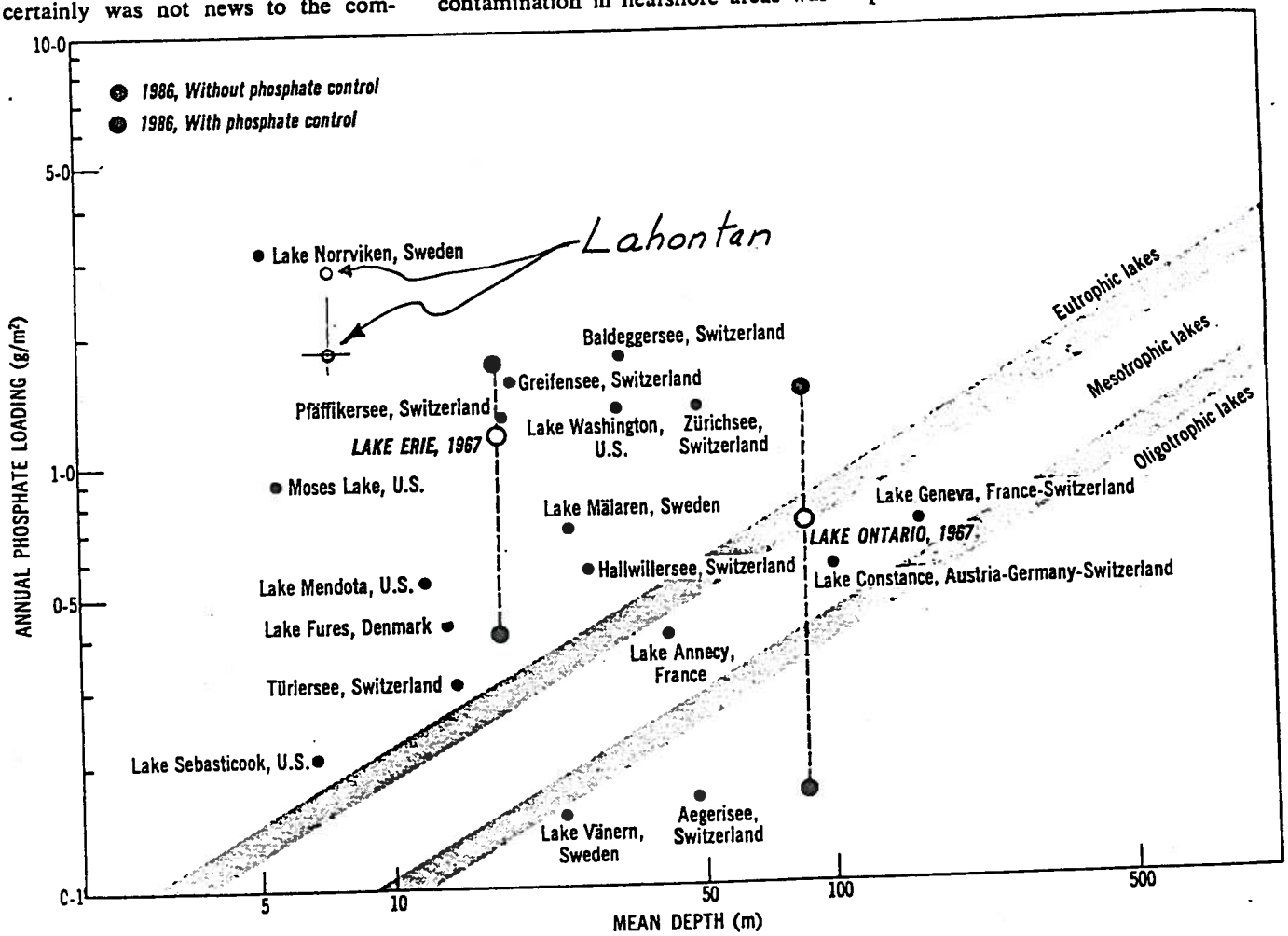


the U.S. and Canada have been in violation of the 1909 boundary treaty; one article of that treaty specifically provides that "boundary waters shall not be polluted on either side to the injury of health or property on the other."

Earlier studies

The international implications of pollution of Lakes Erie and Ontario certainly was not news to the commission, whose earliest look at the problem dates back to 1918 with issuance of a report on investigations conducted from 1913-16; another report in 1950 covered studies undertaken from 1946-48. The 1918 report was concerned with bacterial pollution from domestic sewage; it concluded that open sections of the lake were free of it, but localized contamination in nearshore areas was a direct threat to municipal water supplies.

The 1950 report indicated that many of the municipalities in the lake basins had constructed sewage treatment works and water filtration plants, but extensions of sewer services had not kept pace with population growth. Industrial pollution, not significant in 1918, was recognized as a growing problem in 1950, as was the fact that



Lower Great Lakes not beyond repair, report says

Is man-made eutrophication irreversible? The current report to the International Joint Commission proceeds from the premise that it is not: "The similarity of the eutrophication resulting from man's activities . . . to natural eutrophication is often overemphasized . . . . The extent of enrichment and eutrophication which has occurred in many of the world's lakes in the past few decades would require thousands of years under natural conditions. Indeed, such enrichment might never be possible naturally. It is unfortunate, and misleading, that the eutrophication in lakes affected by man is so often referred to as a mere acceleration of a natural phenomenon. This analogy often gives the impression that [such] eutrophication is irreversible. That this is not true has been demonstrated in a number of cases . . . ."

As to the present status of and future outlook for Lakes Erie and Ontario, the report draws on the work of R. A. Vollenweider of the Canada Centre for Inland Waters, and a contributor to the report. Vollenweider has obtained, from data on 20 lakes throughout the world, a general correlation between annual phosphate loading and mean lake depth on the one hand, and degree of enrichment—defined as oligotrophy, mesotrophy, and eutrophy, in increasing order of severity—on the other. The report then concludes:

• **Lake Ontario** presently is mesotrophic. Vollenweider's analysis puts it in the upper range nearer to eutrophy, but other criteria, such as bottom fauna, phyto- and zooplankton populations, and physicochemical characteristics, indicate that it is more oligotrophic than this. Effective phosphate controls would return Lake Ontario to an oligotrophic condition, as indicated.

• **Lake Erie**, on the other hand, is highly eutrophic, and Vollenweider's parameters would put it still within the eutrophic range, even with implementation of phosphate controls, by 1986. But, as in the case of Lake Ontario, other criteria suggest that Lake Erie is considerably less eutrophic than indicated on the chart. If so, it is more than probable that phosphate control would bring Lake Erie back into the mesotrophic range. But Lake Erie was a mesotrophic lake before the rapid enrichment of recent years, and control measures probably would not alter its condition below mesotrophy.

much of the industrial, municipal, and agricultural development was occurring without regard to the effects of multiple releases of wastes to the lakes.

The current study was initiated in 1964 when the International Joint Commission, in response to requests from the U.S. and Canada, set up advisory groups on the status of pollution in the two lakes and the international segments of the St. Lawrence River. The report of these groups disposes of the problem of cross-boundary pollution by frankly admitting that it probably exists: "While difficult to state that a given concentration of pollutant on one side of the lakes is tied to a particular source on the other, it is clear that inputs from both sides have transboundary effects."

Instead, the report devotes much of its effort to recommending technical and legislative machinery for control measures. Phosphate enrichment is singled out for special emphasis, and is the subject of the report's most sweeping recommendations. Phosphate content of detergents should be reduced immediately to minimum practical levels, with complete replacement of phosphorus in detergents with less innocuous substances as soon as possible, but not later than 1972. Furthermore, 80% removal of phosphates from all effluents should be provided, by 1972 in the Lake Erie basin and by 1975 in Lake Ontario. Treatment of waste effluents for phosphate removal must be in addition to, and not a substitute for, detergent reformulation.

Controlling nutrients

The rationale for the necessity of both measures is somewhat intricate. Phosphorus and nitrogen are, of course, widely recognized as the most important nutrients responsible for eutrophication, but some debate still occurs about whether phosphorus or nitrogen is controlling. The report states that there is every reason to believe that phosphate is the controlling factor in the enrichment of the lower Great Lakes. As evidence, the report cites the work of J. R. Vallentyne of the Fisheries Research Board of Canada's Freshwater Institute (Manitoba). In his studies, Vallentyne showed that algae blooms could be produced in lake water samples by the addition of 2% raw sewage, or even 2% effluent from secondary treatment plants. Addition of effluent treated to remove phosphorus, but not nitrogen, showed no algae bloom, but subsequent addition of phosphate alone to these samples did.

One other reason for the control of phosphorus in the absence of nitrate controls is that the phosphate loadings can be controlled more effectively. The report notes that 57-70% of the phosphorus loadings is from municipal and industrial waste effluents, as opposed to 30-40% for nitrogen. Furthermore, efficient and relatively inexpensive methods are available for 80-95% removal of phosphorus during sewage treatment, whereas comparable elimination of nitrogen compounds is not yet feasible.

Removal costs

Given this evidence of the desirability of phosphorus control, the argument for both detergent reformulation and removal at the treatment plants is largely one of economics. The report estimates that treatment costs for phosphate removal at the treatment plant would be reduced by a half to two thirds with replacement of phosphate detergent builders. Detergent sources account for 70% of the phosphorus in municipal waste, and 50% in Canada. The current average phosphate content of sewage is about 10 mg./l.; if the detergent contribution were eliminated, an 80% removal process would reduce the typical concentration to 0.6 mg./1. To achieve the same effluent concentration without replacement of detergent phosphates would require 95% removal at the treatment plant, at two to three times the cost, largely due to the additional chemicals needed and the solid waste produced.

The total cost of meeting the report's water quality objectives is put at about $1.4 billion in the U.S. and $212 million (Canadian dollars), in Canada. These figures include capital costs for phosphate removal of $265 million in the U.S. and $40 million in Canada. Although detergent reformulation probably would have little effect on capital costs for phosphate removal, the report states that the operating costs for the treatment plants would be greatly reduced. For example, in the Lake Erie-Detroit-St. Clair River system, the cost of 95% phosphate removal from a 10 mg./1. effluent would involve a total annual cost for chemicals of $17.6 million dollars. The same results could be obtained at a cost of $5.3 million by 80% treatment of a 3 mg./1. effluent which would result from phosphate-free detergents. Scaling up these figures to the entire Lake Erie-Lake Ontario-St. Lawrence River basin, the total annual savings for each country would be $478 million in the U.S. and $26 million in Canada.

Water quality objectives for lower Great Lakes

Parameter	Limits	Remarks
COLIFORMS	Less than 1000 total and 200 fecal coliforms per 100 ml.	International waters will be protected if local conditions meet these standards
DISSOLVED OXYGEN	Not less than 6.0 mg./l. in epilimnion	Established to support fish and associated biota
DISSOLVED SOLIDS	No more than 200 mg./l.	Water supplies affected at 500 mg./l.
TEMPERATURE	No change which affects beneficial use	Lack of data on effect of changes precludes absolute limits
TASTE AND ODOR	Virtually none	Phenols not to exceed a monthly average of 1.0 μg./l.
pH	No change from present	Present pH within desirable level limits
IRON	Not to exceed 0.3 mg./l.	Conforms to USPHS and Canadian drinking water standards
PHOSPHORUS	Limited to extent necessary to prevent nuisance growth of algae	Algae blooms can be expected phosphorus and nitrogen exceed 10 and 300 μg./l.
RADIOACTIVITY	Gross beta less than 1000 pCi/l., radium-226 3 pCi/l., and strontium-90 10 pCi/l.	Meets USPHS drinking water standards.

653

EXHIBIT A-2

(2)

REPORT BY THE

Comptroller General

OF THE UNITED STATES

Costly Wastewater Treatment Plants Fail To Perform As Expected

Over $25 billion in Federal funds and several billion more in State and local moneys have been spent to construct new wastewater treatment plants or to significantly modify existing plants. The Environmental Protection Agency estimates that through the year 2000 an additional $35.6 billion in Federal funds alone will be needed to construct additional treatment plants.

GAO found that many of the plants, in operation for several years, have seldom or never met the performance standards they were designed to achieve. Failure of treatment plants to meet performance expectations may not only have an adverse impact on the Nation's ability to meet its clean water goals, but may also represent the potential waste of tens of millions of dollars in Federal, State, and local moneys.

GAO recommends that the Congress and the Administrator, EPA, test various alternatives to improve the construction grants funding program and to identify

--treatment plants experiencing serious operational problems,

--the extent of repairs required for these plants, and

--who will pay for the repairs.

CED-81-9
NOVEMBER 14, 1980

COMPTROLLER GENERAL'S
REPORT TO THE CHAIRMAN AND
RANKING MINORITY MEMBER
SUBCOMMITTEE ON OVERSIGHT
AND REVIEW, HOUSE COMMITTEE
ON PUBLIC WORKS AND
TRANSPORTATION

COSTLY WASTEWATER TREATMENT PLANTS FAIL TO PERFORM AS EXPECTED

D I G E S T

Wastewater treatment plants are considered to be the frontline of the Nation's battle to eliminate water pollution and restore water quality to the thousands of miles of contaminated rivers, lakes, streams, and ocean shorelines throughout the country.

Despite a Federal investment of $25 billion, plus several billion more in State and local funds, to construct new wastewater treatment plants or to modify and expand existing plants, many are not treating wastewater at the efficiency levels they were designed to achieve. The Environmental Protection Agency's (EPA's) statistical reports on plant performance indicate that at any given point in time 50 to 75 percent of the plants are in violation of their National Pollutant Discharge Elimination System permit. GAO's random sample of 242 plants in 10 States shows an even more alarming picture--87 percent of the plants were in violation of their permit; 31 percent were, in GAO's opinion, in serious violation. (See p. 8.)

The National Pollutant Discharge Elimination System permit is EPA's principal tool for enforcing the Nation's water cleanup program. Each wastewater treatment plant must have a discharge permit that specifies the type and limits the amount of pollutant that can be discharged into a receiving body of water.

GAO classified a plant as being in "serious violation" of its permit when the plant was found to be in noncompliance with the permit for 4 consecutive months and exceeded the permit discharge limits by more than 50%.

CED-81-9

EXHIBIT A-3

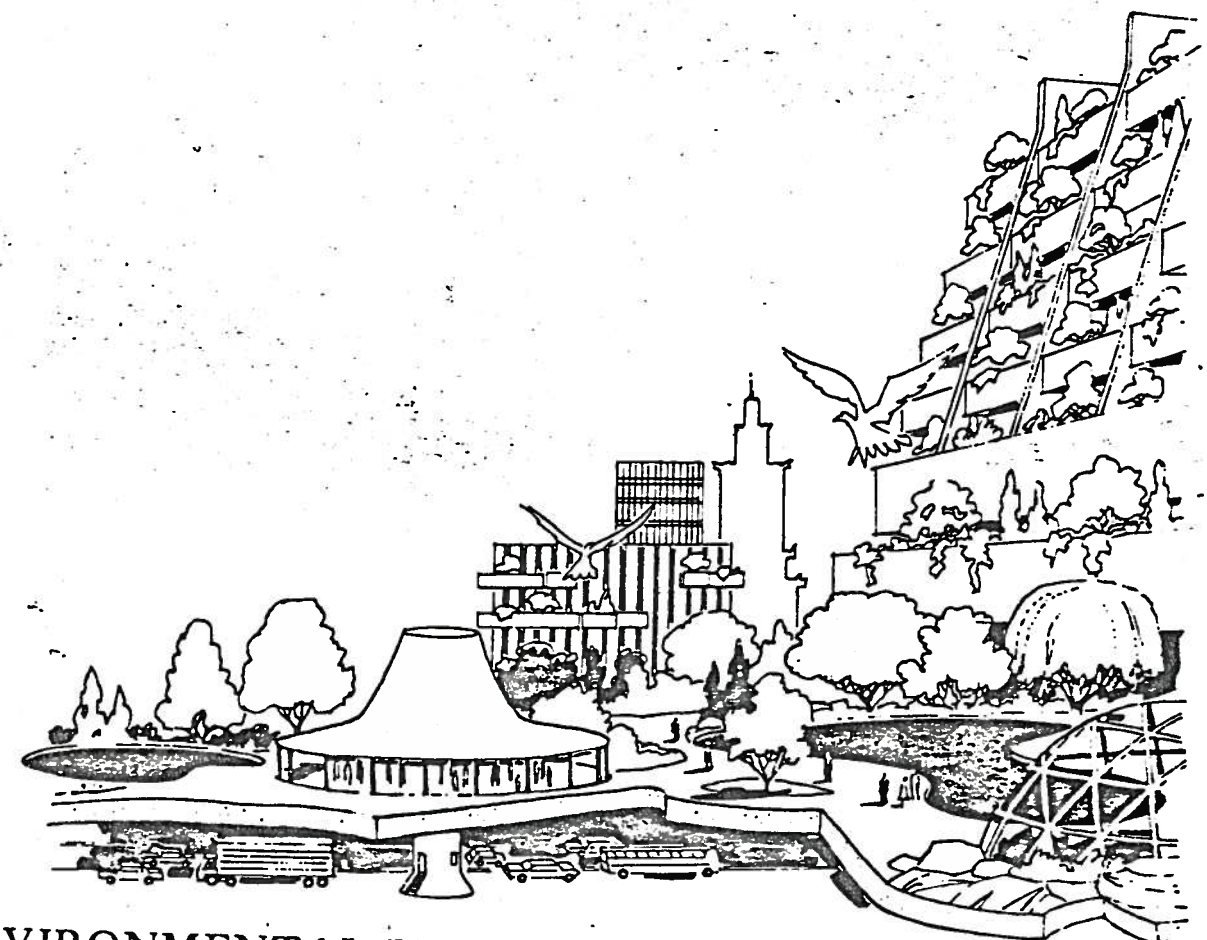
(3)

CLEAN WATER

WATER POLLUTION CONTROL RESEARCH SERIES ● 16080 DVF 02/72

PETER A. KRENKEL, Ph.D., P.E.

TECHNICAL EVALUATION OF PHOSPHATE-FREE HOME LAUNDRY DETERGENTS



U.S. ENVIRONMENTAL PROTECTION AGENCY

656

D-11

SECTION I

CONCLUSIONS

The results obtained during the course of this project indicate that effective phosphate-free home laundry detergents can be formulated using specific anionic surfactants and builders which are relatively safe and non-polluting. The results also show that these formulations can be effective over a considerable range of water hardness. Indications also are that several nearly equally effective formulations can be developed.

Two of the three surfactants investigated, sodium dodecylbenzenesulfonamidoethyl sulfate ($C_{12}H_{25}$-C_6H_4-$SO_2NHCH_2CH_2$-OSO_3Na, 112A) and methyl 3-dodecylbenzoyl-3(2)-(sodium sulfonato)propionate ($C_{12}H_{25}$-C_6H_4-$COCH(SO_3Na)CH_2CO_2CH_3$, 212), are about equally capable of yielding detergent formulations which show high promise of being acceptable substitutes for the current high-phosphate products. The third surfactant, sodium dodecylbenzenesulfonamidoethyl sulfone ($C_{12}H_{25}$-C_6H_4-$SO_2NHCH_2SO_3Na$, 112B1), although promising, yielded no formulation during the current project which were competitive with those obtained for the former two compounds.

All formulations evaluated contained 20% of the selected surfactant and 2% carboxymethylcellulose (CMC). The CMC, a well known soil suspending agent, was used ad hoc on the basis of its well-established properties, and no attempt was made to investigate possible substitutes or to determine the optimum use level. Although the point was not pursued as a specific end, indications are that the use of these surfactants may lead to detergent formulations of lower basicity than those currently in use rendering them safer and less corrosive. Most of the formulations tested had a pH of about 10 but a few which were tested at about pH 9 performed quite well.

Of the several potential builders investigated sodium acetate, sodium citrate and sodium gluconate had the greatest beneficial effect, especially when used in combination with each other. Electrolites, such as sodium chloride and sodium sulfate, also contributed to the effectiveness of some of the formulations. Sodium carbonate, on the other hand, had only a relatively minor effect in improving the performance of these surfactants.

The formulation of choice (112A-121), had good overall detergent properties performing well under all the test conditions used and is essentially free of potentially polluting substances.

Limited biological testing of the candidate surfactants indicates their safety relative to fish toxicity and their lack of algae stimulating properties. Their biodegradability had already been established under the previous project.

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

Table II

Comparison of 1970 and 1972 Phosphorus Loads from MSDGC Treatment Plants

Year	MSDGC Plant	Daily Flow MGD	Effluent Phosphorus mg/l	Phosphorus Discharge Tons/day
1970	NS STW	327	6.1	8.32
	Cal. STW	200	4.7	3.92
	WSW STW	830	2.3	7.96
	Total	1357	Total	20.20
1972	NS STW	337	3.1	4.4
	Cal. STW	201	2.8	2.3
	WSW STW	847	1.3	4.6
	Total	1385	Total	11.3
Jan-June 1972	NS STW	328	3.9	5.3
	Cal. STW	192	4.1	3.3
	WSW STW	837	2.0	7.0
	Total	1357	Total	15.6
July-Dec 1972	NS STW	347	2.2	3.2
	Cal. STW	209	2.2	1.9
	WSW STW	855	0.6	2.1
	Total	1411	Total	7.2
November 1972	NS STW	352	2.1	3.08
	Cal. STW	235	1.7	1.67
	WSW STW	857	0.5	1.79
	Total	1444	Total	6.54

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO
CONCENTRATION OF PHOSPHORUS AT THE NORTHSIDE TREATMENT PLANT
FOR 1969-1972

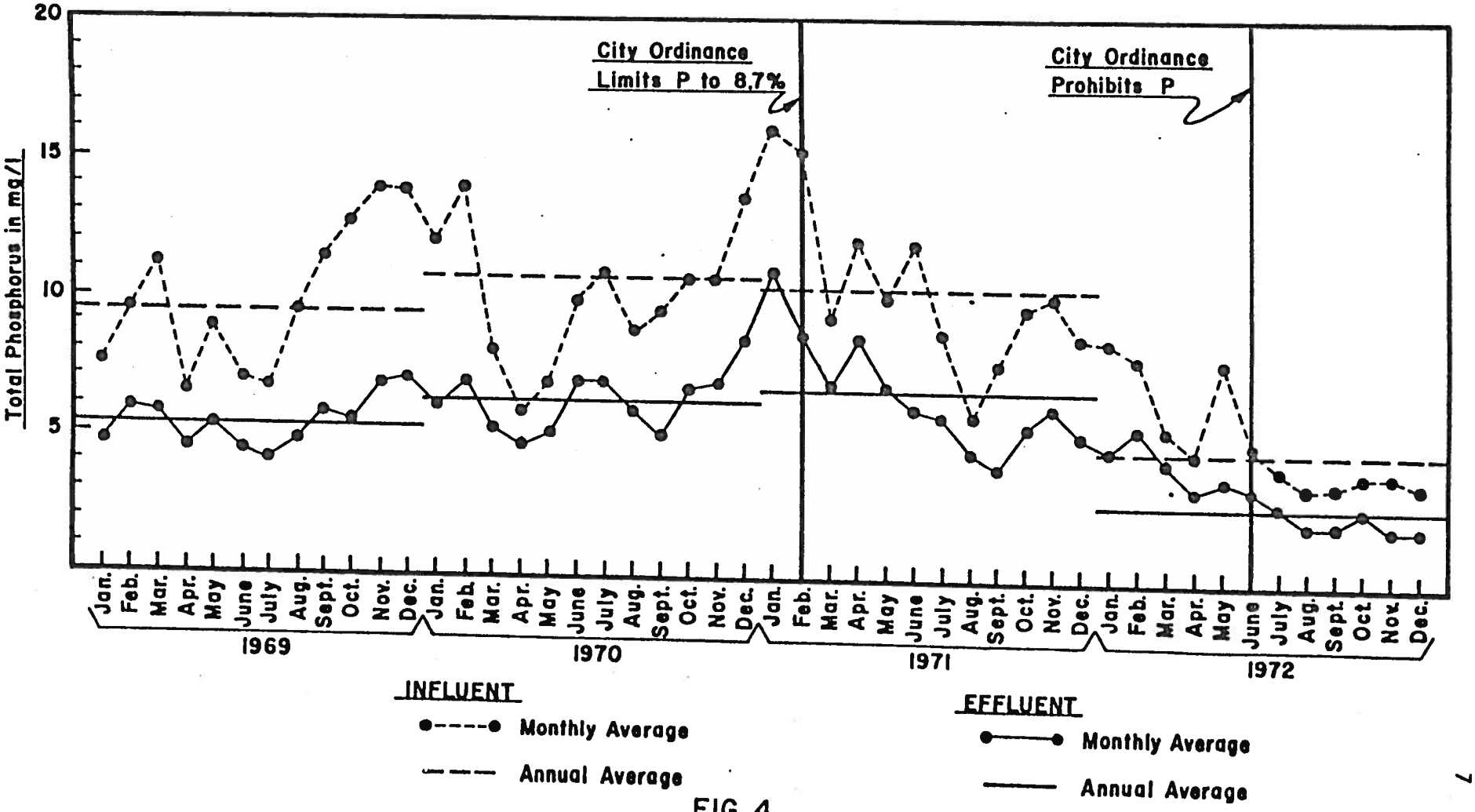


FIG. 4

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO
CONCENTRATION OF PHOSPHORUS AT THE WEST-SOUTHWEST TREATMENT PLANT FOR 1969 - 1972

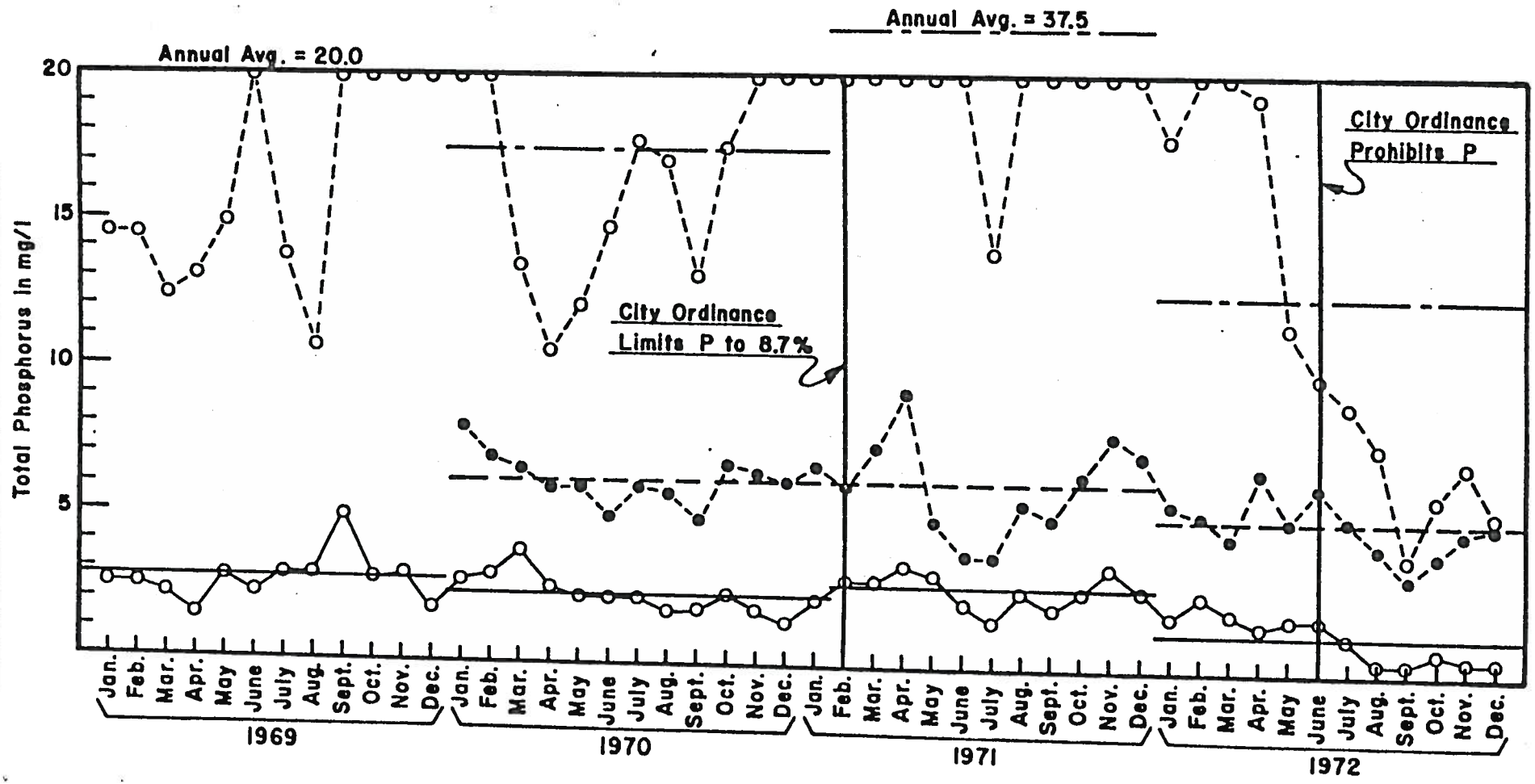


FIG. 5

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO
CONCENTRATION OF PHOSPHORUS AT THE CALUMET TREATMENT PLANT
FOR 1969-1972

662

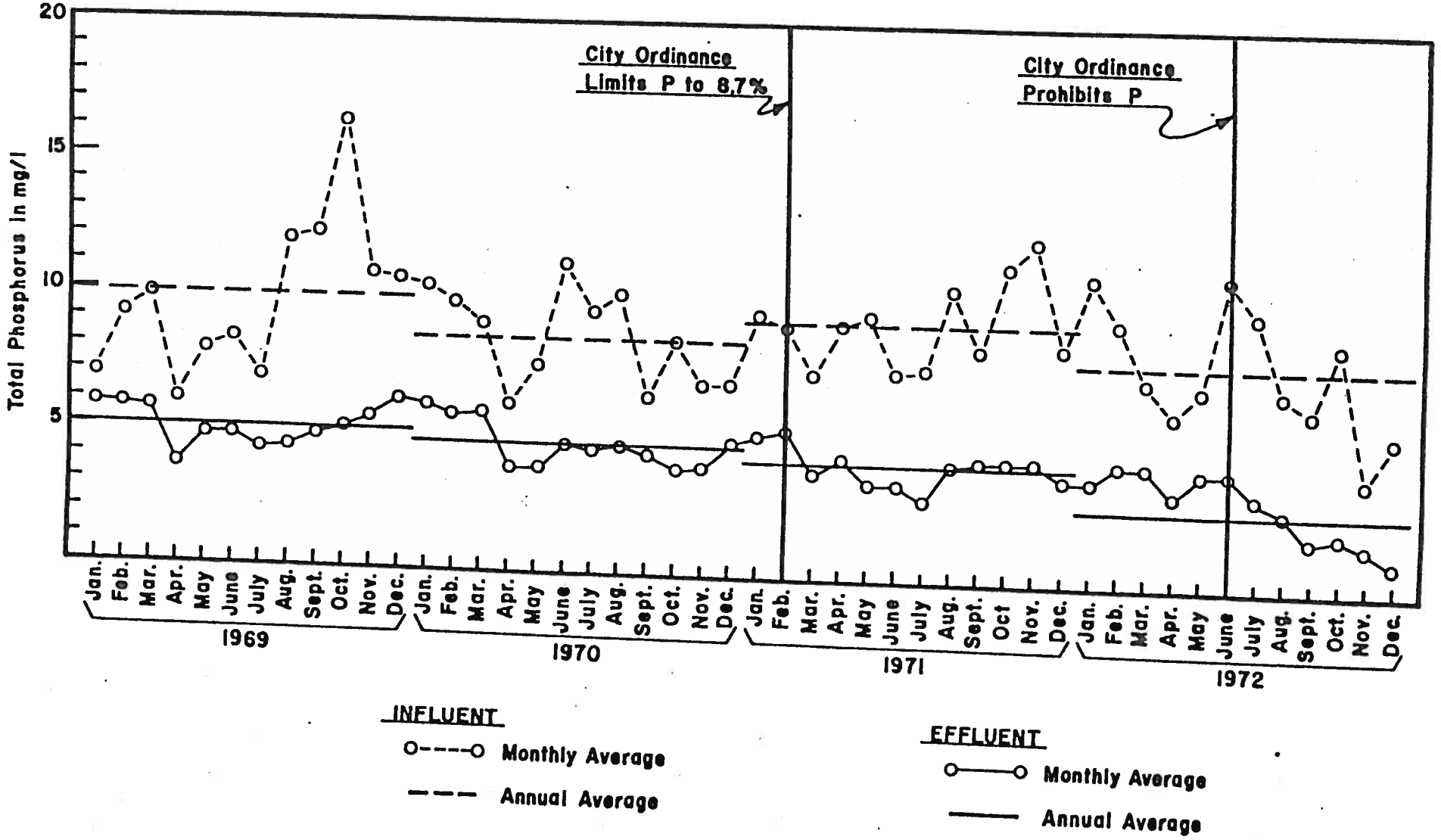


FIG. 6.

EXHIBIT B

Statement of Robert Sumner, Fishery Staff Specialist, Nevada Department of Wildlife, March 2, 1981

This began in July when we were notified that fish were dying at Lahontan Reservoir. This continued to occur into August and some of our field personnel were monitoring the general mortality of the fish involved. According to their reports, the fish losses were substantial and it was principally carp that were involved and it was continuing. On Friday, August 22nd, I personally visited the reservoir and confirmed the earlier reports. Ninety-eight percent of all the fish that seemed dead, or dying, were carp.

There were some fish in shallow water and in stressed conditions, giving further evidence that the fish loss was continuing. This mortality was occuring throughout the lake. In noting the conditions of the water at the lake, it was evident that blue-green algae was extremely abundant. On August 26th, another person and myself went to Lahontan and seined fish from three sectors of the lake. They were principally carp, however, some game fish were involved. These fish were kept alive and transported the following day to the California Department of Fish and Game - Fish Disease Laboratory in Rancho Cordova. Mr. John Moden, of the California Department of Fish and Game, a pathologist, examined the fish and concluded, from overwhelming evidence, the primary cause of mortality was a common fish disease - a bacteria called Columnaris.

In discussing the nature of the mortality, it was admitted the fish could readily be under stress which would have caused this disease to be so prevelant. There were notable examples given of the same disease occuring at fish hatcheries, usually after stress brought on the disease outbreak. Common causes of stress in fish include lack of adequate oxygen, temperature deviations from normal and sub-lethal or chronic, toxic conditions due to the presence of gases or other uncommon constituents in water.

Therefore, it was concluded that the primary cause of mortality was the fish disease. However, without additional testing of the lake waters it was undetermined what could have been the factors causing stress.

Mr. Sumner indicated to me that immediately after the major die-off of this fish mortality occured, fishing for game fish improved markedly in the lake. He does not know if a specific correlation can be made of this fact, but their department found it most interesting.

He also indicated that phosphates, by themselves, are not toxic. However, phosphates are one of the components that are found in the blue-green algae.

Carol

3-2-81

TAX TOPICS
Tax Topics is published monthly by Nevada Taxpayers Association, Inc., Ernest L. Newton, Executive Vice President. Office of Publication is 204 N. Fall Street, Carson City, Nevada 89701. Entered as second class mail at the Post Office at Carson City, Nevada. Subscription rate is $5.00 per year.

Re-Apportionment Plans Almost Ready

Nevada's second "big" problem for the 1981 Legislature (after tax reform) is to devise a program to apportion the territory for the state's two Congressional districts; and to re-apportion the legislative representation in the state. After disposing of some tongue-in-cheek proposals, allocation of territory for the Congressional representatives is fairly easy. The division of territory to be represented by 21 senators and 42 representatives is pretty well along. Below, and on pages following are the census figures on which the allocations will (POPULATION---Continued on Page 18)

Revised March 5, 1981

NEVADA POPULATION FIGURES BY COUNTY

COUNTY	1970[1]	1971[1]	1972[1]	1973[1]	1974[1]	1975[1]	1976[1]	1977[2]	1978[2]	1979[2]	1980[3]
Carson City	15,468	18,300	20,000	21,801	23,700	25,300	25,992	25,803	27,233	30,183	32,022
Churchill	10,513	11,100	11,500	11,849	11,900	12,000	11,992	12,117	12,506	13,311	13,917
Clark	273,288	286,700	295,800	307,849	321,100	330,700	345,302	378,947	417,300	450,000	461,816
Douglas	6,882	7,500	8,500	9,538	10,400	11,100	11,965	13,586	15,571	17,703	19,421
Elko	13,958	13,800	14,600	15,254	15,400	15,200	15,418	15,114	15,450	16,525[1]	17,269
Esmeralda	629	600	500	704	700	700	771	730	830	862[1]	777
Eureka	948	900	800	1,024	1,000	1,100	1,096	987	1,085	1,112	1,198
Humboldt	6,375	6,300	6,300	6,608	6,800	7,100	7,181	7,647	8,231	9,006	9,434
Lander	2,666	2,600	2,300	2,719	2,800	3,000	3,246	3,329	3,536	3,861	4,082
Lincoln	2,557	2,300	2,200	2,338	2,500	2,700	2,803	3,279	3,557	3,773	3,732
Lyon	8,221	9,200	9,500	10,042	10,300	10,400	10,578	10,342	10,726	12,537	13,594
Mineral	7,051	6,500	6,700	6,886	6,800	6,600	6,321	6,037	5,940	5,951[1]	6,217
Nye	5,599	4,900	4,700	5,141	5,300	5,600	5,953	6,420	7,400	7,994[1]	9,048
Pershing	2,670	2,600	2,500	2,559	2,500	2,700	2,803	3,119	3,229	3,356	3,408
Storey	695	700	700	881	900	1,000	1,053	1,103	1,167	1,310	1,459
Washoe	121,068	126,200	130,500	136,730	141,900	145,000	150,396	157,348	167,070	182,800	193,623
White Pine	10,150	10,000	10,300	10,001	10,000	10,100	9,796	8,274	8,369	8,310	8,167
STATE	488,738	510,200	527,400	551,924	574,000	590,300	612,666	654,182	709,200	768,594	799,184

[1] U. S. Bureau of the Census, 1970 U. S. Census; & Current Population Reports, Series P-25 and P-26, various issues; or Special Census.
[2] State Planning Coordinator's Office, revised estimates, some based on 1980 Census Preliminary Results and Special Censuses.
[3] U. S. Bureau of the Census, 1980 Census Advance Counts.

The State Counties Independent Cities County Subdivisions	PERSONS			HOUSING UNITS		
	1980	1970	Percent change 1970 to 1980	1980	1970	Percent change 1970 to 1980
The State	799,184	488,738	63.5	339,567	172,558	96.8
Churchill County	13,917	10,513	32.4	5,774	3,724	55.0
New River township	13,917	10,513	32.4	5,774	3,724	55.0
Fallon city	4,262	2,959	44.0	1,895	1,216	55.8
Clark County	461,816	273,288	69.0	190,223	93,047	104.4
Bunkerville township	492	244	101.6	149	71	109.9
Goodsprings township	1,003	314	219.4	276	134	106.0
Henderson township	24,334	16,410	48.3	8,882	4,921	80.5
Henderson city (pt.)	24,291	16,395	48.2	8,860	4,915	80.3
Las Vegas township	350,511	191,260	83.3	150,980	68,930	119.0
Henderson city (pt.)	72	...	...	29	...	...
Las Vegas city	164,674	125,787	30.9	67,133	43,064	55.9
Logan township	1,087	426	155.2	307	118	160.2
Mesquite township	922	674	36.8	302	211	43.1
Moapa township	702	353	98.9	199	103	93.2
Nelson township	10,059	5,674	77.3	4,320	2,097	105.0
Boulder City city	9,590	5,223	83.6	4,025	1,570	115.2
North Las Vegas township	70,334	56,241	25.1	23,682	15,756	50.3
North Las Vegas city	42,739	46,067	-7.2	14,123	12,481	13.2
Overton township	1,752	1,336	31.1	725	514	41.1
Searchlight township	620	356	74.2	401	192	108.9
Douglas County	19,421	6,882	182.2	9,399	3,205	193.3
East Fork township	14,053	3,867	263.4	5,909	1,342	340.3
Tahoe township	5,368	3,015	78.0	3,490	1,863	87.3
Elko County	17,269	13,958	23.7	7,667	5,313	44.3
Carlin township	1,280	1,356	-5.6	612	525	16.6
Carlin city	1,232	1,313	-6.2	559	502	11.4
East Line township	395	97	307.2	182	53	243.4
Elko township	11,398	8,931	27.6	4,717	3,209	47.0
Elko city	8,758	7,621	14.9	3,649	2,725	33.9
Jackpot township	809	...	...	477	...	...
Jarbidge township	33	32	3.1	98	79	24.1
Mountain City township	1,216	1,125	8.1	558	398	40.2
Tacoma township	231	221	4.5	131	111	18.0
Wells township	1,907	2,196	-13.2	892	938	-4.9
Wells city	1,218	1,081	12.7	535	375	42.7
Esmeralda County	777	629	23.5	368	422	-12.8
Esmeralda township	777	629	23.5	368	422	-12.8
Eureka County	1,198	948	26.4	605	370	63.5
Beowawe township	400	401	-0.2	199	133	49.6
Eureka township	798	547	45.9	406	237	71.3

The State Counties Independent Cities County Subdivisions	PERSONS			HOUSING UNITS		
	1980	1970	Percent change 1970 to 1980	1980	1970	Percent change 1970 to 1980
Humboldt County	9,434	6,375	48.0	3,828	2,388	60.3
Gold Run township	780	238	227.7	190	115	65.2
McDermitt township	1,159	1,086	6.7	452	302	49.7
Paradise Valley township	286	257	11.3	156	93	67.7
Union township	7,209	4,794	50.4	3,030	1,578	61.3
Winnemucca city	4,140	3,587	15.4	1,919	1,439	33.4
Lander County	4,082	2,666	53.1	1,666	907	83.7
Argenta township	3,646	2,252	61.9	1,421	735	93.3
Austin township	436	414	5.3	245	172	42.4
Lincoln County	3,732	2,557	46.0	1,685	1,043	61.6
Alamo township	1,126	398	182.9	398	118	237.3
Caliente township	1,054	979	7.7	506	367	37.9
Caliente city	982	916	7.2	443	326	35.9
Panaca township	758	539	40.6	322	182	76.9
Pioche township	794	641	23.9	459	376	22.1
Lyon County	13,594	8,221	65.4	5,815	2,922	99.0
Canal township	3,315	1,470	125.5	1,249	474	163.5
Dayton township	4,376	826	429.8	1,755	349	402.9
Mason Valley township	5,050	5,187	-2.6	2,427	1,842	31.8
Yerington city	2,021	2,010	0.5	912	745	22.4
Smith Valley township	853	738	15.6	384	257	49.4
Mineral County	6,217	7,051	-11.8	3,019	2,478	21.8
Hawthorne township	5,166	5,995	-13.8	2,540	2,067	22.9
Mina township	484	506	-4.3	279	242	15.3
Schurz township	567	550	3.1	200	169	18.3
Nye County	9,048	5,599	61.6	4,292	2,098	104.6
Beatty township	3,524	1,131	211.6	1,658	337	392.0
Gabbs township	912	1,000	-8.8	354	308	14.9
Gabbs city	811	874	-7.2	303	258	17.4
Pahrump township	1,358	963	41.0	596	308	93.5
Round Mountain township	574	215	167.0	342	181	89.0
Tonopah township	2,680	2,290	17.0	1,342	964	39.2
Pershing County	3,408	2,670	27.6	1,414	1,121	26.1
Lake township	3,408	2,670	27.6	1,414	1,121	26.1
Lovelock city	1,680	1,571	6.9	669	660	1.4
Storey County	1,459	695	109.9	726	361	101.1
Virginia township	1,459	695	109.9	726	361	101.1
Washoe County	193,623	121,068	59.9	86,051	44,722	92.4
Gerlach township	683	579	0.7	217	240	-9.6

The State Counties Independent Cities County Subdivisions	PERSONS			HOUSING UNITS		
	1980	1970	Percent change 1970 to 1980	1980	1970	Percent change 1970 to 1980
Washoe County - Con.						
Reno township	137,542	90,502	52.0	63,560	34,577	82.2
Reno city (pt.)	99,701	72,863	36.8	46,719	28,063	66.4
Sparks township	53,230	28,702	85.5	21,268	9,138	132.7
Reno city (pt.)	1,046	...	...	655	...	...
Sparks city	40,780	24,187	68.6	16,179	7,634	111.9
Verdi township	1,256	716	75.4	582	285	104.2
Reno city (pt.)	9	...	...	6	...	...
Wadsworth township	1,012	555	82.3	424	165	157.0
White Pine County	8,167	10,150	-19.5	3,664	3,339	9.7
Baker township	212	146	45.2	134	66	103.0
Ely township	7,599	9,686	-21.5	3,390	3,176	6.7
Ely city	4,882	4,176	16.9	2,140	1,478	44.8
Lund township	356	318	11.9	140	97	44.3
Carson City	32,022	15,468	107.0	13,371	5,098	162.3

(POPULATION -- Continued from Page 15)
designation of Clark County MINUS a selection of part of the area; or the designation of "all of Clark county south of the north line of the City of Las Vegas extended east and west."

The effort to re-apportion the Assembly and Senate will be somewhat more difficult, although the Research Division of the Legislative Counsel Bureau has a wealth of statistical data that should make it possible and even to reduce or eliminate the multi-seat districts that now are designated in Washoe and Clark counties. One proposal would be to have not more than two seats designated for a single Senate district, and have the two senators run in alternate elections.

Some legislators "have a dream" that if the tax reform package and the re-apportionment measures could be agreed upon promptly, the whole work of the legislature for the 1981 session could be accomplished in April.

C68

EXHIBIT D

April 9, 1981

SUBJECT: Phosphate-containing Detergents

I. CONSUMER DEMAND/PREFERENCE

Approximately 85% of detergent sales are contributed by those brands which contain phosphates.

In the early 1970's, there were many no-phosphate detergents introduced, with heavy advertising and emphasis on their no-phosphate formulations. Initial sales were good, however repeat purchases fell off to the point that most of these brands are no longer on the market. Those brands remaining no longer emphasize "no phosphates" on their packaging.

Some brands currently containing phospates:

TIDE
CHEER — These two brands alone comprise approx. 45% of sales.
BOLD
AJAX
COLD POWER
DASH
ALL
FRESH START
GAIN
WHITE KING 'D'

All automatic dish-washing detergents currently on the shelves would be banned, the best known and most widely used being Cascade.

Items that are currently stocked that do not contain phosphates are:

A. Granular Detergents

PUREX POWDERED DETERGENT
SUN POWDERED DETERGENT
PRIVATE LABEL DETERGENTS (eg: Bonnie Hubbard)
GENERIC DETERGENTS

B. Liquid Laundry Detergents

WISK
ERA

C69

DYNAMO
ALL
PRIVATE LABELS (eg: Bonnie Hubbard)

The liguids comprise approximately 10% of sales and the granulars about 5%. 90%

In areas where bans are currently in effect, figures of 5% - 10% are quoted as "bootleg" detergent use. With our proximity to California, we will stand to lose some sales to purchases in California, particularly in the Carson City, Douglas County area because of the number of people who work in the Tahoe area.

Most washing machine manufacturers recommend phospate detergents because of maintenance problems created by no-phospate detergents.

II. DISTRIBUTION

Most Nevada supermarket chains and many small independents are supplied from out-of-state warehouses and wholesalers. Eg:

ALBERTSON'S
ALPHA-BETA
LUCKY'S
MAYFAIR
RALEY'S
SAFEWAY
SMITH'S
THRIFTY-MART

All are principally supported by out-of-state warehouses.

These warehouses and wholesalers are located in Boise. Sacramento, Oakland, Salt Lake and Los Angeles areas.

Out-of-state warehouses would be required to handle duplications of phosphate and no-phospate brands, resulting in additional inventories, use of warehouse space and additional handling cost. The possibility of shipping errors would also increase which would add to costs for returns and credit.

Some large out-of-state wholesalers may be reluctant to add the needed items to supply smaller independent retailers in Nevada. If all needed items were not available, the result could be lost sales for the retailer.

JG/dlh

J.L. GILBERT
Nevada District Manager

EXHIBIT E

TO: Members of the Committee on Commerce

I am Donna Beth Downer, Dean of the School of Home Economics at the University of Nevada, Reno. As a home economist, a homemaker, and a citizen of Nevada, I am here today to offer my support for your concern for the resources of our state -- both human and physical.

I am a westerner by birth and a Nevadan by choice. Nevada is a beautiful state, and I join all others who do not want to see its beauty and its resources destroyed by man's thoughtless activities. However, other states have shared similar problems and resorted to measures similar to what is being proposed here. I thought you might be interested in how such measures could affect the human resources -- the families of Nevada.

The concern for the impact of phosphates on the lakes and streams of our country had its origins in the accelerated eutrophication of these waterways. Eutrophication is the fertilization of bodies of water through the accumulation of nourishing chemical elements. This process is a very natural one and only becomes cause for concern when it is speeded up by man's activities. Waste products -- human wastes, kitchen sewage, industrial wastes, and agricultural surface run-off -- contribute the nutrients which hasten the growth of algae and other aquatic weeds. This leads to unsightly appearance of water bodies, offensive odors, and a decline in fish and flora which are oxygen dependent.

Phosphates, the naturally occurring form of phosphorus, are one of the essential nutrients which contribute to the increased fertilization -- but research now shows that carbon and nitrogen are also needed. It has been suggested that several other elements may also have significant roles in the sustenance of algae. Further, studies conducted at Purdue and Cornell Universities indicate that phosphate detergent bans have resulted in no perceptible improvement in lake water quality.

Doing laundry seems like a relatively simple process. You put dirty clothes in hot water, add detergent, and start the machine. However, simple it may appear, it is a complex interactive process that is taking place and the crux or heart is the detergent. Phosphates are a principal ingredient in detergents. They and the surfactant, or surface active agent in getting clothes cleaner by tying up the calcium and nagnesium salts which contribute to water hardness. They also aid in emulsifying grease and oil, prevent the re-depositing of soil on the fabric, and prevent the depositing of hardness precipitates on fabrics and machine parts.

There are substitutes available. Chiefly sodium compounds, the substitutes have not performed with the same degree of efficiency and consequently have contributed to general dissatisfaction with laundering results as well as more specific problems.

What might the consumer expect if a ban on phosphate detergents is enacted? From research studies and experiences elsewhere, we can anticipate:

1) Less satisfaction with the results of the laundry process, specifically a return of the old "tattle-tale gray" that worried your mother! Whites and pastels gray, bright colors seem to fade, as limestone, or the hardness minerals, are deposited on fabric surfaces.

2) Impairment of permanent press and flame retardant finishes.

3) Reduced wear life of clothes - estimated to be as much as 15-20% -- because the deposit makes clothes more susceptible to abrasion.

4) Increased skin irritations and allergic reactions -- from the same cause.

5) A subjective feeling of harshness or stiffness in the clothes.

To compensate, consumers will use more bleaches, water softeners, large amounts of detergent -- adding to consumer costs for this very necessary household maintenance task.

In addition, the limestone or carbonate deposits do encrust the machinery, so consumers can expect reduced life expectancy and more service calls for the equipment. The increased costs to the consumer have been estimated to approximate $11 per year.

On a more personal note, I lived in Indiana for 15 consecutive months where a ban on phosphate detergents has been in effect since the early 70's. I know there were many unhappy homemakers who were calling the Cooperative Extension personnel in the counties and at Purdue University asking for help. The measures I mentioned above were suggested. But those living close to other states were doing something else: jumping in their car and going across the state line to buy the product they knew and wanted. It seems to me this action would be very possible in Nevada -- Truckee, South Lake Tahoe, are not that distant from us here in the Reno-Carson area. I ask the question -- are our laws really supposed to make us hypocrites?

Thank you for the opportunity to share this information with you.

* * * * * * *

April 1981

EXHIBIT F

TESTIMONY A.B. 147

Nevada

F.B. Anastasia, 4-9-81

Good afternoon, gentlemen. My name is Frank Anastasia and I'm from the Professional and Regulatory Services Section for the Packaged Soap and Detergent Division at the Procter & Gamble Company in Cincinnati, Ohio. My purpose here today is to provide perspective on why a major soap and detergent manufacturer opposes a phosphate detergent ban.

Procter & Gamble has been in business for over 140 years and has earned the reputation for marketing superior quality products that provide excellent consumer value. This is the foundation for our long-term success. When phosphate detergent bans are enacted, we are required to sell laundering products which simply do not provide the overall cleaning performance of phosphate detergents. Additionally, as Dean Downer has explained, residents in ban areas spend significantly more money in extra steps to get their clothes clean when phosphate detergents are not available. In net, we cannot sell products which provide the best market value to our consumers. Consumers no longer have the choice to select the best products, but now find only poorer performing alternative products which eventually cost them more money in the form of laundry additives, extra energy and fabrice and machine replacements.

I want to focus my comments today on the potential real loser when phosphate detergent bans are enacted. The real loser is the consumer. Perhaps when bans were first considered over a decade ago it was not entirely clear what impact they would have on consumers. This is not the case today. A host of real world

information exists which shows detergent phosphate bans remove laundry products from the marketplace which have overwhelming consumer preference, and bring significant hardships and costs ro residents doing home laundry.

First we know that in areas where there is no detergent phosphate legislation, consumers prefer phosphate detergents over available non-phosphate detergents by a 4 to 1 margin. To put this in your perspective, we feel that our detergents are going through an election every day. The election takes place in the supermarket where people have the opportunity to either purchase or reject a given product. I am sure that if a referendum were on the ballot and won by a 4 to 1 margin, you would fee that the voters had spoken loudly. Therefore, it shouldn't be surprising that we, as a manufacturer of consumer products, draw the same conclusion about consumer preference for phosphate detergents versus non-phosphate detergents.

There is a sound basis for this strong consumer preference. Phosphate detergents simply clean significantly better than non-phosphate detergents. This advantage is most evident in heavily soiled clothes, like kids' play clothes and the clothes of people who do manual labor for a living. Therefore, the demonstrated consumer preference for phosphate detergents does not surprise us. We believe the American consumer is pretty astute, and in the long run, the most successful consumer products will be those that do the best job for which they were intended. In the case of laundry detergents, phosphate

products are the clear winner.

Second, Dean Downer has shared information with you which has been collected in areas with and without phosphate detergent bans which show residents incur significant hardships and costs as a result of such bans. Much of the hardship and costs is associated with adjustments people make in their laundering process to try and get clothes clean when phosphate detergents are no longer available. Adjustments include the use of more detergent, laundering aids such as bleach, pretreatment products and fabric softeners, and more hot water. Since phosphate and non-phosphate detergents have a similar retail price, all of these adjustments result in added costs.

Finally, we have often heard proponents of bans say no one is unhappy when bans are passed. We don't believe it. When people are unhappy with a product they complain to the manufacturer; we know our consumers in phosphate ban areas are unhappy. Specifically, as a marketer of consumer products, we keep close watch on what our consumers are telling us. Between 1977-1979 we reviewed over 19,000 unsolicited consumer comments on the performance of our laundry detergents. Where phosphate detergents are sold, testimonials outnumbered complaints 2:1. On the other hand, in phosphate ban areas complaints outnumber testimonials by 9:1. To us, that's a pretty clear message -- consumers in ban areas are unhappy.

I believe our experience has been reflected in the position Home 377

Economists have taken on detergent phosphate bans. It is significant that every one of these professionals who we are aware of and who have testified in hearings this year and in the past, has opposed a ban. Additionally, at recent IJC hearings which considered such bans, 11 Home Economists provided submissions unanimously opposing a ban. I will be submitting copies of these letters and hope you will have time to read them. You will see that they also oppose bans because non-phosphate products are poorer in performance than phosphate products, and bans result in high costs to consumers.

I believe the evidence supporting the anti-consumer nature of A.B. 147 is overwhelming. Failure to consider it would not be in the best interest of Nevada residents.

Other testimony provided today shows that a phosphate detergent ban cannot improve water quality. It can affect the many small, local supermarkets in the State. It will result in increased laundry costs to consumers and particularly those with large families and breadwinners involved in manual work.

In summary, when the facts are reviewed, A.B. 147 does not qualify as a cost-effective regulation for the residents of Nevada. It will not improve water quality, but it will levy substantial penalties on consumers. I urge you to consider the facts presented here today objectively, and in particular with respect to the current economic burdens already imposed on your constituents.

Doing this, I hope you will vote pro-consumer on A.B. 147.

On behalf of Procter & Gamble I'd like to thank you for this opportunity to present our views.

EXHIBIT F-1 FBA

Whirlpool CORPORATION

Administrative Center

BENTON HARBOR, MICHIGAN 49022

April 10, 1979

Rev. Jerry A. Moore, Jr.
Chairman, Committee on
Transportation and Environmental Affairs
Council of the District of Columbia
Washington, D.C. 20004

Dear Rev. Moore:

On behalf of millions of consumers who own and use Whirlpool automatic washers, I'd like to describe some of the impacts of a ban on phosphates in home laundry detergents.

Based on our research at Whirlpool Corporation and our contact with consumers, educators and the textile industry, this is a general summary of consumer problems encountered with non-phosphate detergents:

1. Consumers report poorer washability than with phosphate-containing detergents. Satisfactory washing can only be achieved with special pre-treatment and if water is hard, by using an installed water softener. Our detergent chemists have analyzed and evaluated liquid, no-phosphate laundry detergents and have found them to be poorer in washing performance and higher in cost per wash than currently available low phosphate powdered detergents.

2. Consumers report higher costs for home laundry with all non-phosphate detergents because of the need to use special pre-treatment products, additional laundry additives, water softeners or conditioners, increased water usage and extra energy needed for rewashing or use of extra washer cycles (such as pre-soak or pre-wash).

3. Consumer and laboratory reports show very poor solubility of powdered, carbonate non-phosphate detergents in cold water (temperatures lower than 70°F). Consumers who want to use cooler water temperatures for washing must change their laundry practices and use liquid detergents. Current usage of detergents is about 80% powdered and 20% liquid.

4. Consumers complain of poor rinsing of detergents from textiles in harder water (above 4 grains per gallon) resulting in potential skin irritations. Clothes feel stiff, harsh and have a powdery residue.

5. In 1975, no-phosphate detergent problems were 24.3% of our total customer washability problems. In 1978 this percentage increased to 52.5% of customer washability problems. While the total number of washability problems has increased only slightly since 1975, the percentage of washability problems directly attributable to no-phosphate detergent usage has more than doubled.

Some of the known effects which consumers can expect from non-phosphate laundry detergents include:

1. Powdered carbonate non-phosphate detergent residue on flame retardant cotton fabrics can render them flammable. Many families will have cotton flame retardant childrens' sleepwear in their laundry baskets. Safety hazards to young children, caused by conflicting legislation, are difficult to justify when based on known water research. Limestone-type residues on fabrics can be avoided if the homemaker will change her practices to use one of the citrate liquids.

2. Powdered carbonate non-phosphate detergent residues on textiles and surfaces of automatic washer components can result in abrasion, damage and early wear out of fabrics. Costs to the consumer in hard water areas can be extremely high. Textile manufacturers and retailers report cutting of sewing threads, especially in elasticized areas, as well as build-up of deposits on seams and fabric surface, causing apparent color change and abrasion of garments. Reduced wear life to textiles in hard water areas has been reported in the literature to be 15-20%. This can be a high cost to consumers, especially those with large families.

3. I have samples of damaged machine parts, as well as clothing samples from homes of Whirlpool consumers who were using non-phosphate detergents. The cost to replace washer parts which fail most frequently from calcium carbonate build-up (filters and pumps and in very hard water, agitators and baskets) falls in a range of $35-59. Throughout the U.S., this cost has occurred with consumers who provided the failed parts within 1 to 4 years of use for their automatic washers.

4. Most appliance manufacturers do not have detailed service data on appliances after the warranty period. However, based on reports from our engineering tests and our field service organization, increased service costs can be expected to occur after the warranty period, with the consumer paying the costs. An average service call for major home appliances in the U.S. is $30.00, plus the cost of parts. In very hard water areas (such as 30+ grains per gallon in Indiana) where the customer uses only carbonate non-phosphate detergents, this could mean increased annual service costs for coated agitators and baskets and clogged filters and pumps.

The performance, safety and added cost aspects of non-phosphate detergents are strong consumer negatives which should be carefully weighed in any proposal to ban phosphorous in laundry detergents.

To summarize our concerns, these are the factors which many consumers will face if phosphorous in laundry detergents is banned:

1. More energy required for the same kind of washing results seen with phosphate detergents.

2. Added cost to the consumer.

3. More potential service calls where water is hard.

4. Clothing may have to be replaced sooner.

5. Added economic hardship on those least able to afford it.

As manager of Customer Assurance Home Economics, it is my job to represent consumers and provide information on their problems, wants and needs to all other company departments. We are vitally concerned about the impact of proposed phosphate detergent regulation on consumers.

A review of some of the attached information will help you understand our concern. Consumer problems from the phosphate ban in Michigan began surfacing after three to four months. These consumers did not complain to the Department of Natural Resources personnel nor the Governor. They send their bundles of laundry to "logical" sources of help -- the manufacturer of their appliance, detergent or garments. Many of them are also calling their County Extension home economist, utility home economist, or the local home economics teacher -- all of whom ask for assistance from people like me.

Any proposal to ban phosphorous in laundry detergents should be carefully weighed for costs vs. benefits:

- Energy trade-offs. The need to use hotter water to make up for loss in detergency.

- Economic trade-offs. The inflationary cause -- effect relationship of poorer detergency = more additives + more re-washing = earlier fabric wear-out = faster replacement + the potential added cost for washer service and parts.

- Delay of water treatment. Controlling 17% or less of the total phosphorous going into water treatment plants creates the false impression that a water quality problem has been solved -- when it has, in fact, touched on only one small portion of only one nutrient.

Please consider these factors in your total analysis of the consumer impact of a phosphate ban.

Sincerely,

Joy Schrage
Manager
Customer Assurance
Home Economics

cc: Mrs. Anne Snodgrass

bcc: Mike Madsen
Bob Singer

April 20, 1979

The Honorable Jerry A. Moore, Jr.
Chairman, Committee on Transportation
and Environmental Affairs
Council of the District of Columbia
Washington, D. C. 20004

Dear Mr. Moore:

It has been brought to my attention that both your committee and the Soap and Detergent Association have used "A Comparison of Phosphate and Non-Phosphate Detergents" (Avery and Harabin, 1975) in support of your respective positions regarding a proposed ban of phosphate detergents in Washington, D. C.

According to the information I have received, the portion of the study you have quoted refers primarily to differences in reflectance. I would like to remind you that the data concerning yellowing is much more critical of non-phosphate detergents.

> "All fabrics laundered with non-phosphate detergents were significantly more yellow (25%) than those laundered with the high phosphate products."
>
> "The non-phosphate detergents were less successful than the phosphate detergents in sequestering minerals (manganese and iron) known to cause yellowing."
>
> "The results were not satisfactory and the presence of hard water . . . is likely to compound the problem."

Phosphate detergents are the safest and most effective cleaning agents yet formulated, and I sincerely hope you will reconsider your position.

Yours truly,

Carol E. Avery, Ph.D.
Assistant Professor
Textiles, Clothing and
Related Art Department
University of Rhode Island
CEA/vmm

cooperative EXTENSION SERVICE • STATE OF INDIANA

PURDUE UNIVERSITY,
and the
U. S. DEPARTMENT of
AGRICULTURE cooperating
Lafayette, Indiana 47907

MAY 4 1979

May 1, 1979

Mr. Jerry Moore, Jr. Chr.
Committee on Transportation
and Environmental Affairs
Council of the District of Columbia
Washington, D.C. 20004

Dear Mr. Moore:

It has been called to my attention that you are interested in the consumer reaction to non-phosphate detergents in Indiana.

Our county extension home economists as well as our state extension specialists have received numerous calls on laundry problems since the phosphate ban on detergents. The consumer problems relate to grayed and dingy clothes, white deposits in the washing machines and clogged drains. Many people use excessive amounts of detergent in an attempt to get cleaner clothes. This contributes to the problems that are difficult to document. Personally speaking, I suspect that many consumers are purchasing detergents outside of Indiana.

In June, a colleague and I plan to survey some Indiana consumers to determine what their current laundry practices are. If you are interested, we would be happy to share the results with you.

Sincerely,

Suzanne Badenhop

Suzanne Badenhop
Extension Specialist
Equipment and Housing

SB/ml

C85

April 8, 1979

Reverend Jerry A. Moore, Jr.
Councilmember at Large
Council of the District
of Columbia
Washington, D.C. 20004

Dear Reverend Moore:

I am writing in regard to correspondence to you from Terry Hoffman, the Executive Director of the Minnesota Pollution Control Agency. The letter reported on laundry surveys conducted by the University of Minnesota Agricultural Extension Service. I did direct the surveys and would like to give you some additional information. The first of the two surveys mentioned in the letter was a pilot to establish consumer practices prior to the change over to nonphosphate detergent. The second of the two surveys mentioned was completed six months after the phosphate free detergent usage. We have completed a third survey after one-and-one-half years of phosphate free detergent usage. I would like to give some comments on the differences we found between the six month usage and one-and-one-half year usage.

Consumer satisfaction was to be determined by (a) perceived laundry problems, (b) changes in laundry practices and product used, and (c) reason given for change in practices and products used.

- Respondents were asked to give an overall rating of their satisfaction laundry. In 1977, after six months of usage 84.5 percent rated their laundry as good or excellent; in 1978, the results were similar.

- In 1977, 23.7 percent of the respondents had problems; in 1978, 40 percent had problems. The analysis of variance statistic indicated that there was a significant relationship between perceived problems and the characteristics of wash loads containing kids dirty clothes and the number of loads per week done in cold water.

- We did find an increase in the use of bleach and presoak products. The data for this is from three years with the first year given by recall. For bleach, in 1976, 64 percent; in 1977, 63.5 percent; in 1978, 80 percent. Presoaks, in 1976, 20 percent; in 1977, 27.5 percent; and in 1978, 55 percent. The amount of soaking and pretreating remained the same from 1976 to 1978 with the exception that there was significant increase in the amount of soaking by those households with hard water.

Consumers are experiencing more problems and are using laundry aids (bleaches and presoaks) which are usually used with problems. These products add to the cost of doing laundry and do require some additional time in the laundry process. We also noted a definite decrease in the use of heated water. (See Attachment - Chart IV)) We had fewer respondents using hot water and by those using hot water fewer loads were done per week. We did not have an increase in the use of cold water.

I am enclosing a copy of a presentation summarizing the survey; please do not hesitate to contact me.

Sincerely yours,

Wanda W. Olson
Extension Specialist
Household Equipment

WWO/bh

enclosure: one

DEPARTMENT OF DESIGN AND ENVIRONMENTAL ANALYSIS
MARTHA VAN RENSSELAER HALL
CORNELL UNIVERSITY
ITHACA, NEW YORK 14853

APR 19 1979

April 17, 1979

Mr. Jerry A. Moore, Jr.
Chairman
Committee on Transportation and
Environmental Affairs
Council of the District of Columbia
Washington, DC 20004

Dear Mr. Moore:

Dr. Keith Booman has informed me that you are seeking information on the effects of banning phosphates from laundry detergents. He suggested that I write to you about the impact of such a ban on families.

My responsibilities at Cornell University include teaching about detergents and laundering to students on campus and to the public through Cooperative Extension programs. It is from that background and experience that I write this letter.

One of the great liberators of women from heavy household work has been the automatic washer. Its success, however, was dependent on the development of synthetic laundry detergents. From their beginning, heavy-duty laundry detergents relied on polyphosphates to perform certain functions. Although other compounds can replace phosphates for some of these functions, the substitutes used in non-phosphate detergents are inadequate for preventing redeposition of soil, controlling hardness ions in water, and preventing iron stains.

The effects of the ban of phosphorus compounds in laundry detergents has been general deterioration of the appearance of white fabrics, greater expenditures for laundry products, and more work required to do the washing.

Without phosphates, there is more soil redeposited on fabrics during the wash. The result is a general graying of the fabric. The problem is especially severe for synthetic fibers, which currently make up a large portion of the family wash, and for laundry loads that are heavily soiled. The latter are typical for families with small children and many low income families.

Substitutes for phosphates do not equal the polyphosphates in controlling hardness ions in water. This is less important in low hardness areas, such as

Washington. However, without phosphates, detergents cannot remove soap curd that has accumulated in towels and wash cloths and that holds other soil and discolors the fabric.

Iron in water, even as little as 0.2 parts per million, causes yellowing of white fabrics. Polyphosphates used in detergents are able to sequester small amounts of iron and prevent this discoloration.

Homemakers who have been forced to use non-phosphate detergents have developed various means of coping to compensate for the reduced cleaning. They may use more detergent per load or use more pre-wash products. They may do more pre-treatment of spots or more rewashing of clothes. In some cases, however, they have simply lowered their standards and accepted the poorer results.

To maintain standards of cleanliness with non-phosphate detergents requires greater expense for laundry products and/or more physical work and attention on the part of the person doing the washing. These are burdens that families should not be asked to bear.

If you are considering banning phosphates primarily to decrease the cost of water treatment, you may save tax dollars, but you may be simply shifting the expense for families. What they save in tax dollars, they may spend on additional detergents and cleaning products.

I feel that it is short sighted to ban the sale of detergents containing phosphates. The ban puts consumers at a definite disadvantage and the benefits, if any, of the ban are small in relation to difficulties that result.

If I can be of further help in providing information to you, please feel free to contact me.

Sincerely,

Mary E Purchase

Mary E. Purchase
Professor

cc: K. Booman

MEP/ec

UNIVERSITY OF CALIFORNIA, DAVIS

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO SANTA BARBARA • SANTA CRUZ

COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATION
DIVISION OF TEXTILES & CLOTHING

DAVIS, CALIFORNIA 95616

October 31, 1978

Keith A. Booman, Technical Director
The Soap and Detergent Association
475 Park Avenue South
New York, New York 10016

Dear Dr. Booman:

I am responding to your letter of September 22 at Dr. Morris' request.

Our study did not allow any build-up of carbonate on the laundering equipment (Terg-O-Tometer) since the beakers and agitators were cleaned thoroughly between cycles. However, we do consider our results consistent with yours with respect to the effects of carbonate detergents on fabrics. If we assume that the rate of abrasion is linear (this appears valid within the limits of our study) we estimate a 25 to 30% reduction in wear life due to the use of carbonate detergents under hard water (300 ppm) conditions. It seems safe to assume that deposits on the laundering equipment would lead to even greater reduction in wear life. As in your study, these results apply to 100% cotton fabrics with a resin finish. The nylon fabric in our study did not show abrasive damage but did have increased harshness and shrinkage when laundered with carbonate detergent in hard water.

If we can be of any further assistance please do not hesitate to contact us.

Sincerely,

Harriet H. Prato

Harriet H. Prato
Staff Research Associate

Statement to

INTERNATIONAL JOINT COMMISSION, U.S. and CANADA

on

Phosphorus Management Strategies for the Great Lakes

by

M. V. Peart, Ph. D., Associate Professor

Purdue University, West Lafayette, IN 47907

The 1973 phosphate detergent ban in Indiana has been costly to many families. When the ban was put into effect, surveys we made showed that consumer complaints centered about poor cleaning and spot removal, odor on clothes, skin irritations and a build-up of detergent residue on clothes and washers. The adaptations families have made to cope with these problems include using more detergent and laundry products such as spot removers, presoaks, packaged water softeners and bleaches. More mechanical water softeners were installed, and a number of people began and maintained the practice of bringing phosphate detergents across the state lines. Liquid detergents usually alleviate skin irritation problems caused by carbonate detergent build-up on clothes, but prove to be less effective where moderate to heavy soil must be dealt with. The costs to families of these adaptations have been significant in terms of dollars, time and effort.

The families who encounter the most problems with a phosphate detergent ban are those where there are babies or children, where family members get clothes grimy and dirty (farm and factory workers), those who have hard water and no water softeners. People rarely seemed to believe their detergents were at fault. The adverse effects of a phosphate detergent ban are not thoroughly aired in a way that attracts the attention of and educates the people who are most adversely affected. The ban in this way is a hoax. The costs are placed on an unsuspecting public with no prior attempt to assess the total impact.

The order of actions in Recommendation No. 4 surely must be reversed so that the costs to families are assessed prior to extending the ban.

11/14/80

M. V. Peart

COOPERATIVE EXTENSION SERVICE

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
4200 West Euclid Avenue, Rolling Meadows, IL 60008, Phone 312 991-1160

November 19, 1980

International Joint Commission
U. S. Section
1717 H Street, N. W. - Suite 203
Washington, D. C. 20440

Dear Sirs:

I am writing your commission to express some views that I have encountered with consumers concerning the disbenefits associated with phosphate detergent ban regulations and laws. As an Extension Home Economist, I did some research and writing for a sound non-partisan program presentation on phosphate-non-phosphate detergent controversy titled an "Update On Wash Day Grays." This program was presented to approximately 700 consumers in a group called "Suburban Cook County Homemakers Extension Association." The same information was presented on a radio-talk show, to consumers who called the Extension Office to solve washing problems with non-phosphate detergents, and to individuals where a home visit by me was needed to solve washing problems with non-phosphate detergents. The Chicago Suburban area is a geographic area with hard water.

From these many consumer contacts the following problems with using non-phosphate detergents were shared with me;

1. Film deposits or detergent build-up in clothes are becoming quite a problem.

2. White clothes are not getting white enough when washed.

3. The washer and plumbing are becoming encrusted due to residue build-up.

4. Individuals are suffering from skin irritations on all parts of their body.

Even though I am aware of other concerns and problems related to use of non-phosphate detergents, except citrate builders, those stated above are the most popular quoted ones from our consumers to me.

To overcome these problems with non-phosphate detergents in hard-water, the consumer has these following alternatives to improve laundry results, life of clothing, and household linens, and life of automatic washers.

1. Increase the amount of non-phosphate detergent used.

2. Purchase, install, and maintain a mechanical water softener.

3. Purchase and use additional laundry additives and pre-treatment products.

4. Purchase non-precipitating package water softener.

5. Rewash laundry with liquid non-phosphate detergents, if adequate pre-treating and amounts of detergent are not used to remove soil or if film deposits develop. At times, it is recommended for the consumer to wash the clean garments again without use of detergents, so as to help remove deposit build-up.

6. Use vinegar in machine wash cycle in small amounts to remove residue build-up in washer resulting from use of non-phosphate detergents. But this method should be exercised with caution since vinegar will attack the porcelain.

All these factors that are done to have a clean laundry and longer lasting wash machine life using non-phosphate detergents contribute to a big concern----"high costs to the consumer over a long period of time." It's ironic that this costliness is affecting consumers when costs have been increasing for energy use, and consumer products and services.

It would be interesting to study the costs, money and energy wise, on the benefits and disbenefits of consumers using non-phosphate detergents. I certainly hope the commission finds these consumer problems interesting to consider when deciding to ban or not to ban phosphate detergents in other states surrounding the Great Lakes Region.

Sincerely,

Katherine L. Jarrell

Katherine L. Jarrell
Extension Adviser,
Home Economics

KLJ/jb

UNIVERSITY OF WISCONSIN-EXTENSION

COMMUNITY PROGRAMS

WALWORTH COUNTY
UNIVERSITY EXTENSION
STAFF

Agri-Business Agent
Agricultural Agent
4-H Youth Agent
Home Economist - Nutrition
Home Economist
Recreation Agent
Senior Citizen Coordinator
Phone (414)723-3838

WALWORTH COUNTY
AGRICULTURE and EXTENSION
EDUCATION COMMITTEE

Courthouse, Elkhorn, Wisconsin 53121

November 19, 1980

International Joint Commission
U.S. Section
1717 H Street N.W. - Suite 203
Washington, D.C. 20440

Re: Phosphorus Management Strategies for the Great Lakes

Dear Sirs:

I am an Extension Home Economist based in Walworth County, Wisconsin. As such, I have contact with individuals and families throughout our County.

In the last two years I have received numerous questions regarding laundry problems. Most are concerned because their past laundry methods are no longer giving desired results.

Solving their concerns usually means the use of additional laundry products. This added cost plus the potential added wear on laundry equipmentdoes not seem justified when one considers all of the sources of phosphorus in our environment.

Many communities have upgraded their sewage treatment plants to eliminate the harmful chemicals from waste. Why then should phosphates be eliminated from detergents? The homeowner pays for the improved sewage plant and also for the added costs in laundry.

Improved sewage treatment plants would eliminate undesirable elements from the waste from most of the sources. This seems the desired route rather than eliminating phosphates from just one source.

Sincerely,

Virginia T. Hall
Extension Home Economist

VTH:ce

OSU

Cooperative Extension Service
The Ohio State University

Putnam County
219 S. Oak Street
Ottawa, Ohio 45875

Phone 419-523-6294

Box 189
Ottawa, Ohio 45875
December 1, 1980

International Joint Commission
U.S. Section
1717 H. Street, N. W.
Suite 203
Washington D.C. 20440

Dear Sir:

As an Extension Home Economist working with families throughout the county I serve, I'm writing you about a concern we have in regard to detergents.

The phosphorus story keeps surfacing time and time again. It appears as though the only thing that is ever said or told about them is on the negative side. Why isn't something done to tell the positive side of the story and also the need for them? Phosphorus has a real need for being a part of the makeup of detergents because of their abilities for doing thorough cleaning at approximately one fourth or less the cost than what other cleaning agents have. If proper treatment is done at the treatment plants, again where cost can be considerably less than elsewhere, phosphorus will not cause harm or damage that environmental people like to talk about.

Families are facing real economical crises today, the worst many have ever known. Adding costs to the cleaning of clothes, furnishings and a host of additional things in and around the home only contributes that much more stress on the family as well as to the strain on the family budget. Doesn't anyone really care about what's happening to the family any more?

Please give this some serious thought and consideration. Should you like further information, please do feel free to contact me.

Sincerely,

Virginia I. Zirkle
County Extension Agent,
Home Economics

VIZ:blk

Cooperative EXTENSION SERVICE • STATE OF INDIANA

and the
U. S. DEPARTMENT of
AGRICULTURE cooperating
West Lafayette, Indiana 47907

December 1, 1980

International Joint Commission
United States and Canada
Phosphorus Management Strategies for the Great Lakes
U. S. Section
1717 H Street, N. W. - Suite 203
Washington, D.C. 20440

To Whom It May Concern:

It has come to my attention that the International Joint Commission welcomes comments on the subject of phosphorus management strategies for the Great Lakes basin. As an Extension textiles specialist at Purdue University, I am in an opportune position to observe some of the effects of the legislative ban on the sale of phosphate-built detergents as one such strategy adopted in Indiana. The following observations are based on my experience in helping consumers deal with clothing and textile related problems that have been associated with the use of non-phosphate detergents.

* Consumer calls indicate that apparel and household textiles take on a grayed, dingy and boardy condition with the use of non-phosphate detergents, especially in areas of highest water hardness levels. (See enclosed specimen.)

* A number of calls to Extension offices have been for the purpose of requesting procedural directions for removal of carbonate residue from interior surfaces of washing machines.

* Complaints about abrasive wear that occurs on the edges of collars, cuffs and garment creases have seemed to have some relationship to a build-up of carbonate residue on the interior surfaces of washers.

* An increase in the frequency of calls which relate to the use of auxiliary laundry products indicates that consumers are resorting to usage of these products in an attempt to compensate for the lowered efficiency of the laundry system which is associated with the use of non-phosphate detergents.

* The problem of inefficiency of laundry systems is further complicated by the trend toward use of lowered wash temperatures to conserve energy.

With current increases in the costs of clothing and the reduction in discretionary dollars available for clothing purchases, optimizing the cleaning efficiency of laundry systems becomes quite important to consumers, especially to those of limited means. Thus, in view of the potential disbenefits related to clothing consumption, it would seem that phosphorus management strategies other than the control of the phosphorus content of detergents might deserve serious consideration.

Yours very truly,

Jean Goodrick

Jean Goodrick, Ph.D.
Extension Specialist
Textiles

sa

Enclosure: Exhibit speciman of man's T-shirt which has been laundered with non-phosphate detergent in hard water. The consumer who supplied the item is a professional home economist who is knowledgeable of procedures for optimizing laundry efficiency under the existing conditions.

cc: Dr. Dama Wilms
Dr. Fern Rennebohm

November 18, 1980

International Joint Commission
United States Section
1717 H Street, NW
Washington, D.C. 20440

Dear Sirs:

While I am not able to attend one of the public hearings on "Phosphorous Management Strategy for the Great Lakes Basin", I would like to submit written remarks for the record about the use of phosphorous in home laundry detergents.

My name is Joy Schrage. I am Manager of Customer Assurance Home Economics at Whirlpool Corporation in Benton Harbor, Michigan. I want to outline for you some of the effects a laundry detergent phosphate ban has on consumers.

During the past 20 years, I have worked as a home economist in education, Cooperative Extension Service, manufacturing, utility home service, laundry research and industry consumer affairs. In all of these professional positions, it has been my job to communicate with consumers and represent their interests to my employers.

At Whirlpool Corporation, it is my job to represent consumers and provide information on their problems, wants and needs to all other company departments. We are vitally concerned about the impact of detergent phosphate regulation on consumers.

Based on our research at Whirlpool Corporation and our contact with consumers, educators and the textile industry, this is a general summary of consumer problems encountered with non-phosphate detergents:

1. Consumers report poorer washability than with phosphate-containing detergents. Satisfactory washing can only be achieved with special pre-treatment and if water is hard, by using an installed water softener. Our detergent chemists have analyzed and evaluated liquid, no-phosphate laundry detergents and have found them to be poorer in washing performance and higher in cost per wash than currently available low phosphate powdered detergents.

2. Consumers report higher costs for home laundry with all non-phosphate detergents because of the need to use special pre-treatment products, additional laundry additives, water softeners or conditioners, increased water usage and extra energy needed for rewashing or use of extra washer cycles (such as pre-soak or pre-wash).

3. Consumer and laboratory reports show very poor solubility of powdered, carbonate non-phosphate detergents in cold water (temperatures lower than 70°F). Consumers who want to use cooler water temperatures for washing must change their laundry practices and use liquid detergents. Current usage of detergents is about 80% powdered and 20% liquid.

4. Consumers complain of poor rinsing of detergents from textiles in harder water (above 4 grains per gallon) resulting in potential skin irritations. Clothes feel stiff, harsh and have a powdery residue.

5. In 1975, no-phosphate detergent problems were 24.3% of our total customer washability problems. In 1980 this percentage increased to more than 50% of customer washability problems. While the total number of washability problems has increased only slightly since 1975, the percentage of washability problems directly attributable to no-phosphate detergent usage has more than doubled.

Typical problems from use of non-phosphate laundry detergents include:

1. Powdered carbonate non-phosphate detergent residue on flame retardant cotton fabrics can render them flammable. Many families will have cotton flame retardant childrens' sleepwear in their laundry baskets. Safety hazards to young children, caused by conflicting legislation, are difficult to justify when based on known water research. Limestone-type residues on fabrics can be avoided if the homemaker will change her practices to use one of the citrate liquids.

2. Powdered carbonate non-phosphate detergent residues on textiles and surfaces of automatic washer components can result in abrasion, damage and early wear out of fabrics. Costs to the consumer in hard water areas can be extremely high. Textile manufacturers and retailers report cutting of sewing threads, especially in elasticized areas, as well as build-up of deposits on seams and fabric surface, causing apparent color change and abrasion of garments. Reduced wear life to textiles in hard water areas has been reported in the literature to be 15-20%. This can be a high cost to consumers, especially those with large families.

3. I have samples of damaged machine parts, as well as clothing samples from homes of Whirlpool consumers who were using non-phosphate detergents. The cost to replace washer parts which fail most frequently from calcium carbonate build-up (filters and pumps and in very hard water, agitators and baskets) falls in a range of $35-59. Throughout the U.S., this cost has occurred with consumers who provided the failed parts within 1 to 4 years of use for their automatic washers.

4. Most appliance manufacturers do not have detailed service data on appliances after the warranty period. However, based on reports from our engineering tests and our field service organization, increased service costs can be expected to occur after the warranty period, with the consumer paying the costs. An average service call for major home appliances in the U.S. is $30.00, plus the cost of parts. In very hard water areas (such as 30+ grains per gallon in Indiana) where the customer uses only carbonate non-phosphate detergents, this could mean increased annual service costs for coated agitators and baskets and clogged filters and pumps.

The performance, safety and added cost aspects of non-phosphate detergents are strong consumer negatives which should be carefully weighed in banning phosphorous in laundry detergents.

To summarize our concerns, these are the factors which many consumers face with carbonate non-phosphate detergents:

1. More energy required for the same kind of washing results seen with phosphate detergents.

2. Added cost to the consumer.

3. More potential service calls where water is hard.

4. Clothing may have to be replaced sooner.

5. Added economic hardship on those least able to afford it.

I appreciate the opportunity to provide you with this consumer information as you evaluate optimum techniques for managing phosphorous in the Great Lakes Basin.

Sincerely,

Joy Schrage, Manager
Customer Assurance
Home Economics

si

Written Statement to the
International Joint Commission, United States and Canada
Hearing on Phosphorus Management Strategies for the Great Lakes
November 19 and 20, 1980

PERFORMANCE CHARACTERISTICS OF PHOSPHATE AND NONPHOSPHATE LAUNDRY DETERGENTS

B. J. Rutkowski
Senior Research Chemist
Whirlpool Corporation
Benton Harbor, Michigan 49022

STATEMENT SUMMARY

Performance Characteristics of Phosphate and Nonphosphate Laundry Detergents

On the basis of extensive tests and evaluation studies of laundry detergents conducted in our laboratories, we anticipate many consumers will observe a noticeable decrease in the quality of their home laundering should they be forced to change from a phosphate to a nonphosphate detergent. Our studies have shown nonphosphate detergents, including carbonate built granular products, and built and unbuilt liquids, give, in general, poorer washability than do phosphate build detergents.

In addition to decreased cleaning performance, nonphosphate detergents have disadvantages in other areas. Our test data indicate that carbonate built granular products (the dominant product currently used in phosphate ban areas) if used in hard water, can make cotton, polyester/cotton and acrylic fabrics harsh and stiff, dull in appearance and more susceptible to abrasion damage. We have also shown that many nonphosphate detergents have poor solubility in cool or cold water, a serious deficiency should consumers wish to reduce costs or conserve energy. Unbuilt liquid detergents have the potentially serious disadvantage of requiring very high levels of surfactants, two to three times the amount present in powdered detergents. Because surfactants are petro-chemical based materials, availability and cost of unbuilt liquids will depend on future availability and cost of petroleum.

Of perhaps greatest importance are the results of our research studies which showed that acceptable fabric cleaning depends on a proper balance of chemical, mechanical and thermal energy (detergent, agitation, hot water). When thermal energy is reduced, as in the case of cold water washing for energy conservation, either chemical or mechanical energy must be increased. Since increased mechanical energy promotes fabric damage, higher chemical energy is the best way to improve cold water washing. Phosphate detergents, because they contribute more chemical energy to a wash system than do nonphosphates, have a very significant advantage for cold water washing.

The following is the complete text of my statement with supporting data and charts.

Thank You.

PERFORMANCE CHARACTERISTICS OF PHOSPHATE AND NONPHOSPHATE LAUNDRY DETERGENTS

My name is B. J. Rutkowski. I am a Senior Research Chemist in the Science Research Department at Whirlpool Corporation in Benton Harbor, Michigan. For the past 24 years I have worked in the field of detergent chemistry studying the chemical and physical mechanisms of the detergency process. In addition to conducting basic research studies, my major responsibility at Whirlpool has been to maintain an awareness of detergent formulation changes and of new formulations which could affect the performance of our product--automatic washing machines. I have done this through a continuing research program which includes an annual analysis and performance evaluation of representative samples of all currently available laundry detergents. On the basis of my extensive experience in the area of home laundry detergents I believe I am well qualified to speak on the relative performance characteristics of phosphate and nonphosphate laundry detergents.

In this report I will present a brief summary of the results of my most recent evaluation of detergents and, in addition, the results of a more basic detergency research study concerned with energy requirements in home laundering. On the basis of these and many similar studies, I have drawn certain conclusions regarding relative performance of phosphate and nonphospate detergents and the relationship of detergent performance to energy usage in a home washing machine.

For background information, the following is a very short description of heavy duty laundry detergents.

Table 1 lists the ingredients common to all "built" laundry detergents. The backbone of these products is the combination of surfactant and builder. The term surfactant comes from the words "surface active agent", which aptly describes the dominant physical action of a surfactant. The cleaning action of a surfactant is not based on chemical reaction, but on a unique method of adsorption or concentration on soil and fabric surfaces. This surfactant phenomenon permits fabrics and soils to rapidly wet-out and allows wash solution to penetrate between soil particles and fabric surface so soil can be removed. For several reasons, surfactants used in laundry detergents require the assistance of builders for optimum performance.

The characteristics of a good detergent builder are shown in Table 2. The top three listed here are the most important with the first--a synergism between builder and surfactant--appearing to be unique to phosphates.

Table 3 lists the chemicals that are currently, or may in the future be used as phosphate builder substitutes. Sodium carbonate is the dominant nonphosphate builder. Sodium citrate is used in only one product, liquid WISK. Neither sodium carbonate nor sodium citrate possess the characteristics of a good builder. Their primary function as a builder is only water hardness control. Surfactants more resistant to water hardness are not actually builders but are listed here because they reduce the need for controlling water hardness.

The only new builders on the horizon are carboxymethyl-oxysuccinate (CMOS) and sodium aluminosilicate (zeolite). The primary detergency function of both is water softening. They are inferior to phosphates, but have some advantages over the currently used sodium carbonate. The future of CMOS is unknown at this time. However, zeolite is presently being used as a phosphate replacement by Procter and Gamble in several, but not all, of their home laundry products.

Table 4 lists the usual amounts of the various ingredients in current powdered and liquid detergents. Surfactant and builder levels vary depending on builder type. Detergents containing nonphosphate builders may require higher surfactant levels because of poor builder performance. Unbuilt liquid detergents rely entirely on a very high surfactant level for their cleaning ability. Because surfactants are based on petrochemicals, the amount of surfactant used in detergents may become considerably more important in the future if the present shortage and high cost of oil continue to increase.

Washability performance data of the top selling major brand detergents are shown in Table 5. These data are the average percent soil removal values of eight phosphate brands and their nonphosphate counterparts. Performance data for these same brands obtained in 1969 (before phosphate restrictions) are also shown here to illustrate the magnitude of detergent performance loss in recent years. The soil removal data shown here were obtained using a rigorously controlled test procedure. Each detergent was tested at a higher than average use concentration in order to avoid poor performance due to under-use of detergent. These data illustrate the very significant loss in performance due to lower phosphate content of current detergents. Nonphosphate detergents are especially poor for cleaning polyester, today's dominant fiber type.

In addition to poor soil removal, nonphosphate detergents have other problems as shown in Table 6. Buildup of detergent hard water precipitates (detergent residues) on fabrics and on machine surfaces can be a major problem of carbonate built nonphosphate detergents. This residue makes fabrics stiff and harsh, gives them a dull grey appearance, makes them more susceptible to abrasion damage and renders flame retardant fabrics flammable. Buildup on machine surfaces can be severe enough to make certain machine components such as pumps and filters unoperative. It should be noted here that all major brand nonphosphate powdered detergents currently available are carbonate built and therefore have the potential to cause this problem.

The alkalinity of laundry detergents can be considered as a relatively important performance characteristic. Highly alkaline detergents may cause fabric discoloration under certain conditions, and may present an ingestion hazard for children. Our data show carbonate built nonphosphate detergents are generally more alkaline than phosphate built products. A few are very significantly more alkaline.

One characteristic of nonphosphate detergents that is rapidly becoming more important is their poor cold water solubility. More and more consumers are using cool or cold water for laundering as an energy and cost saving measure. This trend to cold water washing is expected to continue, and at a higher rate in the future. Thus, it is important that detergents have good cold water solubility. Our data show most nonphosphate detergents dissolve more slowly than do phosphate built products.

At the present time, cold water washing is perhaps the largest dilemma facing both detergent and washing machine manufacturers. The problem is how to clean fabrics in cold water. The magnitude of the problem is illustrated in Figure 1 which shows the average soil removal values of 6 major brand phosphate powdered detergents, their nonphosphate counterparts and of four major brand nonphosphate liquid detergents. The loss in performance is significant for all three detergent types.

One of the more important, but sometimes overlooked, characteristics of phosphate built detergents is the simplicity of their use. Homemakers may select either powdered or liquid phosphate built products and have only to use the proper amount to obtain good cleaning of all fabric types over a wide range of water hardness and wash temperature conditions. contrast, nonphosphate powdered and liquid detergents have certain characteristics which limit their best performance, regardless of dosage, to a relatively narrow range of conditions. For this reason, selecting the best nonphosphate product for specific laundering conditions can be difficult. Figure 2 illustrates the complexity of the situation. The information in Figure 2 was compiled as a guide for our Customer Assurance Department to assist our customers in detergent-type selection. In this figure I have identified the product type which, on the basis of my studies, I judge to be the better product for cleaning cotton and polyester fabrics under specified water hardness and temperature conditions. Notice that only in soft water would just one product type provide optimum cleaning of both fabric types under all temperature conditions. And even here, the poor cold water solubility of most nonphosphate powders must be considered.

As previously mentioned, I have conducted research studies on energy requirements of the washing process. Table 7 lists the three energy forms (chemical, thermal, mechanical) necessary in laundering. My objective in this work was twofold; the first was to determine the relative contribution of each energy form to washability, and the second was to determine the requirements for cold water washing. I found that chemical energy is the most important for cleaning polyester, and thermal energy is more essential to cleaning cotton. Figure 3 illustrates these findings. The top bars represent maximum cleaning of two fabric types under optimum conditions; i.e., adequate chemical, thermal and mechanical energy. The lower bars show the reduction in cleaning which results when chemical energy is reduced, thermal energy is reduced and when both chemical and thermal energies are reduced. Chemical energy can be reduced by using less detergent or by using a poor detergent. In these studies I also found that if one energy form was reduced then the level of one or both of the others had to be increased in order to maintain acceptable cleaning. For example, if thermal energy is reduced (lower water temperature), then chemical energy and/or mechanical energy must be increased (more detergent, a better detergent or a longer wash period). Because of potentially excessive fabric wear, and increased energy usage, prolonged washing is undesirable. Therefore, higher chemical energy is the better way to improve cold washing. Phosphate detergents, because they contribute more chemical energy to cleaning than nonphosphate detergents, more adequately meet the requirements for cold water washing.

In summary, the material I have presented in this report illustrates the deficiencies of nonphosphate laundry detergents in several performance areas: poor washability, poor cold water solubility, hard water precipitate buildup on fabrics and machine surfaces, and relatively high alkalinity. The most serious of these is poor washability, particularly in view of the fact cold or cool water washing is becoming a frequently used energy reduction method.

B.J. Rutkowski
Senior Research Chemist
Whirlpool Corporation
Benton Harbor, Michigan

LAUNDRY DETERGENT INGREDIENTS

SURFACTANT	The two most important ingredients. They remove and suspend soil.
BUILDER Phosphate Phosphate Substitutes	
SUDS CONTROL AGENT	Reduces foam of high sudsing detergents. Stabilizes foam of low sudsing detergents.
ANTI-REDEPOSITION AGENT	Helps to prevent "greying" of fabrics (cotton only).
ANTI-CORROSION AGENT	Protects washer parts from alkaline corrosion.
FLUORESCENT WHITENER	Adsorbed on fabrics from wash water. They convert invisible ultraviolet light to visible light, making fabrics appear brighter.
PERFUME	
PROCESSING AID OR "FILLER"	Usually sodium sulfate in powdered detergents and water in liquid detergents. Used to make detergents free flowing or to add bulk for easier measuring.

TABLE 1

FUNCTIONS OF DETERGENT PHOSPHATE

1. INCREASES THE ACTIVITY OF SURFACTANTS.
2. SOFTENS WATER BY SEQUESTERING CALCIUM IONS THAT CAUSE HARDNESS.
3. DISSOLVES PRECIPITATES OF HARDNESS IONS.
4. NEUTRALIZES FATTY ACID SOILS TO FORM A SOAP.
5. DISPERSES SOIL AGGREGATES INTO SMALL PARTICLES.
6. SUSPENDS SOIL PARTICLES.
7. EMULSIFIES OILY SOILS.

TABLE 2

DETERGENT PHOSPHATE SUBSTITUTES

CURRENTLY IN USE

- Sodium Carbonate
- Sodium Citrate
- Hardness Insensitive Surfactants
- Sodium Aluminosilicate

POTENTIAL

- Carboxymethyl-oxysuccinate (CMOS)

TABLE 3

DETERGENT FORMULATIONS

	BUILT DETERGENTS	
	POWDERS	LIQUIDS
*SURFACTANT	10 -30%	10 -17%
*BUILDER	20 -60	14 -19
CORROSION INHIBITOR	5 -15	3 -10
ANTI-REDEP. AGENT	0.5- 3	0.5- 1
SUDS CONTROL AGENT	0 - 5	-
FLUORESCENT WHITENER	0.2- 1	0.2- 1
PERFUME	0.1- 1	0.1- 1
PROCESSING AID OR "FILLER"	0 -50	40 -50 (WATER)

	UNBUILT LIQUIDS
*SURFACTANT	45-55%
TRIETHANOLAMINE	2- 8
ETHANOL	8-12
WATER	35-40

* MOST IMPORTANT COMPONENTS.

TABLE 4

LAUNDRY DETERGENT WASHABILITY PERFORMANCE

(AVERAGE SOIL REMOVAL DATA FOR TOP-SELLING MAJOR BRAND DETERGENTS)

DETERGENT TYPE	PERCENT SOIL REMOVAL (1) FROM COTTON	FROM POLYESTER
HIGH PHOSPHATE (1969)	104%	101%
LOW PHOSPHATE (1980)	85%	84%
NONPHOSPHATE (1980)	75%	68%

(1) PERCENT SOIL REMOVAL REPORTED RELATIVE TO THE SOIL REMOVAL OF AHAM STANDARD REFERENCE DETERGENT.

TABLE 5

NONPHOSPHATE DETERGENTS - PROBLEM AREAS

(AVERAGE DATA FOR TOP-SELLING MAJOR BRAND DETERGENTS)

	DETERGENT TYPE	
	PHOSPHATE	NONPHOSPHATE
DETERGENT RESIDUE BUILD-UP (1)	NONE	CAN BE HEAVY
ALKALINITY - pH	9.9	10.4
TOTAL ALKALINITY AS % Na_2CO_3	17.2%	27.1%
COLD WATER SOLUBILITY (2)	87%	75%

(1) WE HAVE FOUND THAT ALL NONPHOSPHATE DETERGENTS CONTAINING 20% OR MORE SODIUM CARBONATE CAN CAUSE MODERATE TO HEAVY RESIDUE BUILD-UP ON FABRICS AND MACHINE SURFACES.

(2) PERCENT SOLUBLE IN ONE MINUTE AT 10°C (50°F)

TABLE 6

ENERGY REQUIREMENTS IN LAUNDERING

CHEMICAL - DETERGENT

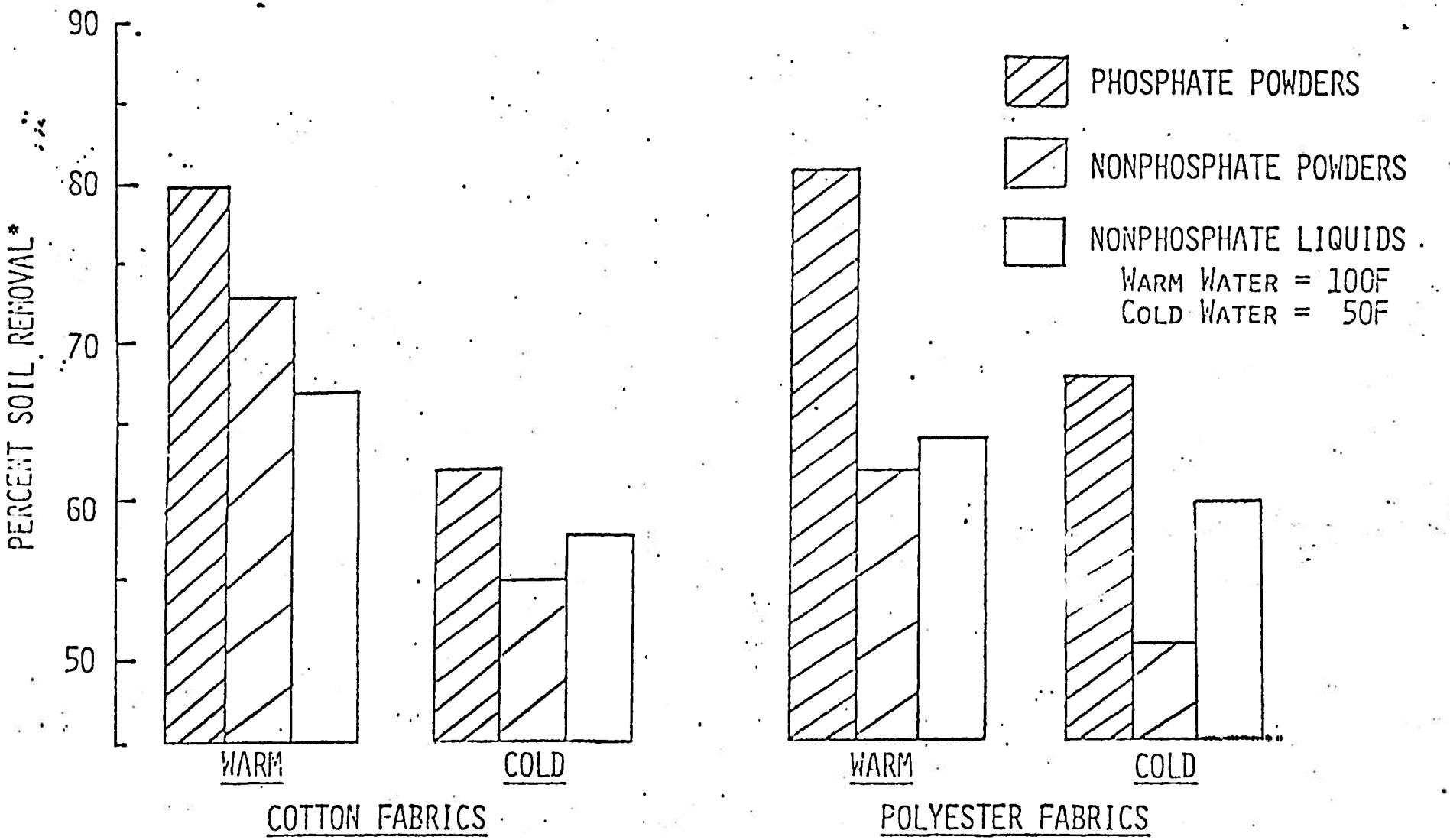
*THERMAL - WATER TEMPERATURE

MECHANICAL - AGITATION

*THE MAJOR ENERGY COMPONENT OF LAUNDERING.

TABLE 7

DETERGENT PERFORMANCE IN WARM AND COLD WATER
(MEDIUM HARD WATER)



*RELATIVE TO SOIL REMOVAL OF REFERENCE DETERGENT.

FIGURE 1

RECOMMENDED NONPHOSPHATE DETERGENT TYPE FOR SPECIFIED WATER HARDNESS AND TEMPERATURE

WATER HARDNESS	FABRIC	WASH TEMPERATURE: HOT	WARM	COLD
SOFT 0-4 GPG (0-70 PPM)	COTTON	POWDER	POWDER	POWDER OR LIQUID
	POLYESTER	POWDER	POWDER	POWDER
MED. HARD TO HARD 5-12 GPG (85-200 PPM)	COTTON	POWDER	LIQUID OR POWDER	LIQUID OR POWDER
	POLYESTER	POWDER OR LIQUID	LIQUID OR POWDER	LIQUID
VERY HARD OVER 12 GPG (OVER 200 PPM)	COTTON	POWDER	POWDER OR LIQUID	LIQUID
	POLYESTER	LIQUID	LIQUID	LIQUID

NOTES: A - FIRST NAMED PRODUCT MAY BE SLIGHTLY BETTER THAN SECOND.

B - POWDERED DETERGENTS MUST BE PREDISSOLVED FOR COLD WATER USE.

C - LOW CARBONATE POWDERS ARE RECOMMENDED FOR WATERS EXCEEDING 8 GPG (140 PPM) HARDNESS. IF RESIDUE BUILDUP IS A PROBLEM, LIQUIDS SHOULD BE RECOMMENDED.

FIGURE 2

RELATIVE EFFECT OF DETERGENT AND TEMPERATURE REDUCTION ON DETERGENCY

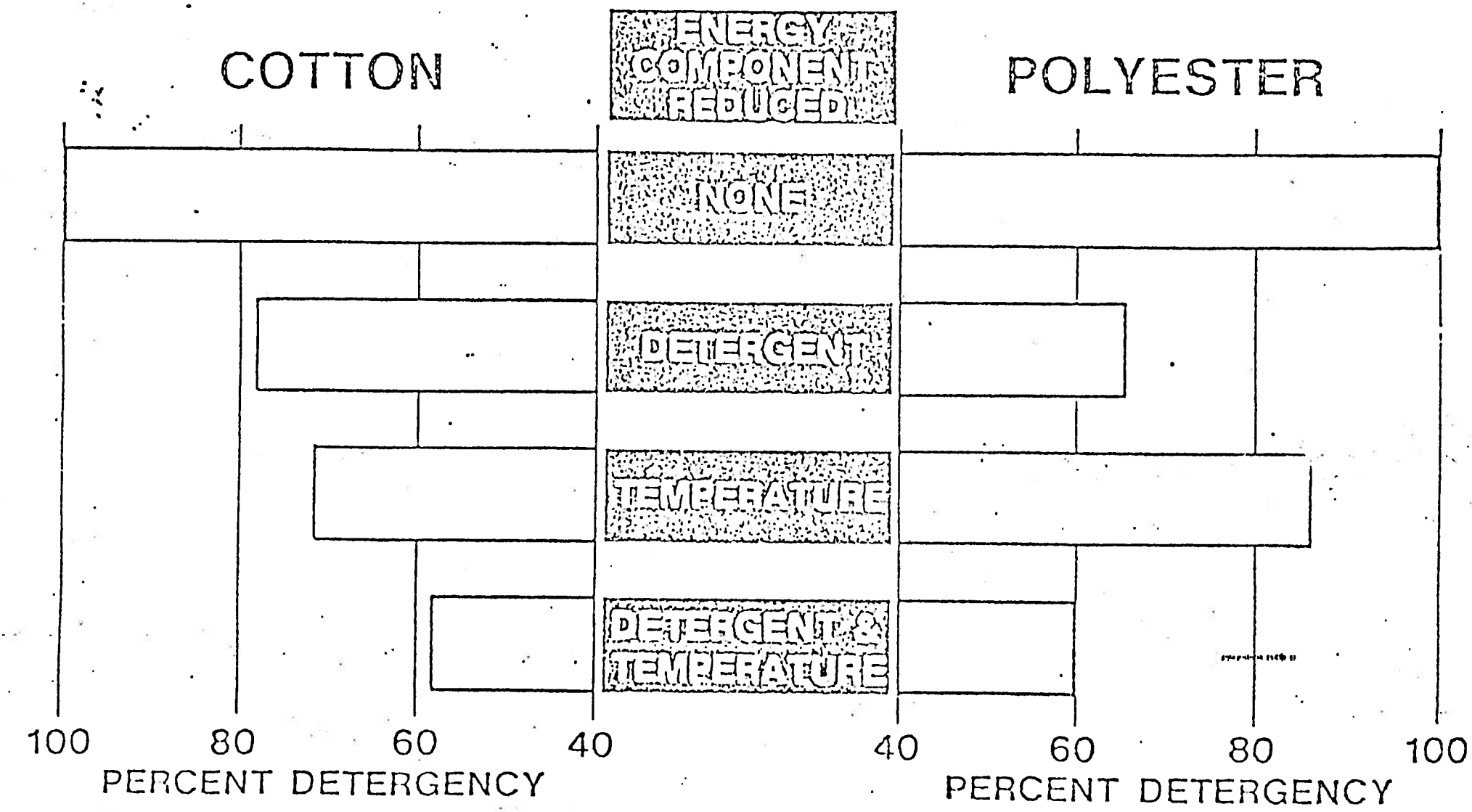


FIGURE 3

EXHIBIT G

STATE OF NEVADA
LEGISLATIVE COUNSEL BUREAU
LEGISLATIVE BUILDING
CAPITOL COMPLEX
CARSON CITY, NEVADA 89710

LEGISLATIVE COMMISSION (702) 885-5627
KEITH ASHWORTH, *Senator, Chairman*
Arthur J. Palmer, *Director, Secretary*
INTERIM FINANCE COMMITTEE (702) 885-5640
DONALD R. MELLO, *Assemblyman, Chairman*
Ronald W. Sparks, *Senate Fiscal Analyst*
William A. Bible, *Assembly Fiscal Analyst*

ARTHUR J. PALMER, *Director*
(702) 885-5627

FRANK W. DAYKIN, *Legislative Counsel* (702) 885-5627
JOHN R. CROSSLEY, *Legislative Auditor* (702) 885-5620
ANDREW P. GROSE, *Research Director* (702) 885-5637

April 9, 1981

M E M O R A N D U M

TO: Assemblyman Joseph E. Dini, Jr.

FROM: Samuel F. Hohmann, Senior Research Analyst

SUBJECT: Water Quality and Phosphates

This memorandum is in response to your request for information regarding the detrimental effects of phosphates on water quality. Contribution to eutroplication[1] of lakes and streams is well demonstrated, and phosphorus and other nutirents may be added to water naturally or as a consequence of man's activities. One source of phosphorus is detergents containing phosphates. The significance of this source is that with its removal (through local bans), eutrophication of lakes has been reversed. In these instances, detergent phosphates were the major contributor of phosphorus to the water.

Control of this source and others is discussed below. Several legislative alternatives are also suggested.

SOURCES AND CONTROL

There may be a number of sources of phosphorus which appear in streams and lakes of Nevada, and Lake Lahontan in particular. Five of these are discussed below.[2]

1. Discharges of insufficiently treated domestic and industrial wastewater from municipal sewage treatment facilities. Such discharges have been shown to contribute 84 percent of the total phosphorus load in one midwestern lake.[3]

   Of the phosphorus in domestic wastewater, 50 percent or more is contributed by detergents containing phosphates.[4] Wastewater can be treated for removal of phosphorus, e.g., by

addition of coagulants to influent sewage[5] and batch chemical precipitation.[6] This practice of treating wastewater specifically to remove phosphorus has been implemented in Washoe County. Phosphorus will, however, continue to appear in affluents from untreated wastewater (e.g., other sites along the Truckee and Carson rivers) and also residual amounts from treated effluents. In addition, periodic loading of certain industrial wastes may render phosphorus removal processes ineffectual.

2. Drainage from agricultural lands supporting animal husbandry operations or receiving fertilizer applications. These sources of phosphorus may be less easily controlled, although Section 208 of P.L. 92-500 mandates areawide water pollution control measures. Permit procedures may be established for the "point" sources of pollution (such as feedlots) while the "non-point" phosphorus sources may be dealt with by recommended or enforced use of improved cultivation and tillage practices. Cooperation between the agricultural industry and government is necessary for reducing these sources.

3. Precipitation and atmospheric fallout. Phosphorus carried in the atmosphere has been indicated as a major source of phosphorus eventually reaching surface waters. Improved agricultural practices may help in some instances.

4. Ground water, particularly if it carries improperly filtered septic system effluent. More stringent enforcement of present regulations regarding the installation of all new septic systems might minimize soil-related problems in the future.

5. Discharges containing organic litter from storm sewers draining urban areas. Storm sewer discharge waters collect nutrients from organic litter and lawn fertilizer. Control measures could include improved street cleaning, use of screens to catch litter before discharge, and appeals to residents to contain organic litter.

REGULATORY ALTERNATIVES

Several states have enacted laws banning or limiting the manufacture, sale, and use of detergents containing phsophates. Several of these are identified below. Copies of statutes are enclosed.

Connecticut
General Statutes of Connecticut section 25-44pp provides that the phosphorus content of any detergent is limited to 8.7 percent by weight. A number of exceptions are allowed.

Florida
Florida Statutes section 403.061 provides that no detergents are to be sold which are found to have negative impacts on the environment. Such regulations may be adopted by the Department of Environmental Regulation.

Indiana
Indiana Code section 13-1-5.5 limits phosphorus content in detergents to 0.5 percent by weight. Exceptions are specified.

Maine
Revised Statutes of Maine Title 38, section 419, prohibits sale or use of any high phosphorus detergent. Exceptions for cleaning dairy equipment, food processing equipment and industrial equipment are allowed.

Michigan
Public Act 226 of 1971 prohibits sale or distribution of cleaning agents containing phosphorus in excess of 8.7 percent by weight.

Minnesota
Minnesota Revised Statutes section 116.21-116.24 requires the Minnesota Pollution Control Agency to establish product standards which place a limit on the amount of phosphorus allowed in detergents, recognizing differences in uses.

New York
Consolidated Laws of New York, Environmental Conservation Law section 35-0105 prohibits distribution or sale of detergents containing more than 8.7 percent phosphorus by weight.

In addition, many municipalities have established local bans, limitations, or recommended use levels. The attached table identifies such communities.

ARGUMENTS IN FAVOR OF A LIMITATION OF PHOSPHATES IN CLEANING AGENTS[7]

The arguments in favor of a policy of limiting phosphates in cleaning agents can be summarized as follows:

1. It is easily administered.

2. It improves effluent from municipal wastewater treatment facilities that cannot themselves be improved.

3. It may improve effluent from septic systems.

4. It reduces the phosphorus contribution of combined sewers.

   As points 2, 3 and 4 above indicate, limiting the allowable amount of phosphate in cleaning agents will not affect the phosphorus loadings from rural land drainage and erosion or precipitation, but can complement efforts to reduce loadings from municipal discharges and septic system effleuents.

5. According to findings of the Minnesota Pollution Control Agency (PCA), with less phosphates to remove, chemical cost savings of up to 30 percent can accrue to wastewater treatment facilities using alum or ferric chloride for phosphorus removal.

6. Related to this finding described in 5 was the conclusion that with less chemically precipitated sludge, sludge handling and disposal problems and costs can be reduced at wastewater treatment facilities.

7. Neither Indiana nor New York personnel report that consumers have been complaining about ineffective phosphate-free cleaning agents.

8. New York and Indiana personnel have indicated that reductions of algae and aquatic plant growth in lakes and streams have occurred.

9. The Minnesota PCA has concluded that the largest single contribution--about 50 percent or more--to the total amount of phosphorus contained in sewage effluents is contributed by laundry detergents. Presently, the nation's major laundry detergent manufacturers produce at least one type of detergent that is phosphorus-free.

10. These manufacturers currently market laundry detergents in states with phosphorus bans that are populated by 32 million people.

11. Many laundry detergents without phosphorus are currently available in Nevada.

12. According to findings of the Minnesota PCA, many phosphorus-free laundry detergents are available in a variety of forms suitable for use in waters of varying hardness and for different types of soils and fabrics. (Phosphorus-free detergents do not contain NTA or any other phosphorus substitute which is known to be harmful to humans.)

13. A variety of phosphorus-free cleaning agents are currently marketed for nearly all household cleaning purposes. Exemptions to phosphorus limitations can be granted for all those cleaning agents for which there are not substitutes.

ARGUMENTS IN OPPOSITION TO A LIMITATION OF PHOSPHATES IN CLEANING AGENTS[8]

The arguments in opposition to a policy of limiting phosphate in cleaning agents can be summarized as follows:

1. The greatest contributions of phosphorus do not result from the use of cleaning agents containing phosphorus, thus the elimination of cleaning agents with phosphorus will have little effect on phosphorus loadings.

2. Water quality improvements have not resulted from phosphate bans in New York and Indiana, according to detergent industry testimony before the Michigan Water Resources Commission.

3. Removal of phosphorus from municipal effluent can be effectively accomplished at a minicipal wastewater treatment facility.

4. Detergent industry testimony in Michigan indicated that detergents presently contribute 35 percent of the phosphorus in sewage, not 50 percent as was previously true.

5. The above testimony also indicated that sludge production at wastewater treatment facilities is not reduced when phosphates are limited; in fact, there may be an equal amount of sludge generated by the precipitation of phosphate substitutes such as carbonate.

6. No cost-effective replacements for detergent phosphate are available for general laundry detergents.

7. Many consumers are not satisfied with phosphate-free detergents and most consumers pay more for extra detergent, additives, increased washing and more appliance service calls when phosphate laundry detergents are banned, according to detergent industry spokesmen.

8. Manufacturers who do not currently produce phosphate-free cleaning agents could experience increased costs adjusting manufacturing processes.

9. Phosphate suppliers could experience a loss of market.

I hope this information is helpful. If you have any questions or would like additional information, please do not hesitate to contact me.

SFH/jld: 4.1 Phos
Enclosures (See Notes on page 7)

NOTES

1 Eutrophication refers to the increasing capacity of a body of water to support heavy growth of algae and other aquatic plants due to the availability of nutrients (including phosphorus) in high concentrations. Eutrophication leads to water with an unpleasant taste and odor; deterioration of the aesthetic quality of the near-shore zone of the water and the water surface; reduction in the potential for sports fishing due to the elimination of most game fish; and reduction in the potential for other water-based recreation, such as swimming and boating. When heavy algae growth decays, the oxygen content of the water is reduced and fish kills occur.

2 Julie Greenberg. Limiting Phosphates in Cleaning Agents as a Means of Attempting to Reduce Lake Eutrophication, Staff Brief 77-6, Wisconsin Legislative Council, Madison, Wisconsin, June 27, 1977, pp. 7-10.

3 Environmental Protection Agency. Effect of a Phosphate Detergent Ban on Wisconsin Waters, Special Projects Branch, Corvallis Environmental Research Laboratory, EPA, Corvallis, Oregon, undated, p. 9.

4 Id.

5 H. J. Graham and R. B. Hunsinger. Phosphorus Reduction from Continuous Overflow Lagoons by Addition of Coagulants to Influent Sewage, Ontario Ministry of the Environment, Toronto, Ontario, 1977.

6 H. J. Graham and R. B. Hunsinger. Phosphorus Removal in Seasonal Retention Lagoons by Batch Chemical Precipitation, Ontario Ministry of the Environment, Toronto, Ontario, 1974.

7 Op. cit., Greenberg, pp. 11-12.

8 Id., pp. 12-13.

TOTAL P BAN:

Indiana

New York

Minnesota

Michigan

Vermont

Wisconsin

Dade Co., Fla.

Major Areas --

Chicago, Ill.
Akron, Ohio

Other--

Aurora, Ill.
Elgin, Ill.
Elmwood Park, Ill.

Harwood Heights, Ill.
Northlake, Ill.
Park Forest, Ill.
Kankakee, Ill.

Bridgton, Me.

Naples, Me.

Alton, N.H.
Center Harbor, N.H.
Gilford, N.H.

Meredith, N.H.*
Moultonboro, N.H.

Cuyahoga Falls, Ohio
Fairlawn, Ohio
Independence, Ohio

Monroe Falls, Ohio
Stow, Ohio
Tallmadge, Ohio
North Olmsted, Ohio

Madison, Wisc.**

8.7% P LIMITATION

Connecticut(2)

Florida****

Maine

Lake Co., Fla.(2)
Orange Co., Fla.(2)
Pineallas Co., Fla.(2)

Cocoa Beach, Fla. (2)

Kissimmee, Fla.(2)

Franklin Park, Ill.(2)
Highland Park, Ill.(2)
Hillside, Ill.(2)

Lombard, Ill.(2)
Morton Grove, Ill.(2)

Kennebunkport, Me***

Prince Georges' Co., Md. (1)

Euclid, Ohio (2)
Painesville, Ohio (2)

Willowick, Ohio (2)

---

7 gms. P (per recommended use level) Milwaukee, Wisc.

OTHER:

Enabling:

Iowa

---

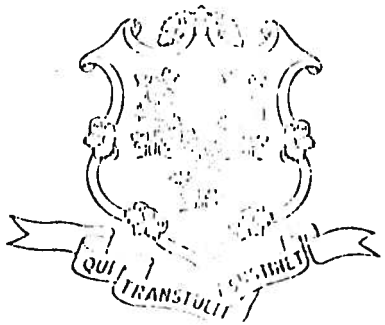
* -- Not being enforced
** -- Applies to City Purchases
*** -- 14% Phosphate
**** -- exempts household laundry detergents with recommended use level of ½ cup (2 oz.) or less per load.

(1) -- or 7 gms. P per recommended use level
(2) -- and 7 gms. P per recommended use level

THE GENERAL STATUTES OF CONNECTICUT

REVISION OF 1958

Revised to January 1, 1973



VOLUME V

Published by Authority of the State

Original document is of poor quality

(b) If any person, municipality violates section 25-54l or this section, the commissioner may institute an action in the superior court for the judicial district of Hartford-New Britain to enjoin the continuance of such violation, such action shall have precedence in the order of trial as provided in section 52-191; provided, in the case of a municipality, the commissioner, in lieu of instituting such action, may notify the commissioner of administrative services to take such steps as are necessary to cause the discharge of such municipality to comply with any outstanding order to abate pollution, and the powers of such municipality shall be pro tanto suspended until completion and such municipality shall be obligated to pay to the state for the municipality's share of the cost of such steps plus one-tenth of one per cent of such share. The commissioner of environmental protection shall determine a schedule of payments for said obligation, which payments shall be made in not more than twenty equal annual instalments. If such municipality fails to pay any such instalment, the commissioner shall notify the comptroller who shall thereafter withhold his order for the payment of any form of state aid or grant to such municipality except those provided under titles 10 and 17 until the total of such withheld payments equals the total of any such unpaid instalments.

(c) If any municipality violates the terms of any injunction obtained in accordance with the provisions of this section, the commissioner may notify the commissioner of administrative services, with a copy of such notice to such municipality, to take such steps as are necessary to cause the discharge of such municipality to comply with the terms of such injunction, and the powers of such municipality shall be pro tanto suspended until completion, provided, however, that such municipality shall be obligated to pay to the state for the municipality's share of the cost of such steps plus one-tenth of one per cent of such share. The commissioner of environmental protection shall determine a schedule of payments for said obligation, which payments shall be made in not more than twenty equal annual instalments. If such municipality fails to pay any such instalment, the commissioner shall notify the comptroller who shall thereafter withhold his order for the payment of any form of state aid or grant to such municipality except those provided under titles 10 and 17 until the total of such withheld payments equals the total of such unpaid instalments.

(d) If any person, municipality, or an agent thereof knowingly violates section 25-54l or this section, the court, in an action instituted under subsection (b) of this section, shall order such person or municipality to pay to the state a sum not to exceed one thousand dollars for each day's continuance of each violation, provided that if such person or municipality has previously been ordered by the court to make payment to the state for the same violation, then the court shall order payment of a sum not less than five hundred dollars for each day's continuance of such violation. If a municipality fails to make such payment in accordance with such judgment, the commissioner shall notify the comptroller who shall thereafter withhold his order for the payment of any form of state aid or grant to such municipality except those provided under titles 10 and 17 until the total of such withheld payments equals the amount of such payment.

(1971, P.A. 99, S. 2; P.A. 73-665, S. 13, 17; P.A. 77-614, S. 73, 610; P.A. 78-303, S. 6, 136.)

Sec. 25-54nn. Detergents: Definitions. As used in sections 25-54nn to 25-54pp, inclusive:

(a) "Synthetic detergent" or "detergent" means any cleaning compound which is composed of organic and inorganic compounds, including soaps, water softeners, surface active agents, dispersing agents, oil emulsifying agents, solvent oil compounds, foaming agents, buffering agents, builders, fillers, dyes, enzymes and fabric softeners, whether in the form of crystals, powders, flakes, bars, liquids, sprays or any other form;

(b) "Polyphosphate builder" or "phosphorus" means a water softening and suspending agent made from condensed phosphates, including pyrophosphates, triphosphates, tripolyphosphates, metaphosphates and glassy phosphates, used as a detergent ingredient;

(c) "Recommended use level" means the amount or concentration of synthetic detergent or detergent which the manufacturer thereof recommends for use at which level such synthetic detergent or detergent will effectively perform its intended function;

(d) "Machine dishwasher" means equipment manufactured for the purpose of cleaning dishes, glassware and other utensils involved in food preparation, consumption or use, using a combination of water agitation and high temperatures;

(e) "Dairy equipment," "beverage equipment" and "food processing equipment" mean that equipment used in the production of milk and dairy products, foods and beverages, including the processing, preparation or packaging thereof for consumption;

(f) "Industrial cleaning equipment" means machinery and other tools used in cleaning processes during the course of industrial manufacturing, production or assembly.

(1971, P.A. 248, S. 1; P.A. 74-311, S. 2, 6.)

Sec. 25-54oo. Labeling of detergents. Restrictions on sale or use. Penalty. (a) No person, firm or corporation shall sell, offer or expose for sale, give or furnish any synthetic detergent or detergent, whether in the form of crystals, powders, flakes, bars, liquids, sprays or any other form, in the state of Connecticut (1) on and after February 1, 1972, unless the container, wrapper or other packaging thereof shall be clearly labeled with respect to its polyphosphate builder or phosphorus ingredient content, clearly and legibly set forth thereon in terms of percentage of phosphorus by weight, expressed as elemental phosphorus per container, wrapper or other packaging thereof, as well as grams of phosphorus, expressed as elemental phosphorus, per recommended use level and (2) on and after October 1, 1974, unless such person, firm or corporation files with the commissioner of environmental protection a written statement setting forth the chemical and common names of all ingredients.

(b) The commissioner of the department of environmental protection may require that the recommended household, commercial, personal or industrial uses of each product and that the per cent by weight and function of any ingredient in any product be provided in a written statement within thirty days of request for such information. Any information acquired by the commissioner under this subsection shall, upon written request, be kept confidential with respect to ...

e commissioner of environmental protection may, by order, ban or e sale or use of any synthetic detergent or detergent in the state or the y synthetic detergent or detergent in any geographical area of the state the waters of the state.

y person who violates any provision of this section may be fined not less undred dollars nor more than three hundred dollars for the first offense, ss than three hundred dollars nor more than five hundred dollars for the l each subsequent offense. A separate and distinct offense shall be con- be committed each day on which such person shall continue or permit violation.

295, S. 2; P.A. 73-555, S. 2, 10; P.A. 74-311, S. 3, 6.)

-54op. Sale of certain detergents prohibited: Excepted uses. (a) No n or corporation shall sell, offer or expose for sale, give or furnish any detergent or detergent containing more than eight and seven-tenths per osphorus by weight, expressed as elemental phosphorus, within the state ter from and after February 1, 1972. No person, firm or corporation offer or expose for sale, give or furnish any synthetic detergent or deter- t requires a recommended use level of such synthetic detergent or deter- t contains more than seven grams of phosphorus by weight expressed as phosphorus, within the state of Connecticut from and after February 1, withstanding the foregoing provisions of this subsection, synthetic deter- etergents manufactured for use or to be used for medical, scientific or ineering purposes or for use in machine dishwashers, dairy equipment, uipment, food processing equipment and industrial cleaning equipment e subject to the limitations set forth in this section.

e concentration of phosphorus, by weight, expressed as elemental phos- any synthetic detergent or detergent shall be determined by the current method prescribed by the American Society for Testing and Materials.

e provisions of subsections (b) and (c) of section 25-54q, shall not apply s of subsection (a) of this section.

295, S. 3; P.A. 73-192, S. 1, 2; P.A. 74-311, S. 4, 6.)

-54oo. Penalty. Section 25-54qq is repealed.

295, S. 4; P.A. 73-665, S. 16, 17; P.A. 74-311, S. 5, 6.)

-54rr. Polychlorinated biphenyls (PCB). Definitions. As used in sections 25-54xx, inclusive:

ommissioner" means the commissioner of environmental protection.

CB" means the class of organic compounds known as polychlorinated or terphenyls and includes any of several compounds produced by wo or more hydrogen atoms on the biphenyl or terphenyl molecule with

cidental amounts of PCB" means amounts of the compound PCB in an uct or material which are beyond the control of the person manufac- ing for use or using such item, product or material

Sec. 25-54ss. Restrictions on manufacture, sale or use of PCB. (a) No person shall manufacture the compound PCB on or after July 1, 1976, and no person shall sell or offer for sale the compound PCB on or after July 1, 1976, unless he has registered such activity with the commissioner. Any person registered to sell or offer for sale the compound PCB shall, at least thirty days prior to the date on which delivery is to be made, notify the commissioner of each sale, the purchaser and the amount purchased.

(b) No person shall use the compound PCB in the manufacture of an item, product or material or sell or offer for sale an item, product or material to which the compound PCB has been added on or after July 1, 1977, except in accordance with section 25-54tt.

(P.A. 76-389, S. 2, 8.)

Sec. 25-54tt. Use of PCB in closed systems. Incidental amounts of PCB permitted. (a) An item, product or material containing the compound PCB may be manufactured for sale, sold for use or used if the compound PCB is used in a closed system as a dielectric fluid for an electric transformer or capacitor provided the item, product or material is labeled in accordance with the American National Standards Institute Incorporated guidelines.

(b) An item, product or material containing incidental amounts of PCB may be manufactured for sale, sold for use or used provided such incidental amounts do not result from exposing the item, product or material to the compound PCB or from failing to take reasonable measures to rid the item, product or material of the compound PCB.

(c) An item, product or material containing the compound PCB may be manufactured for sale, sold for use or used provided an exemption has been granted by the commissioner in accordance with section 25-54uu.

(P.A. 76-389, S. 3, 8.)

Sec. 25-54uu. Exemptions. (a) The commissioner may exempt the manufacture for sale, sale for use or use of an item, product or material containing the compound PCB or the use of the compound PCB for other purposes provided there is no reasonable substitute for the compound PCB in the item, product or material or for the use for other purposes.

(b) Any person intending to manufacture or continue to manufacture for sale, sell for use or continue to sell for use, use or continue to use an item, product or material containing the compound PCB or intending to use or continue to use the compound PCB after July 1, 1977, for uses other than those exempted pursuant to section 25-54tt, shall file a request for exemption with the commissioner at least six months prior to the date such use is intended to be initiated or continued.

(c) Each request for exemption shall contain a complete description of the intended use or use of the item, product or material containing the compound PCB or the intended use or use of the compound PCB for other purposes, the amounts of the compound PCB which is intended to be used or is used, the reasons a substitute for the compound PCB cannot be used or is not used and the manner by

vided during the 1978-1979 fiscal year. Instructional and special educational services which are provided to mental health and retardation clients in the Department of Health and Rehabilitative Services residential care facilities by local school districts shall not be less than 180 days or 900 hours; however, the 900 hours may be distributed over a 12-month period, unless otherwise stated in rules developed by the State Board of Education with the concurrence of the Department of Health and Rehabilitative Services promulgated pursuant to subsection (7).

(7) The State Board of Education and the Department of Health and Rehabilitative Services shall have the authority to promulgate rules to be effective during 1979 through 1982 fiscal years, which shall assist in the orderly transfer of the instruction of students from Department of Health and Rehabilitative Services residential care facilities to the district school system or, in the case of the Florida School for Boys at Okeechobee, to the Indian River Community College, and in implementing the specific intent as stated in this act.

History.—ss. 1, 2, ch. 71-350; s. 4, ch. 79-184; s. 1, ch. 80-143; s. 4, ch. 80-240.

CHAPTER 403

ENVIRONMENTAL CONTROL

PART I POLLUTION CONTROL

PART II ELECTRICAL POWER PLANT SITING

PART IV RESOURCE RECOVERY AND MANAGEMENT

PART V ENVIRONMENTAL REGULATION

PART VI DRINKING WATER

PART I

POLLUTION CONTROL

403.061 Department; powers and duties.—The department shall have the power and the duty to control and prohibit pollution of air and water in accordance with the law and rules and regulations adopted and promulgated by it, and for this purpose to:

(1) Approve and promulgate current and long-range plans developed to provide for air and water quality control and pollution abatement.

(2) Hire only such employees as may be necessary to effectuate the responsibilities of the department.

(3) Utilize the facilities and personnel of other state agencies, including the Department of Health and Rehabilitative Services, and delegate to any such agency any duties and functions as the department may deem necessary to carry out the purposes of this act.

(4) Secure necessary scientific, technical, research, administrative, and operational services by interagency agreement, contract, or otherwise. All state agencies, upon direction of the department, shall make these services and facilities available.

(5) Accept state appropriations, loans and grants from the Federal Government and from other sources, public or private, which loans and grants shall not be expended for other than the purposes of this act.

(6) Exercise general supervision of the administration and enforcement of the laws, rules, and regulations pertaining to air and water pollution.

(7) Adopt, modify, and repeal rules and regulations to carry out the intent and purposes of this act. Any rules or regulations adopted pursuant to this act shall be consistent with provisions of federal law, if any, relating to control of emissions from motor vehicles, effluent limitations, pretreatment requirements, or standards of performance.

(8) Issue such orders as may be necessary to effectuate the control of air and water pollution and enforce the same by all appropriate administrative and judicial proceedings.

(9) Adopt a comprehensive program for the prevention, control, and abatement of pollution of the air and waters of the state, and from time to time review and modify such program as necessary.

(10) Develop a comprehensive program for the prevention, abatement, and control of the pollution of the waters of the state. In order to effect this purpose, a grouping of the waters into classes may be made in accordance with the present and future most beneficial uses. Such classifications may from time to time be altered or modified. However, before any such classification is made, or any modifications made thereto, public hearings shall be held by the department.

(11) Establish ambient air quality and water quality standards for the state as a whole or for any part thereof, and also standards for the abatement of excessive and unnecessary noise. The department shall cooperate with the Department of Highway Safety and Motor Vehicles in the development of regulations required by s. 316.272(1).

(12)(a) Cause field studies to be made and samples to be taken out of the air and from the waters of the state periodically and in a logical geographic manner so as to determine the levels of air quality of the air and water quality of the waters of the state.

(b) Determine the source of the pollution whenever a study is made or a sample collected which

proves to be below the air or water quality standard air or water.

Require persons engaged in operations which may result in pollution, to file reports which may contain information relating to locations, size of outlet, height of outlet, rate and period of emission and composition and concentration of effluent, and such other information as the department shall prescribe to be filed relative to pollution.

(14) Establish a permit system whereby a permit may be required for the operation, construction, or expansion of any installation that may be a source of air or water pollution and provide for the issuance and revocation of such permits and for the posting of an appropriate bond to operate.

(a) Notwithstanding any other provision of this chapter, the Department of Environmental Regulation may authorize, by rule, the Department of Transportation to perform any activity requiring a permit from the Department of Environmental Regulation covered by this chapter, upon certification by the Department of Transportation that it will meet all requirements imposed by statute, rule, or standard for environmental control and protection as such statute, rule, or standard applies to a governmental program. To this end, the Department of Environmental Regulation may accept such certification of compliance for programs of the Department of Transportation, may conduct investigations for compliance, and, if a violation is found to exist, may take all necessary enforcement action pertaining thereto, including, but not limited to, the revocation of certification. The authorization shall be by rule of the Department of Environmental Regulation, shall be limited to the maintenance, repair, or replacement of existing structures, and shall be conditioned upon compliance by the Department of Transportation with specific guidelines or requirements which are set forth in the formal acceptance and deemed necessary by the Department of Environmental Regulation to assure future compliance with this chapter and applicable department rules. Failure of the Department of Transportation to comply with any provision of the written acceptance shall constitute grounds for its revocation by the Department of Environmental Regulation.

(b) The provisions of chapter 120 shall be accorded any person where substantial interests will be affected by an activity proposed to be conducted by the Department of Transportation pursuant to its certification and the Department of Environmental Regulation's acceptance. If a proceeding is conducted pursuant to s. 120.57, the Department of Environmental Regulation may intervene as a party. Should a hearing officer of the Division of Administrative Hearings of the Department of Administration submit a recommended order pursuant to s. 120.57, the Department of Environmental Regulation shall issue a final department order adopting, rejecting, or modifying the recommended order pursuant to such action.

(15) Consult with any person proposing to construct, install, or otherwise acquire a pollution control device or system, concerning the efficacy of such device or system, or the pollution problem which may be related to the source, device, or system. Nothing in any such consultation shall be construed to relieve any person from compliance with this act, rules and regulations of the department, or any other provision of law.

(16) Encourage voluntary cooperation by persons and affected groups to achieve the purposes of this act.

(17) Encourage local units of government to handle pollution problems within their respective jurisdictions on a cooperative basis, and provide technical and consultative assistance therefor.

(18) Encourage and conduct studies, investigations, and research relating to pollution and its causes, effects, prevention, abatement, and control.

(19) Make a continuing study of the effects of the emission of air contaminants from motor vehicles on the quality of the outdoor atmosphere of this state and the several parts thereof, and make recommendations to appropriate public and private bodies with respect thereto.

(20) Collect and disseminate information and conduct educational and training programs relating to pollution.

(21) Advise, consult, cooperate, and enter into agreements with other agencies of the state, the Federal Government, other states, interstate agencies, groups, political subdivisions, and industries affected by the provisions of this act, rules, or policies of the department.

(22) Adopt, modify, and repeal rules governing the specifications, construction, and maintenance of industrial reservoirs, dams, and containers which store or retain industrial wastes of a deleterious nature.

(23) Adopt rules and regulations to ensure that no detergents are sold in Florida after December 31, 1972, which are reasonably found to have a harmful or deleterious effect on human health or on the environment. Any regulations adopted pursuant to this subsection shall apply statewide. Subsequent to the promulgation of such rules and regulations, no county, municipality, or other local political subdivision shall adopt or enforce any local ordinance, special law, or local regulation governing detergents which are less stringent than state law or regulation. Regulations, ordinances, or special acts adopted by a county or municipality governing detergents shall be subject to approval by the department, except that regulations, ordinances, or special acts adopted by any county or municipality with a local pollution control program approved pursuant to s. 403.182 shall be approved as an element of the local pollution control program.

Detergents

(24)(a) Establish a permit system to provide for spoil site approval, as may be requested and required by local governmental agencies as defined in s. 403.1822(1), or mosquito control districts as defined in s. 388.011(2), to facilitate these agencies in providing spoil sites for the deposit of spoil from maintenance dredging of navigation channels, port harbors, turning basins, and harbor berths, as part of a federal project, when the agency is acting as sponsor of a contemplated dredge and fill operation involving an established navigation channel, harbor, turning basin, or harbor berth. A spoil site approval granted to the agency shall be granted for a period of 10 to 25

BURNS
INDIANA STATUTES
ANNOTATED

CODE EDITION

TITLE 13

TITLE 14

1981 REPLACEMENT VOLUME

Annotations from Indiana Decisions through Volume 74, page 330

Original Edition by
HARRISON BURNS

Prepared by the Editorial Staff of the Publishers

Under the Supervision of

DAVID P. HARRIMAN, CLIFTON W. ANDERSON, ELIZABETH E. PINCUS AND DELLA H. DICKSON

THE BOBBS-MERRILL COMPANY, INC.
PUBLISHERS
INDIANAPOLIS • NEW YORK
CHARLOTTESVILLE, VIRGINIA

13-1-5-5 [35-5105]. Land with dwelling not to be condemned. — No real estate shall be condemned pursuant to this act [13-1-5-1 — 13-1-5-5] if at the time this act goes into effect [March 12, 1957] there is a dwelling house located thereon. [Acts 1957, ch. 152, § 5.]

CHAPTER 5.5

PROHIBITIONS ON THE SALE AND USE OF CERTAIN DETERGENTS

13-1-5.5-1 [35-5101]. Detergents containing alkyl benzine sulfonate. — It is unlawful to use, sell or otherwise dispose of any hard or nondegradable detergent containing alkyl benzine sulfonate (ABS) in any manner or in any location in this state or into the boundary waters of this state from a source within the state. [IC 13-1-5.5-1, as added by Acts 1971, P.L. 174, § 1.]

Collateral References. Validity and construction of antiwater pollution statutes or ordinances. 32 A.L.R. 3d 215.

13-1-5.5-2 [35-5102]. [Repealed.]

Compiler's Notes. This section (Acts 1971, P.L. 174, § 1; 1972, P.L. 97, § 1), which placed limits on the amount of phosphorus contained in detergents sold during 1972, was repealed by Acts 1975, P.L. 2, § 1331. For present law see 13-1-5.5-3.

13-1-5.5-3 [35-5103]. Limitation of phosphorus. — It is unlawful to use, sell, or otherwise dispose of any detergent containing phosphorus, except for those amounts not exceeding one-half of one percent [0.5%] by weight incidental to manufacturing, in accordance with regulations prescribed by the stream pollution control board, in this state or into the boundary waters of this state from a source within the state. The concentration of phosphorus shall be determined by the applicable method prescribed by the American Society for Testing and Materials. This chapter does not apply to detergents for cleaning implements of food processing and dairy equipment; phosphoric acid products including rinse, brightener, acid cleaners, and metal conditioners; detergents for use in dish machine washing equipment, including household and commercial machine dishwashers; detergents for use in hospitals and health-care facilities; institutional laundry detergents; detergents for use in dairy, beverage, food processing, and other industrial cleaning equipment; and any other use of detergents in which the phosphorus contents are not permitted to enter any public or private sewer or to be disposed of in the natural environment. [IC

13-1-5.5-3, as added by Acts 1971, P.L. 174, § 1; 1972, P.L. 97, § 2; 1973, P.L. 117, § 1; 1978, P.L. 2, § 1305.]

Indiana Law Review. The Indiana Environmental Protection Agencies: A Survey and Critique, [illegible] Ind. L. Rev. [illegible].

13-1-5.5-4 [35-5104]. Exemptions. — Nothing in this chapter shall apply to a detergent or cleaning compound contained in fuel or lubricating oil. [IC 13-1-5.5-4, as added by Acts 1971, P.L. 174, § 1.]

13-1-5.5-5 [35-5105]. Disposition of detergent carried over effective dates — Use for cleaning plant and equipment. — The stream [illegible] ever on the effective dates of this chapter: Provided, however, That the stream pollution control board may approve the use of phosphates by a manufacturer or processor for cleaning plant or equipment upon application to the board by the manufacturer or processor. The board shall require phosphate removal from the water so used by criteria established by the board. [IC 13-1-5.5-5, as added by Acts 1971, P.L. 174, § 1.]

Indiana Adm. Code. 330 IAC 1-1-8. 330 IAC 1-5-1.

13-1-5.5-6 [35-5106]. Injunctions. — The attorney general shall, upon the request of the stream pollution control board, institute injunction proceedings to enjoin acts constituting a violation of this chapter. [IC 13-1-5.5-6, as added by Acts 1971, P.L. 174, § 1.]

13-1-5.5-7 [35-5107]. Penalty for violating chapter — Injunction. — (a) A person who violates this chapter commits a class B infraction.

(b) The court shall issue an order enjoining the use, sale, or other disposition of any detergent involved in a violation of this chapter. [IC 13-1-5.5-7, as added by Acts 1971, P.L. 174, § 1; 1978, P.L. 2, § 1306.]

Cross References. Penalties for infractions, [illegible]

CHAPTER 5.7

CONFINED FEEDING CONTROL LAW

Maine
REVISED STATUTES ANNOTATED
1964

Prepared Under the Supervision
of the
Committee on Revision of Statutes

Being the Tenth Revision of the
Revised Statutes of the State
of Maine, 1964

Volume 16A

Titles 37 to 39

ST. PAUL, MINN.
WEST PUBLISHING CO.

and the public rights of fishing and navigation and the economic implications upon the applicant of such use. If after hearing the board determines that the proposed use will not lower the existing quality or the classification standards, whichever is higher, of any waters, nor adversely affect the public rights of fishing and navigation therein and that inability to conduct such use will impose undue economic hardship on the applicant, it shall grant the permit for a period not to exceed 3 years, with such terms and conditions, as in its judgment, may be necessary to [illegible]s.

3. Repealed. 1973, c. 422.

1971, c. 555; 1971, c. 618, § 12; 1973, c. 422; 1973, c. 625, § 272; 1973, c. 712, § 7; 1977, c. 300, §§ 21, 22.

Historical Note

Laws 1971, c. 618, § 12, substituted "Board of Environmental Protection" for "Environmental Improvement Commission".

Laws 1973, c. 422, repealed subsec. 3 which prior thereto read:

"This section shall not apply to waters under the jurisdiction of the International Joint Commission of the United States and Canada."

Laws 1973, c. 625, § 272, inserted "lumber mills or any other destination" in the first sentence of subsec. 1.

Laws 1973, c. 712, § 7, deleted "and shall be accompanied by a processing fee of $75" from the end of the second sentence of the first paragraph of subsec. 2.

The 1977 amendment repealed and replaced the fourth paragraph and repealed the former last paragraph in subsec. 2. Prior to this amendment, the fourth and former last paragraph of subsec. 2 read:

"In the event the commission deems it necessary to solicit further evidence regarding the proposed use, it shall schedule a public hearing on the application, and shall give public notice by publication in a newspaper circulated in the area of the proposed use and in a newspaper having state-wide circulation and distribution in the said area, once a week for 2 successive weeks, the date of the last publication being at least 3 days before the date of the hearing. Notice of the hearing shall also be given to the applicant at least 21 days before the date of the hearing.

"A full and complete record shall be kept of all hearings held under this section and all costs [illegible] shall be [illegible]."

Library References

Navigable Waters ⟸35.
Waters and Water Courses ⟸69.
C.J.S. Navigable Waters § 11.
C.J.S. Waters § 49.

§ 419. Cleaning agents containing phosphate banned

1. Definitions.

A. "Dairy equipment", as used in this section, means equipment used by farmers or processors for the manufacture or processing of milk and dairy products.

B. "Food [illegible]", as used in this section, [illegible]

food for sale, except that equipment used at restaurants and similar places of business shall not be included within the meaning of "food processing equipment."

C. "High phosphorous detergent", as used in this section, means any detergent, presoak, soap, enzyme or other cleaning agent containing more than 8.7% phosphorous, by weight.

D. "Industrial equipment", as used in this section, means equipment used by industrial concerns which concerns are located on any brook, stream or river.

E. "Person", as used in this section, means any individual, firm, association, partnership, corporation, municipality, quasi-municipal organization, agency of the State or other legal entity.

2. Prohibition. No person shall sell or use any high phosphorous detergent after June 1, 1972.

3. Exception. Subsection 2 shall not apply to any high phosphorous detergent sold and used for the purpose of cleaning dairy equipment, food processing equipment and industrial equipment.

4. Repealed. 1977, c. 300, § 23.

1971, c. 544, § 128; 1977, c. 300, § 23.

Historical Note

The 1977 amendment repealed subsec. 4 which prior thereto read: "Any person who violates this section shall be punished by a fine of not more than $500 for each violation."

Effective date. Section 152 of Laws 1971, c. 544, provided: "Sections 127 to 130 shall become effective 91 days after adjournment of the Legislature."

Library References

Navigable Waters ⇐85. C.J.S. Navigable Waters § 11.

§ 420. Certain deposits and discharges prohibited

No person, firm, corporation or other legal entity shall place, deposit, discharge or spill, directly or indirectly, into the inland or tidal waters of this State, or on the ice thereof, or on the banks thereof so that the same may flow or be washed into such waters, or in such manner that the drainage therefrom may flow into such waters, any of the following substances:

1. Mercury. Mercury, and any compound containing mercury, whether organic or inorganic, in any concentration which

PUBLIC AND LOCAL ACTS

OF

THE LEGISLATURE

OF THE

State of Michigan

PASSED AT THE

REGULAR SESSION OF 1971

ALSO OTHER MATTERS REQUIRED BY LAW TO BE PUBLISHED WITH THE PUBLIC ACTS.

COMPILED BY THE

LEGISLATIVE SERVICE BUREAU

AND PUBLISHED BY THE

DEPARTMENT OF ADMINISTRATION

PRINTED BY ROBERT-HINES AND THOMAS, INC. LANSING, MICHIGAN

recreational area [illegible] and public educational purposes.

This act is ordered to take immediate effect.
Approved December 30, 1971.

[No. 226.]

AN ACT to restrict the content of cleaning agents in order to protect water quality by preventing and controlling growth of algae, weeds and slimes.

The People of the State of Michigan enact:

323.231 Cleaning agents; definitions. [M.S.A. 3.533(301)]

Sec. 1. As used in this act:

(a) "Cleaning agent" means a laundry detergent, dishwashing compound, household cleaner, metal cleaner, degreasing compound, commercial cleaner, industrial cleaner, phosphate compound or other substance intended to be used for cleaning purposes.

(b) "Nutrient" means a substance or combination of substances that, when added to any waters of the state in sufficient quantities, provides nourishment that promotes the growth of aquatic vegetation in the waters to such densities as to interfere with or be detrimental to their use by man or by any animal, fish or plant useful to man.

(c) "Water conditioner" means a water softening chemical, antiscale chemical, corrosion inhibitor or other substance intended to be used to treat water.

323.232 Phosphorus content, maximum. [M.S.A. 3.533(302)]

Sec. 2. After July 1, 1972, a person shall not sell or distribute for use in this state a cleaning agent which contains phosphorus in any form in excess of 8.7% by weight expressed as elemental phosphorus.

323.233 Water resources commission, rules; compliance, burden of proof. [M.S.A. 3.533(303)]

Sec. 3. The water resources commission shall promulgate rules in accordance with and subject to Act No. 306 of the Public Acts of 1969, as amended, being sections 24.201 to 24.315 of the Compiled Laws of 1948. The rules may further restrict the nutrient content and other contents of cleaning agents and water conditioners, to prevent unlawful pollution and control nuisance growths of algae, weeds and slimes which are or may become injurious to other lawful water uses, to prevent cleaning agents and water conditioners, separately or in combination with other substances, from rendering or tending to render any waters of this state harmful or inimical to public health, or to animal or aquatic life, or to beneficial water uses, and to minimize any hazard to the health or safety of users of the cleaning agents or water conditioners. The burden of proof shall be on a manufacturer of a cleaning agent or water conditioner, before distribution for sale or use in this state, to establish that its contents comply with this act and rules promulgated hereunder, and will not or is not likely to be used in violation of a rule promulgated pursuant to this act.

323.234 Cleaning agents; prohibited sales. [M.S.A. 3.533(304)]

Sec. 4. A person shall not sell detergents or cleaning compounds containing any substance other than phosphorus that may cause unlawful pollution of the waters when discharged thereto, if the water resources commission determines that the other substance will cause unlawful pollution under the circumstances of its expected use and disposal or will pose a hazard to human health and safety. A determination by the commission shall not limit, restrain or in any way affect such action as it finds appropriate under the provisions of Act No. 245 of the Public Acts of 1929, as amended, being sections 323.1 to 323.12a of the Compiled Laws of 1948. The commission may establish by rule the criteria by which it will determine the possible pollutional effect of any substance. Nothing in this act shall apply to any detergent or cleaning compound contained in any fuel or lubricating oil.

323.235 Local ordinances, conflict, effect. [M.S.A. 3.533(305)]

Sec. 5. A political subdivision shall not enact or enforce an existing or future ordinance or rule with respect to the sale of cleaning agents containing phosphorus or any other substance which is or may be regulated by or pursuant to this act.

323.236 Enforcement of act, orders. [M.S.A. 3.533(306)]

Sec. 6. The water resources commission shall enforce this act and seek court enforcement of its orders pursuant to Act No. 245 of the Public Acts of 1929, as amended, being sections 323.1 to 323.13 of the Compiled Laws of 1948.

This act is ordered to take immediate effect.
Approved January 3, 1972.

[No. 227.]

AN ACT to prescribe the rights and duties of parties to home solicitation sales.

The People of the State of Michigan enact:

445.111 Home solicitation sale; definition. [M.S.A. 19.416(201)]

Sec. 1. "Home solicitation sale" means a sale of goods or services of more than $35.00 in which the seller or a person acting for him engages in a personal solicitation of the sale at a residence of the buyer and the buyer's agreement or offer to purchase is there given to the seller or a person acting for him. It does not include a sale made pursuant to a preexisting revolving charge account, or a sale made pursuant to prior negotiations between the parties at a business establishment at a fixed location where goods or services are offered or exhibited for sale, or a sale of insurance by an insurance agent licensed by the commissioner of

Where L.1971, Ex.Sess., c. 20, providing for appropriation of public money and sale of bonds pledging full faith and credit of state to be used for grants and loans to subdivisions of state for acquisition and betterment of public land, buildings and improvements of capital nature needed for prevention, control and abatement of water pollution set out manner in which grants and loans were to be made but actual appropriation was made by the legislature, legislature did not unlawfully delegate authority to Pollution Control Agency. Id.

116.21 Nutrients in cleaning agents and water conditioners, control; statement of policy

The legislature seeks to encourage the Minnesota pollution control agency through the passage of sections 116.21 to 116.35, to set standards limiting the amount of nutrients in various cleaning agents and water conditioning agents. The legislature realizes that the nutrients contained in many of these products serve a valuable purpose in increasing their overall effectiveness, but we are also aware that they overstimulate the growth of aquatic life and eventually lead to an acceleration of the natural eutrophication process of our state's waters. Limitations imposed under sections 116.21 to 116.35 should, however, be made taking the following factors into consideration:

(1) The availability of safe, nonpolluting, and effective substitutes.

(2) The difference in the mineral content of water in various parts of the state.

(3) The differing needs of industrial, commercial and household users of cleaning agents and chemical water conditioners.

Laws 1971, c. 896, § 1, eff. June 8, 1971.

Historical Note

Title of Act:

An Act relating to pollution control; prohibiting cleaning agents and chemical water conditioners containing certain nutrients; requiring certain tests for percentage content of phosphates in laundry or dishwashing compounds; requiring the display of certain labels setting forth percentage content of phosphates in certain products; providing penalties. Laws 1971, c. 896.

Library References

Health and Environment ⇐20, 28.
Waters and Water Courses ⇐70 et seq.

C.J.S. Health and Environment §§ 2, 9 et seq., 21.
C.J.S. Waters § 45.

116.22 Definitions

Subdivision 1. For purposes of sections 116.21 to 116.35, the terms defined in this section shall have the meanings given them.

Subd. 2. "Cleaning agent" means a laundry detergent, dishwashing compound, household cleaner, metal cleaner, degreasing compound, commercial cleaner, industrial cleaner, phosphate compound or other substance intended to be used for cleaning purposes.

Subd. 3. "Nutrient" means a substance or combination of substances which, if added to waters in sufficient quantities, provides nourishment that promotes growth of aquatic vegetation in densities which:

(a) interfere with use of the waters by man or by any animal, fish or plant useful to man, or

(b) contribute to degradation or alteration of the quality of the waters to an extent detrimental to their use by man or by any animal, fish or plant that is useful to man.

Subd. 4. "Chemical water conditioner" means a water softening chemical, antiscale chemical, corrosion inhibiter or other substance intended to be used to treat water.

Laws 1971, c. 896, § 2, eff. June 8, 1971.

116.23 Prohibition

No person shall manufacture for use or sale in Minnesota or import into Minnesota for resale any cleaning agent or chemical water conditioner which contains a prescribed nutrient in a concentration that is greater than the prescribed maximum permissible concentration of that nutrient in that cleaning agent or chemical water conditioner.

Laws 1971, c. 896, § 3, eff. June 8, 1971.

116.24 Regulations

The pollution control agency may make regulations:

(a) prescribing for the purpose of section 116.23 nutrients and the maximum permissible concentration if any, of a prescribed nutrient in any cleaning agent or chemical water conditioner;

(b) respecting the manner in which the concentration of any prescribed nutrient in a cleaning agent or chemical water conditioner shall be determined; and

(c) requiring persons who manufacture in Minnesota any cleaning agent or chemical water conditioner to maintain books and records necessary for the proper enforcement of sections 116.21 to 116.35 and regulations thereunder, and to submit samples of cleaning agents or water conditioners to the pollution control agency.

Laws 1971, c. 896, § 4, eff. June 8, 1971.

116.25 Seizure

Subdivision 1. The pollution control agency may seize a cleaning agent or chemical water conditioner which it reasonably believes was manufactured or imported in violation of section 116.23.

Subd. 2. A cleaning agent or chemical water conditioner seized under sections 116.21 to 116.35, may be kept or stored in the building or place where it was seized or may be removed to any other proper place by or at the direction of the pollution control agency.

Subd. 3. Except with the authority of the pollution control agency, no person shall remove, alter or interfere with a cleaning agent or chemical water conditioner seized under sections 116.21 to 116.35, but the pollution control agency shall, at the request of a person from whom it was seized, furnish a sample thereof to the person for analysis.

Laws 1971, c. 896, § 5, eff. June 8, 1971.

Library References

Forfeitures ⇐3 et seq. C.J.S. Forfeitures § 3.

116.26 Restoration

Subdivision 1. When a cleaning agent or chemical water conditioner has been seized under sections 116.21 to 116.35, any person may within two months after the date of seizure, upon prior notice in accordance with subdivision 2 to the pollution control agency by registered mail, apply to the district court within whose jurisdiction the seizure was made for an order of restoration under subdivision 3.

Subd. 2. Notice under subdivision 1 shall be mailed at least 15 days prior to the day on which the application is to be made to the district court and shall specify:

(a) the district court to which the application is to be made:

McKINNEY'S
CONSOLIDATED LAWS
OF
NEW YORK
ANNOTATED

Book 17½

Environmental Conservation Law

ECL

27-0101 to End

With Annotations

From

State and Federal Courts

and

State Agencies

ST. PAUL, MINN.
WEST PUBLISHING CO.

ARTICLE 35—DETERGENTS AND OTHER HOUSEHOLD CLEANSING PRODUCTS

§ 35-0101. Scope of article

By the enactment of this article the state fully exercises the exclusive right to regulate and control the labelling and ingredients of household cleansing products distributed, sold, offered, or exposed for sale in this state, within the scope and limitations of this article. The terms "regulation" and "control" include prohibitions or other restrictions on the distribution, sale, offering or exposing for sale of such products in this state. In order to assure statewide uniformity, such regulation and control by any political subdivision of the state of such products is prohibited after June 25, 1971 provided, however, that any such regulation and control in effect on June 1, 1971 shall be unaffected by this section.

L.1972, c. 664, § 2.

Source of Section

Environmental Conservation Law of 1970, c. 140, § 17, added L.1971, c. 716, § 2; and repealed by L.1972, c. 664, § 2.

Library References

Health and Environment ⇐25.5.
Navigable Waters ⇐35.
Waters and Water Courses ⇐261 et seq., 120.
C.J.S. Navigable Waters § 11.
C.J.S. Waters §§ 43 et seq., 123.

§ 35-0103. Definitions

The following terms, whenever used or referred to in this article, shall have the following meaning unless a different meaning clearly appears from the context:

1. "Household cleansing product" means any product, including but not limited to soaps and detergents, containing a surfactant as a wetting or dirt emulsifying agent and used primarily

for domestic or commercial cleaning purposes, including but not limited to, the cleansing of fabrics, dishes, food utensils and household and commercial premises. Household cleansing product shall not mean foods, drugs, cosmetics, insecticides, fungicides and germicides or cleansing products used primarily in industrial manufacturing, production and assembling processes as provided by the commissioner by rule and regulation.

2. "Person" means any individual, partnership, firm or corporation.

3. "Phosphorus" means elemental phosphorus.

L.1972, c. 664, § 2.

Source of Section

Environmental Conservation Law of 1970, c. 140, § 17, added L.1971, c. 716, § 2; and repealed by L.1972, c. 664, § 2.

§ 35-0105. Distribution and sale of household cleansing products

1. No person shall distribute, sell, offer or expose for sale in this state any household cleansing product unless its wrapper or container shall be plainly labeled as provided in this subdivision. The commissioner may by rule or regulation exempt products shipped or distributed in bulk from provisions of this subdivision. The wrapper or container of every household cleansing product must list the weight of each ingredient which the commissioner determines may affect adversely human health or the environment, including but not limited to phosphorus. Such listing shall be by percentage of total weight of such product and by grams per recommended use, in descending order of predominance. Labeling of ingredients shall be in accordance with the nomenclature established by regulation of the commissioner. The percentage by weight in the container and the weight in grams per recommended use level of each ingredient shall be expressed to at least two significant figures or as specified by the commissioner. Analyses to determine actual composition shall be performed in accordance with rules and regulations of the commissioner.

2. No household cleansing product shall be distributed, sold, offered or exposed for sale in this state after December 31, 1971, which shall contain a phosphorus compound in excess of eight and seven tenths percent by weight expressed as phosphorus. No household cleansing product shall be distributed, sold, offered or exposed for sale in this state on or after June 1, 1973, which

[illegible] concentrations as may be authorized by the commission[illegible] by regulation.

3. No person shall distribute, sell, offer or expose for sale in this state any household cleansing product which does not comply with regulations of the commissioner promulgated pursuant to subdivision 3 of section 35-0107.

L.1972, c. 664, § 2.

Source of Section

Environmental Conservation Law of 1970, c. 140, § 17, added L.1971, c. 661, § 2: c. 716, § 2; and repealed by L.1972, c. 661, § 2.

Notes of Decisions

1. Local laws

Section 2(b) of Erie County Local Law No. 8 regulating the sale of detergents containing phosphorous was not rendered invalid and was not in violation of Const. art. 9, § 2 by reason of subsequent enactment of former Environmental Conservation Law § 17. Colgate-Palmolive Co. v. Erie County, 1972, 39 A.2d 641, 331 N.Y.S.2d 95.

§ 35-0107. Powers and duties of commissioner

1. The commissioner is hereby authorized to promulgate regulations requiring manufacturers of household cleansing products distributed, sold or offered for sale in this state, to furnish to the commissioner for the public record as herein provided information regarding such products in a form prescribed by the commissioner including the nature and extent of investigations and research performed by the manufacturer concerning the effects of such products on human health and the environment. These reports shall be available to the public at the department of environmental conservation, except those portions the manufacturer determines, subject to the approval of the commissioner, would be, if disclosed, seriously prejudicial to the manufacturer's legitimate interest in trade secrets and economics of operation.

2. No later than February 1, 1973 the commissioner shall prepare and submit a comprehensive report to the governor and legislature on the status of progress made in research and development to provide a safe and effective substitute for phosphates in household cleansing products.

3. Whenever the commissioner finds, after investigation, that any ingredient of household cleansing products distributed, sold, offered or exposed for sale in this state, other than an in-

section 35-0105, will or is likely to materially affect adversely human health or the environment, he may, after public hearing, restrict or limit by regulation the use of such ingredient in such products.

L.1972, c. 664, § 2.

Source of Section

Environmental Conservation Law of 1970, c. 140, § 17, added L.1971, c. 661, § 2: c. 716, § 2; and repealed by L.1972, c. 661, § 2.

§ 35-0109. Notice of public hearing held pursuant to this article; hearing procedure

1. Notice of public hearing shall be by publication in two newspapers most likely to give notice to the people of this state of such hearings at least once in each of three successive weeks, provided, however, that notice of public hearing shall be given to the manufacturer or manufacturers of such household cleansing products in writing, whenever practicable or in such other form as in the commissioner's judgment will reasonably notify such manufacturer of said hearing. Such hearing shall not be conducted less than thirty days following the date of first publication of notice of such hearing.

2. The commissioner may adopt other appropriate regulations prescribing the procedures to be followed at such hearings.

L.1972, c. 664, § 2.

Source of Section

Environmental Conservation Law of 1970, c. 140, § 17, added L.1971, c. 661, § 2: c. 716, § 2; and repealed by L.1972, c. 661, § 2.

McKINNEY'S CONSOLIDATED LAWS OF NEW YORK ANNOTATED

744

Book 17½

Environmental Conservation Law
§§ 21-0101 to End

Cumulative Annual Pocket Part

For Use In 1980-1981

Replacing prior pocket part in back of volume

Always Consult
Your Latest McKinney's Session Law News

ST. PAUL, MINN.
WEST PUBLISHING CO.

relates to [illegible] of the program", and added provisions beginning "For private applicators" and "An annual increment", and in sentence beginning "When the applicant" deleted "certificate" following "of business a".

Subd. 6. L.1978, c. 685, § 7, eff. Sept. 1, 1978, in sentence beginning "Certified pesticide applicators", substituted "pesticide" for "custom" and deleted "custom" following "reports concerning the".

Subd. 7, opening par. L.1978, c. 685, § 7, eff. Sept. 1, 1978, in opening par., deleted "custom" following "applicant or certified" and inserted "or registration".

Subd. 7, par. b. L.1978, c. 685, § 7, eff. Sept. 1, 1978, deleted "custom" following "applicant or certified".

Subd. 7, par. c. L.1978, c. 685, § 7, eff. Sept. 1, 1978, deleted "custom" following "applicant or certified".

Subd. 7, par. d. L.1978, c. 685, § 7, eff. Sept. 1, 1978, deleted "custom" following "applicant or certified" and following "practices in the".

Subd. 7, par. e. L.1978, c. 685, § 7, eff. Sept. 1, 1978, deleted "custom" following "applicant or certified".

Subd. 8. L.1978, c. 685, § 7, eff. Sept. 1, 1978, deleted "custom" following "or revoke a", inserted "or registration", and deleted "custom" following "applicant or certified".

1976 Amendment. Subd. 3. L.1976, c. 238, § 1, eff. June 1, 1976, lettered existing provisions as par. a and added par. b.

1973 Amendment. Subd. 2. L. 1973, c. 314, § 1, eff. Jan. 1, 1974, added subd. 2. Former subd. 2, which related to exemption of former owners of ground equipment applying pesticide on occasional basis, was added L.1972, c. 661, § 2, and repealed by L.1973, c. 314, § 1, eff. Jan. 1, 1974.

Subd. 3. L.1973, c. 314, § 2, eff. Jan. 1, 1974, substituted "this article relating to registration and certification" for "this section" and "an individual" for "any person", and inserted "and, who does not regularly use and apply such pesticides on his own property or premises to produce a significant part of his gainful employment or livelihood."

TITLE 13—UNLAWFUL ACTS

§ 33–1301. Unlawful acts

It shall be unlawful:

1. For any person to distribute, sell, offer for sale or use within this state or deliver for transportation or transport in intrastate commerce or between points within this state through any point outside this state any of the following:

[*See main volume for text of a to c; 2 to 5*]

6. For a commercial permit holder to sell restricted use pesticides except to the holder of a non-cancelled purchase permit or to the holder of a commercial permit or a certified applicator.

7. For any person to purchase or possess, except for the purpose of resale, or use any restricted use pesticide without a purchase permit issued by the commissioner or without being a certified applicator.

8. For any person to engage in application of pesticides without a pesticide applicator certificate registration issued by the commissioner, except while working under the direct supervision of a certified applicator.

8-a. For any person or business to engage in the business of applying pesticides unless the business is registered by the commissioner.

[*See main volume for text of 9 and 10*]

As amended L.1978, c. 685, §§ 8, 9.

1978 Amendment. Subd. 1. L. 1978, c. 685, § 8, eff. Sept. 1, 1978, in the opening par. substituted "offer for sale or use" for "or offer for sale".

Subd. 6. L.1978, c. 685, § 8, eff. Sept. 1, 1978, inserted "or a certified applicator".

Subd. 7. L.1978, c. 685, § 8, eff. Sept. 1, 1978, inserted "or without being a certified applicator".

Subd. 8. L.1978, c. 685, § 8, eff. Sept. 1, 1978, deleted "custom" following "to engage in", substituted "pesticide" for "custom", inserted "registration" and "except while

§ 33–1501. Pesticides which may be seized

1. Any pesticide that is distributed, sold, offered for sale or used within this state or delivered for transportation or transported in intrastate commerce or between points within this state through any point outside this state may be seized for confiscation:

[*See main volume for text of a to d and 2*]

As amended L.1978, c. 685, § 10.

1978 Amendment. Subd. 1. L. 1978, c. 685, § 10, eff. Sept. 1, 1978, in opening par. substituted "sold, offered for sale or used" for "sold or, offered for sale".

ARTICLE 35—DETERGENTS AND OTHER HOUSEHOLD CLEANSING PRODUCTS

§ 35–0103. Definitions

The following terms, whenever used or referred to in this article, shall have the following meaning unless a different meaning clearly appears from the context:

[*See main volume for text of 1 to 3*]

4. "Commercial establishment" means any premises used for the purpose of carrying on or exercising any trade, business, profession, vocation, or commercial or charitable activity, including but not limited to laundries, hospitals, and food or restaurant establishments.

As amended L.1975, c. 341, § 1.

1975 Amendment. Subd. 4. L. 1975, c. 341, § 1, eff. July 1, 1975, added subd. 4.

§ 35–0105. Distribution and sale of household cleansing products; possession or use of household cleansing products containing phosphorus by commercial establishments restricted

[*See main volume for text of 1*]

2. No household cleansing product shall be distributed, sold, offered or exposed for sale in this state after December 31, 1971, which shall contain a phosphorus compound in excess of eight and seven-tenths percent by weight expressed as phosphorus. No household cleansing product except those used in dishwashers, food and beverage processing equipment, and dairy equipment shall be distributed, sold, offered or exposed for sale in this state on or after June 1, 1973, which shall contain a phosphorous compound other than such trace or incidental concentrations as may be authorized by the commissioner by regulation. No owner, occupant, or person in control of a commercial establishment shall possess or use or authorize any other person by way of service contract or other arrangement to possess or use in this state any household cleansing product except those used in dishwashers, food and beverage processing equipment, and dairy equipment, on or after January 1, 1976 which shall contain a phosphorus compound other than in such trace or incidental concentrations as may be authorized by the commissioner by regulation.

3. No person shall distribute, sell, offer or expose for sale in this state any household cleansing product which does not comply with regu-

...mended L.1973, c. 384, § 1; L.1975, c. 341, § 2.

...Amendment. Catchline. L. 1975, c. 341, § 2, eff. July 1, 1975, included the possession or use of cleaning products containing phosphorus by commercial establishments.

Subd. 2. L.1975, c. 341, § 2, eff. July 1, 1975, added sentence beginning "No owner, occupant, or person."

1973 Amendment. Subd. 2. L.1973, c. 384, § 1, eff. May 31, 1973, inserted "except those used in dishwashers, food and beverage processing equipment, and dairy equipment."

ARTICLE 36—PARTICIPATION IN FLOOD INSURANCE PROGRAMS [NEW]

§ 36-0101. Statement of findings and purposes

Recurrent flooding of large areas of the state presents serious hazards to and causes adverse effects upon the health, safety, welfare and property of the people of the state, both within and outside such areas, including loss of life, loss and damage to private and public property, disruption of lives and livelihoods, interruption of commerce, transportation, communication and governmental services and unsanitary and unhealthful living and environmental conditions. Flood plain management is, therefore, a matter of state concern and the establishment of improved flood plain management practices is important to the health, safety and welfare of all of the state.

Recognizing the fact that the nation cannot afford the tragic loss of life and property annually caused by flood occurrences, the Congress has passed and the President has signed legislation requiring that communities designated as having special flood hazards participate in the national flood insurance program as a prerequisite to the receipt of certain broad categories of federally related financial assistance, including home mortgage loans, for the acquisition, construction, reconstruction, repair, or improvement of real property located in such areas or for certain facilities to be used therein.

Qualification for participation in the national flood insurance program requires the adoption of adequate land use controls and enforcement measures. While many local governments have individually established such programs, experience has demonstrated that fully effective flood plain management requires land use control in all flood prone localities.

The protection of the health, safety, and general welfare of the people of the state and the assurance of continuation of critically needed financial assistance can, therefore, best be provided by the establishment of effective flood plain controls and enforcement measures, and by facilitating local participation in the national flood insurance program.

Accordingly, the purposes of this article are to reduce flood hazards and losses, and to prevent the termination of critically needed financial assistance by facilitating community qualification and participation in the national flood insurance program. These purposes will be accomplished by assisting local governments in the promulgation of effective flood plain management regulations, by taking advantage of all

...surance that each community adopts a program which will qual... for participation in the national flood insurance program.

It is further the purpose of this article to establish a program assuring that the use of state lands, and the siting, construction, administration and disposition of state-owned and state-financed facilities are conducted so as to minimize flood hazards and losses.

Added L.1974, c. 839, § 1.

Effective Date. L.1974, c. 839, § 2, provided that this section shall take effect Sept. 1, 1974.

§ 36-0103. Definitions

1. "Flood hazard regulations" shall include zoning regulations, subdivision regulations, building codes, housing codes, official land reservation maps and other applications of the police power for the reasonable and prudent use of flood plains in accordance with minimum standards acceptable to the federal government for qualification for participation in the national flood insurance program as authorized by municipal home rule law or other state enabling law. Nothing in this article shall be construed to increase the powers of any local government.

2. "Local government" shall mean any city, town or village.

3. "National flood insurance program" shall mean that program authorized under the federal national flood insurance act of nineteen hundred sixty-eight (42 U.S.C. §§ 4001–4127), as heretofore or hereafter amended.[1]

Added L.1974, c. 839, § 1.

[1] 42 U.S.C.A. §§ 4001 to 4127.

Effective Date. L.1974, c. 839, § 2, provided that this section shall take effect Sept. 1, 1974.

§ 36-0105. Local government responsibility

When a local government is notified by the secretary of the United States department of housing and urban development of such local government's formal identification as a flood prone community, it shall, within ten working days, notify the commissioner.

Added L.1974, c. 839, § 1.

Effective Date. L.1974, c. 839, § 2, provided that this section shall take effect Sept. 1, 1974.

§ 36-0107. Department responsibility

1. Upon receipt of notification by a local government of its formal identification as a flood prone community, the department, in conjunction with the secretary of state, shall provide technical assistance as required to the local government in the preparation of programs necessary to qualify for the national flood insurance program. Such assistance shall include assistance in the development of joint programs by two or more local governments and the provision of model flood hazard regulations.

2. The department shall coordinate with the United States department of housing and urban development to insure current knowledge of the identification of flood prone communities and the status of applications by local governments for participation in the national flood insurance program.

3. If, within three months of the date by which a local government must qualify for participation in the national flood insurance program, the commissioner judges that such local government may fail to qualify, the department shall develop flood hazard regulations for such local

EXHIBIT H

REMOVAL OF PHOSPHATE FROM RIVERS

BY NATURAL, IN-STREAM PROCESSES

Investigator	River	Distance, Miles	% Point Source Soluble Phosphate Removed
Vanderhoff & Baker	Sandusky	30	90
Carlson	Genessee	3	80
Ball & Hooper	(Michigan stream)	6	100 (about)
Keup	South Platte	less than 42	100 (about)

EXHIBIT I

CONSUMER WASHING PROBLEMS

Investigator: Olson, 1978

Data Source: Minnesota Consumer Surveys in 1977 (pre-ban) and 1978 (post-ban)

Results:

	1977	1978
Consumers reporting washing problems	24%	40%

Investigator: Walker Research, 1976

Data Source: Indiana Consumer Survey

Results: 44% of consumers spending more for washing products post-ban.

33% of consumers changed laundry practices as a result of the ban

---

Investigator: Whirlpool Corporation, 1979

Data Source: Consumer Complaints

Results: Non-phosphate detergent problems as a percentage of all reported consumer washability problems.

1975 - 24.3%

1978 - 52.5%

EXHIBIT J

MAX C. FLEISCHMANN COLLEGE OF AGRICULTURE
UNIVERSITY OF NEVADA RENO 89557
DEAN AND DIRECTOR DALE W. BOHMONT
PHONE (702) 784-6611

SCHOOL OF AGRICULTURE
COOPERATIVE EXTENSION SERVICE
AGRICULTURAL EXPERIMENT STATION

March 11, 1981

Assemblyman Robert E. Robinson, Chairman
Committee on Commerce
Nevada State Legislature
Carson City NV 89710

Dear Assemblyman Robinson:

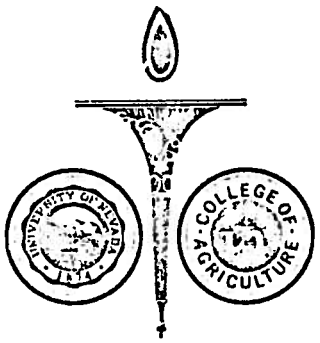
Dr. W. W. Miller who is a quality water specialist in this College and is knowledgeable of phosphates has provided the attached information that may be of help to you and the committee as you review Assembly Bill 147. We would be pleased to forward additional information upon request. Please contact Dr. Miller at 784-6981.

Sincerely,

Dale W. Bohmont

DWB:pm
Enclosure
cc: Assemblyman J.Dini
Assemblyman Alan Glover
Assemblyman David Nicholas
Dr. W. W. Miller

X. C. FLEISCHMANN COLLEGE OF AGRICULTURE
UNIVERSITY OF NEVADA, RENO 89557
DIVISION OF PLANT, SOIL AND WATER SCIENCE



RESIDENT INSTRUCTION
AGRICULTURAL EXPERIMENT STATION
COOPERATIVE EXTENSION SERVICE

March 11, 1981

MEMORANDUM

TO: D. W. Bohmont, Dean and Director

THROUGH: D. E. Gilbert, Chairman PSWS

FROM: W. W. Miller
W. W. Miller, Soil and Water Quality Specialist

SUBJECT: AB-147, 2/11/81
Chairman, Committee on Commerce

In response to AB-147, the University's Cooperative Extension Service has received a number of questions regarding water quality, the role of phosphorous in water pollution, phosphate substitutes in detergents, and cleansing properties of non-phosphate detergents.

The attached material is thus submitted for informational purposes such that the above Chairman and his committee members may better evaluate the proposed legislation.

WWM:mmn
Attach:

759

A. Detergent Ingredients

1. Surfactant -- A "surface active" material containing a hydrophyllic or water attractive component and a hydrophobic or water repelling oil attractive component. These surface active agents perform two functions: a) the hydrophobic component is attracted to the oil in dirt; and, b) they lower the surface tension of the water and thus improve the water's ability to penetrate and loosen the soil from clothing.

2. Builder -- A material that improves the cleaning efficiency of the surfactant by influencing properties in the wash water (i.e., water hardness) that tend to reduce surfactant effectiveness. These materials effectively "soften" wash waters by tying up the calcium and magnesium, thus allowing more effective dispersion of soil particles from clothing.

3. Optical Brightener -- A material that consists of a "blueing" agent that serves to whiten and/or brighten fabric materials.

4. Corrosion Inhibitor -- A material which serves to protect the washer by preventing rust and corrosion of the metals.

5. Others:

a) Suds stabilizer and depressant
b) Antiredeposition agent
c) Perfumes
d) Germicides
e) Enzymes

B. Sodium Tripolyphosphate (STPP): The primary builder for detergents.

1. Functions

a) increases cleaning efficiency by softening water
b) emulsifies grease and oil
c) disperses and suspends inorganic solids and prevents redeposition
d) provides safe and effective wash water alkalinity
e) prevents deposition of "hardness" precipitates on fabrics and machine parts

2. Advantages

a) non-toxic to humans and animals
b) non-irritant to skin and mucous membranes
c) harmless to machinery and equipment
d) safe for textiles
e) non-sequestering for heavy metals
f) fairly easily removed by sewage treatment processes via chemical precipitation

3. Disadvantages

a) a potential contributor towards accelerated eutrophication of lakes and streams if not properly removed by municipal treatments

C. Substitute Materials for Phosphates in Detergents

1. Sodium Nitrilotriacetate (NTA)

This substance is a synthetic material which shows calcium and magnesium sequestering properties (chemical precipitation of calcium and magnesium) similar to STPP.

a) Advantages

Performance wise, NTA has proved very effective. Furthermore, NTA displayed most of the other builder properties characteristic to STPP. The NTA substitute was thus considered a "high performance" replacement for phosphate in detergents.

b) Production of NTA detergents was curtailed in late 1970 upon recommendation of the U.S. Surgeon General. Although many questions regarding NTA remain unanswered, its use was voluntarily suspended by major manufacturers because of a recognized potential for NTA derivates causing possible birth defects. It was also noted that NTA tended to cause detergent materials to "lump-up" resulting in burning and spotting of some fabrics.

2. Sodium Carbonate

This material was not used to a significant extent prior to 1970.

a) Advantages

Sodium carbonate can be used to soften water by precipitating calcium and magnesium hardness. Detergents with elevated levels of this material would contain no, or certainly reduced, phosphate levels.

b) Disadvantages

Calcium and magnesium precipitates occur slowly and are not substantial enough to provide adequate cleaning performance. Such precipitates leave undesirable residues on fabrics and machine parts. Perhaps of greatest concern is that these deposits cause flame-retardent fabrics to lose their effectiveness by seriously impairing flame retardency.

3. Sodium Silicates

The use of this material has been primarily as a corrosion inhibitor for protection of the metal parts in the washing machine.

a) Advantages

Sodium silicate has been shown to provide useful alkalinity and buffering capacity as well as some soil suspending properties characteristic of STPP.

b) Disadvantages

This material shows no significant ability to complex the calcium and magnesium in hard water.

4. Sodium Citrate

This substance is a relatively simple organic compound whose structure might provide improved builder action in detergents.

a) Advantages

This chief advantage of sodium citrate lies in the fact that it has a long established health and safety record. It is rapidly biodegradable in the environment.

b) Disadvantages

Chemically, sodium citrate is a much weaker precipitant for calcium and magnesium than STPP. Formulators typically compensate for this weak property by employing higher levels of surfactant. This weakness in performance tends to limit its use in the formulation of cost/effective products.

5. Sodium Carboxymethyloxysuccinate (CMOS) and Sodium Carboxymethylartronate (CMT).

These are two organic compounds similar in structure to sodium citrate and possess a number of the desired properties required of a suitable STPP substitute. They are very recently developed and are <u>not</u> yet available on a large scale commercial basis.

a) Advantages

These materials offer the best compromise from the standpoint of performance, biodegradability, and potential for commercial manufacture. They are generally acceptable as detergent builders and allow good performance when properly formulated.

b) Disadvantages

Cost projections for these materials indicate that their price will far exceed that of STPP. This price difference relative to phosphates will potentially limit their widespread use in the formulation of cost/effective detergent products. These materials are, thus, not viewed as total replacements for phosphates but as a compromise, and their role is considered primarily as one of an adjunct to effect phosphate reduction (i.e., low phosphate detergents).

To summarize, through studies of the above compounds, a general trend has become apparent: STPP (sodium tripolyphosphate) is almost the ideal builder with respect to sequestering, suspending action, moderate alkalinity, buffering capacity and low cost. The exception is its potential role in freshwater eutrophication. In terms of STPP substitutes, compounds displaying good builder performance are usually large molecules and non-biodegradable. Smaller organic structures have characteristically displayed properties of a weak detergent builder and of erratic biodegradability. Trade-off materials of adequate sequestering capacity and acceptable biodegradability presently are available only on a "pilot" basis and are of substantial cost.

As a final concern, as the phosphate levels in detergents decrease, the use of, and hence, concentration of additional sodium compounds in detergents tends to increase. Sodium, while not as significant to lake and stream eutrophication, is of substantial concern to subsequent agricultural use respective of high sodium waters for irrigation. Excess sodium can disrupt soil structure causing poor infiltration, poor aeration, poor drainage, and poor crop growth as well as contributing to the buildup of soil salinity/alkalinity.

REFERENCES

1. Consumer's Research Magazine. 1978. Amount of phosphate in detergent. In: Letters from CR's readers. No. 1978, p 4.

2. Consumer's Research Magazine. 1981. Clothes washing detergent. In: Letters from CR's readers. Jan. 1981.

3. Consumer's Research Magazine. 1978. Laundry detergents. April 1978, p. 24-29.

4. Consumer's Research Magazine. 1978. Problems with no-phosphate detergents. In: Tips for the consumer. Feb. 1978, p. 2.

5. Creel, Jane, Ed. 1978. Detergents in depth, '78. Third Biennial Symposium. The Soap and Detergent Association, Chase Park Plaza, St. Louis, MO, pp. 87.

6. Purchase, Mary E. 1971. Phosphates and detergents in water pollution. Information Bulletin No. 12, Extension Publication of the New York State College of Human Ecology, pp. 4.

EXHIBIT K

DRAFT 4/8/81

The people of the State of Nevada, represented in the Senate and Assembly, do enact as follows:

Section 1. Chapter 704 of NRS is hereby amended by adding thereto a new section which shall read as follows:

1. A public utility, as defined in this chapter, who furnishes electric service shall offer a special seasonal and interruptible rate schedule to customers utilizing electric service for irrigation pumping purposes. The rate schedule offered shall:

   (a) Provide for a seasonal irrigation rate to be applied to energy consumption during the period May 1 through October 31, inclusive;

   (b) Provide for interruption or curtailment of service based on conditions set forth by the serving public utility and as authorized by the commission;

   (c) Provide for a single rate per kilowatthour of energy consumed. Such rate shall not exceed the lowest energy charge per kilowatthour offered by the public utility under any of its rate schedules applicable to its residential, commercial or industrial customers. No charges shall be included for minimum billings, standby, customer or demand costs.

2. Any rate schedule prepared in compliance with the requirements set forth in section 1 of this act shall be filed with and is subject to review and approval of the commission. The initial rate schedule filing under this act, shall be made by September 1, 1981.

EXHIBIT L

Real Estate Division and Advisory Commission

Recommendation 1: The 1981 Legislature should repeal those provisions of Chapter 688, 1979 that terminate the Real Estate Division, Real Estate Advisory Commission and sections of NRS 645 and 119 and continue to regulate real estate practices and certain land sales activities (Appendix F, BDR 54-116).

The subcommittee concluded, after review of the reports of the Legislative Auditor and Fiscal Analysis Division and hearing testimony of the Real Estate Division, Department of Commerce, members of the Advisory Commission, representatives of the industry and general public, that the absence of regulation would create a potential for substantial economic loss resulting from deceptive or fraudulent business practices and from unprofessional and incompetent real estate practitioners. The public depends on competent and expert brokers and salesmen to handle simple and complex real estate transactions and regulation is warranted to protect the public economic welfare.

The subcommittee also found that the provisions of the Real Estate Licensing Law (NRS 645), the Land Sales Act (NRS 119) and the activities of the Real Estate Division and Advisory Commission do act to protect the public from potential loss and help insure that only competent and professional persons are allowed to practice. In addition, the subcommittee found that the Division and the Advisory Commission have generally acted in the public interest and that the cost of regulation is not excessive considering the potential for loss in the absence of regulation.

The subcommittee did find many areas of the regulatory process, however, that require legislative or administrative action in order to increase the effectiveness and efficiency of the Division and Advisory Commission. These findings and recommendations are included here in the balance of this section.

Recommendation 7: The Legislature should adopt a fee schedule that covers the cost of regulation based on the budget approved for the agency for the next biennium (Appendix F, BDR 54-116).

The cost of regulation of real estate practitioners and land sales is supported by General Fund appropriations. In turn, all real estate licensing fees and land sales fees are deposited in the General Fund. The review prepared by the Fiscal Analysis Division revealed that fees collected by the agency were less than the cost of regulation paid from the State's General Fund. During the 1978-79 biennium this deficit was $104,000 and, based on the 1980-81 biennial budget and agency revenue estimates, this difference is anticipated to grow (see Appendix B, page 12).

The subcommittee feels that licensing and related fees should at all times cover the cost of regulation. The subcommittee noted that all other occupations regulated by the State of Nevada are self-supporting from fee revenue and that the real estate broker license fee in Nevada has not been increased since 1956 and the salesman license fee has not increased since 1963. When expenditures exceed revenues, the cost of regulation is shifted from the licensee and the buying and selling public to the general public.

The Subcommittee recognizes that the Division is in the process of preparing their biennial budget using the zero-based budgeting concept and that this exercise plus the implementation of a new computerized licensing system should streamline the regulatory process and produce savings. In addition, the subcommittee believes that certain recommendations of this report such as combining the applications and licensing sections, administering the examination first and background investigation last, funding a portion of the education coordinator position from the education fund and the development of agency goals and objectives could increase the efficiency of agency operations and minimize the impact of any fee increase. Based on 10 percent yearly increments to the current Division budget, the subcommittee estimates that a $25 per year increase in brokers, broker-salesman and salesman license fees will bring revenues in line with expenditures. This amounts to a $50 increase in the actual license fee since it is for a 2-year period. The subcommittee also recommends that fees for penalties and branch offices be increased in line with the proposed license fee increase and that an initial continuing education course accreditation fee of $50 and an annual renewal fee of $10 be established. In addition, the subcommittee found that the fees derived from the regulation of subdivisions (NRS 119, Land Sales Act) did not cover the cost of that activity and therefore recommends the establishment of a $25 application fee that must be paid by all subdivision requests including those that are later determined to be exempt from regulation. The subcommittee recognizes that changes to the Division's budget that occur during the budgetary process may require adjustments to the proposed fees. The following table depicts the fee changes recommended by the subcommittee. The subcommittee recommends that all other existing fees in NRS 645 and 119 should remain the same.

Fee	Existing	Proposed
Original Broker License (2 years)	$80	$130
Original Salesman License (2 years)	50	100
Original Branch Office (2 years)	50	100
Penalty, Failure to File - Broker	40	65
Penalty, Failure to File - Salesman	25	50
Renewal, Brokers License	80	130
Renewal, Salesman License	50	100
Renewal, Branch Office	50	100
Penalty, Late Filing Broker	40	65
Penalty, Late Filing Salesman	25	50
Original Continuing Education Accreditation	-0-	50
Renewal, Continuing Education Accreditation	-0-	10
Subdivision Application Fee (NRS 119)	-0-	25

The subcommittee considered a recommendation to reduce the $40 education, research and recovery fund fee to partially offset the recommended increase in license fees. The subcommittee noted that the Advisory Commission had been urged by the Nevada Association of Realtors to increase the level of research and education expenditures in order to deplete the large surplus that had accumulated in the fund and avoid any possibility that the Legislature might require reversion of these excess funds to the state's general fund (the education account fund balance for fiscal year 1979-80 was $444,216). The subcommittee is not recommending reduction of this fee, however, since both the Division and the Association testified that the demands on that fund for real estate courses as a result of continuing education requirements were increasing. The Association also testified its membership opposes reduction of this fee.

Recommendation 8: The Division should establish formal goals and objectives for their organization and develop an internal information system which has the capability of measuring program effectiveness.

The Legislative Auditor reported that the Division has not established written goals and objectives and has not developed an information system that would allow management to determine if intended results were being achieved (see Appendix A, page 28.17). Because of this lack of stated goals and information, the Legislative Auditor was unable to fully evaluate the results of the Division's activities. The subcommittee feels that establishment of goals and objectives and the means to evaluate the Division's performance

in meeting those goals is a basic principle of sound management and a necessary activity. The Division indicated, during the course of the subcommittee hearings that goals and objectives and methods of measuring effectiveness would be developed.

Recommendation 9: The Division should discontinue depositing fees directly into the education and research account of the ERRF fund. All fees should be deposited in the recovery account and the balance over $50,000 transferred to the education and research account at the end of the fiscal year pursuant to NRS 645.842.

NRS 645.842 states in part, "any balance over $50,000 at the end of any fiscal year shall be set aside and used by the administration, after approval of the Commission, for real estate education and research." The Division's current practice of maintaining a $50,000 balance in the recovery account and depositing all fee receipts directly into the education account makes these moneys immediately available for obligation and expenditure for education and seems to be in violation of the law. In addition, obligation or expenditure of these funds prior to the end of the fiscal year for education reduces the resources available to pay court ordered recoveries and provides a lesser degree of public protection (see Appendix B, page 17).

The subcommittee recommends and the Division has agreed to discontinue the present practice and to begin holding all ERRF fees in the recovery account until years end.

Recommendation 10: The Division and Advisory Commission should expand the presentation of the Education and Research account in the "Executive Budget" to disclose the proposed actual uses of the funds for legislative review.

The Executive Budget presentation of the education and research accounts simply lump all available resources into a proposed expenditure line-item of education. Actual expenditures from this fund have included out-of-state travel of the Advisory Commission and legal staff to national conventions, travel of Division staff, and for the publication costs of a quarterly newsletter. These other expenditures were made without specific Legislative review or approval.

The subcommittee believes that adequate legislative review of agency plans through the budget process depends on candid and complete descriptions of proposed expenditures. The

subcommittee feels that an expanded Executive Budget presentation will provide sufficient legislative control over proposed expenditures and that more specific statutory language governing acceptable uses of these funds is not necessary (see Appendix B, page 17).

Recommendation 11: A portion of the Education Coordinator position should be funded from the ERRF fund corresponding to the amount of time spent on fund activities or programs (Appendix F, BDR 54-116).

The Education Coordinator position spends considerable time performing ERRF fund activities such as coordinating the educational program, preparing the quarterly newsletter and preparing recommendations on ERRF sponsored courses. This position is currently funded entirely from General Fund resources (see Appendix B, page 17). The subcommittee feels the ERRF fund should share in the cost of this position based on the amount of time spent on fund programs. The General Fund should only be responsible for time spent in the regulatory process. The subcommittee also recommends that NRS 645.842 be amended to include Division expenses in operating the education program as an authorized expenditure from the ERRF fund.

Recommendation 15: The Division should evaluate and recommend regulatory and statutory changes necessary to consolidate the application for examination and application for licensing procedures into a single process. Background investigations should be conducted only for those applicants who successfully pass the exam (Appendix F, BDR 54-116).

Current statutory procedures require two application processes in order to become licensed. One application is required to become eligible to take the examination and another is required to obtain the license if the applicant successfully completes the exam. All determinations as to an applicants suitability to be licensed are conducted before being qualified to sit for the examination. The Fiscal Analysis Division found in their review, however, that only about half of all applicants successfully completed the examination. The current process requires a certain amount of duplication and unnecessary effort in reviewing qualifications of many applicants who will never be licensed (see Appendix B, page 24).

The subcommittee believes that revamping the application process to eliminate duplication and unnecessary tasks will serve to promote efficiency and budgetary savings within the Division and better service for the public. The subcommittee also recognizes that the statutory language should be added that makes it clear that taking the examination creates no vested rights for the applicant and that all other license requirements including education and the demonstration of suitability to practice real estate must be met before the license can be granted. The Division has concurred in this recommendation.

Recommendation 16: The Division should consider combining the applications and licensing staffs into one section and consolidating the application for examination and application for licensure forms.

The subcommittee feels that the Division could more effectively use available resources and produce budgetary savings if the licensing and applications sections were combined. Since these sections both deal with the same individuals and the same files, the adoption of the subcommittee's recommendation to consolidate the application process (see Recommendation 17) would seem to mandate the consolidation of the staff. The subcommittee also notes that a new computerized licensing system is being developed for the Division by Central Data Processing and that this would be the ideal time to consolidate staff as well as the separate application forms. In the process of computerization the Division and Central Data Processing have undertaken an examination of all licensing forms in order to eliminate duplication and unnecessary data. The subcommittee anticipates that this process will result in additional savings to the Division (see Appendix B, page 24).

Recommendation 21: The Divison should evaluate the need for the current number of investigators taking into account cyclical trends.

Through analysis of the 1978-79 investigative caseloads the Legislative Auditor found an inequitable caseload distribution among the compliance staff. The analysis indicated that individual caseloads ranged from 14 to 27 open cases during the review period when 50 cases is considered maximum. The audit report also noted that agency auditors were performing investigations during this period when investigative caseloads were less than half of the maximum caseload. Although the Division disagrees with the audit report and maintains that the number of cases is not the only indicator of an efficient caseload distribution and staff requirement, the subcommittee feels that a thorough evaluation by the Division is in order and anticipates that budgetary savings may be possible (see Appendix A, page 28.20).

Recommendation 31: Provisions of NRS 645 should be amended to provide that a written transcript of Commission hearings should only be required if requested by someone and the cost should be born by the requester (Appendix F, BDR 54-116).

NRS 645.440, 645.690 and 645.760 all provide that any party to proceedings held before the Commission appealing a decision of the Division are entitled to a written transcript of the hearing at a cost of 25 cents per folio. Transcripts currently cost $2.35 a page for originals and $.75 a page for copies. NRS 645.760 also requires the Division to purchase a transcript whether or not anyone has requested it.

The subcommittee feels that transcripts should only be prepared when a need is demonstrated or when a party to the proceedings requests it provided that the tapes from which the transcripts are prepared are retained past all appeal deadlines. In addition, the subcommittee recommends that the cost of the transcript should be born by the requester as long as those costs are reasonable and proper.

Recommendation 32: NRS 645.540, which requires that the Division prepare and deliver to each licensee a pocket card, be repealed (Appendix F, BDR 54-116).

In addition to the official license which must remain at the brokers office each licensee is provided a pocket card which identifies the licensee and, in the case of a salesman, the broker with whom the licensee is associated. The Division has recommended and the subcommittee agrees, that this requirement should be deleted since the cards serve no useful purpose, duplicate the license itself, creates an unnecessary expense for the Division and are a bother both to the Division and the licensee.

The subcommittee believes that no additional protection is afforded the public by the pocket card and deletion of this requirement will eliminate unnecessary procedures and increase efficiency of the licensing process.

EXHIBIT M

MICHAEL L. MELNER
ATTORNEY AT LAW
216 EAST LIBERTY STREET
POST OFFICE BOX 275
RENO, NEVADA 89504
TELEPHONE (702) 323-3873

April 3, 1981

TO: BOB BOWERS

FROM: MIKE MELNER

I think it could be argued against legislation placing consumers on the Real Estate Advisory COmmission, that such a concept violates basic precepts of administrative law. Administrative law was developed for a couple of reasons. One of them was to have people with technical expertise decide issues within the area of their expertise without having to clog up the judicial system. Boards, Commissions and administrative agencies were granted certain kinds of quasi-legal power because of their technical expertise. When the technical expertise fails or a decision cannot be reached, then the judicial process is used. Placing a non-expert in a position in which expertise is required defeats the very purpose of an administrative agency.

There are plenty of "consumers" represented in the court system, as judges or juries. The judicial function and the administrative function should be separated. The proposal seems to confuse the purpose of administrative law system with the purpose of the judicial system. Administrative law is special because it is away from the judicial system and uses technical expertise. Only brokers have that expertise. Any consumer who would have to make a decision would have to use the technical expertise of the broker and would have to be educated. Such education could take a long period of time, and of necessity, would "co-opt" the consumer, since the consumer would have to be trained by the broker. This would only extend the process and change what it is.

EXHIBIT N

S.B. 193

TESTIMONY PRESENTED TO

ASSEMBLY COMMERCE COMMITTEE

By

NEVADA ASSOCIATION OF REALTORS®

The Nevada Association of REALTORS® would like to commend the work of the Subcommittee of Sunset Reviews for its review of the Division of Real Estate and the Real Estate Advisory Commission.

We find ourselves generally supportive of S.B. 193 as amended in the Senate which is the result of that review. Specifically we are in support of the increase in licensing fees and the new fee for accreditation of continuing education courses, the elimination of the dual application procedure, the elimination of a mandatory trust account and the inclusion of the requirement for fingerprinting.

We oppose the inclusion of a member of the public on the Real Estate Advisory Commission. We concur with the Director of the Department of Commerce who has opposed this change based on the fact that the commissioners' purpose is "familiarity with the business, not representation of interest groups." Indeed, a review of the professions whose boards have members of the public seems to merely substantiate the fact that it is a "cosmetic" and meaningless change since most members of the public serving on those boards are precluded from participating in the evaluation of a licensee's professional qualifications. In addition, as the Director has said, past performance has shown that the interests of the general public were held of no less importance than that of the licensee or the industry. Further, it would seem almost impossible to find a member of the public knowledgeable enough and willing to devote the number of hours required who would not be in a position of judgment on potential clients or customers. (e.g. escrow or title personnel, banking personnel). And finally, the Commissioners appointed to serve take their responsibility for maintaining a high standard of professionalism and protection of the buying and selling public very seriously. They have a personal stake in doing so BECAUSE they are real estate brokers. They must be like Caesar's wife - above reproach.

Additionally, we are opposed to the requirement that one of the members on the Commission be a salesperson. This is contrary to the basic concepts of Nevada real estate license law which requires brokers to be responsible for the education and supervision of salespeople. With that concept in mind, it makes little sense to have a salesperson on the Commission.

In addition, brokers appointed to the commission typically have more experience, training and knowledge of the industry than most salespeople. We need to retain people with these qualities to provide for the stongest, most equitable enforcement of our license laws.

The Association strongly opposes both the removal of the required approval of Education, Research and Recovery Fund expenditures by the Real Estate Advisory Commission and the use of those funds to defray Division operating expense. Current law provides a check and balance system which enables the Division staff to review and recommend courses based on compliance with requirements for content and for cost effectiveness. But Division staff who are not involved in the day-to-day industry cannot effectively evaluate the need for particular subject matter, a function of the Commission. Courses which benefit the licensee and ultimately the buying and selling publi must be timely and indeed, are required to be. At present, both the expertise of the Division and the Commission are available for determining fund expenditures to insure that maximum benefit is derived. The check and balance system should remain in place.

Use of Education Research and Recovery Fund monies to fund division operation is contrary to the purpose of the Fund. The Association has supported both an increase in licensing fees and the addition of new fees for accreditation of continuing education courses. The proposed new fees alone cover 20% of the education coordinator's salary. The remainder, and properly so, is covered by the increase in license fees. The duties and functions of the Coordinator of Education would be required whether or not there was an Education, Research and Recovery Fund. Licensees pay $20 per year into that Fund for the exp and intended purpose of research and education and not to pay expenses which are already being covered or should be covered by their license fees. Again, we assure the Committee of our support or a fee structur which would make the Division self-supporting but ask that provision for the Education Coordinator's salary and travel be made only once, not twice, and that it be made in the Division's operating budget insuring the integrity of the Education, Research and Recovery Fund. The purpose of the Fund is not to subsidize Division operations.

Respectfully submitted,

W. E. Cozart

William E. Cozart, CAE
Executive Vice President

WEC:kb

EXHIBIT N-1

NEVADA ASSOCIATION OF REALTORS®

SUGGESTED AMENDMENTS TO S.B. 193

(First Reprint)

PAGE 2

Lines 19-25 delete: brackets

Lines 26-36 delete: new language in its entirety

PAGE 8

Line 50 the commission may fine, suspend or revoke...

PAGE 11

Lines 15-16 delete: brackets around "after approval"

delete: new language "with the advise of"

Lines 17-18 delete: brackets around "research"

delete: new language "research and the direct costs to the Division to operate such programs."

Add: No money from this fund shall be used for division personnel salaries or division personnel travel.

NEW SECTION AMENDING 645.630

The commission may suspend, revoke or reissue subject to conditions any license issued under the provisions of this chapter at any time where the licensee has, by false or fraudulent representation, obtained a license, or where the licensee, whether or not acting as a licensee, is found guilty of:

11. Inducing any party to a contract, sale or lease to break such contract for the purpose of substituting in lieu thereof a new contract with the same principal or a different principal, where such substitution is motivated by the personal gain of the licensee.

EXHIBIT O

NEVADA ASSOCIATION OF REALTORS®

SUGGESTED AMENDMENTS TO S.B. 269

(First Reprint)

PAGE 2

Line 25

This credit shall not delete the requirement that any person applying for an original broker or broker-salesman's license must comply with Section 1, Subsection 2, which requires at least 15 classroom hours of the real estate law of Nevada.