

UNIVERSITY OF GUAM

FROM THE DESK OF: LUIS SZYFRES,
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CLINICAL EPIDEMIOLOGY; CLINICAL
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Center for Bioinformatics &
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AND

Member Guam's Legislature: Guam Right
to Know Commission. Hagatna, Guam

AND

A. Professor, College of Natural &
Applied Sciences. University of Guam (UOG)

MEMORANDUM

To: Dr. Lee Yudin
From: Luis Szyfres, MD, MPH
Re: Dr. Yudin's letter of warning
Date: January 14, 2007

Dear Dr. Yudin:

We had two meetings about my research on the contamination of Guam with toxic chemicals and its effects in the health of the population. In the first meeting, I informed you that after presenting the issue to the Legislature of Guam, the senators decided to create the Guam Right to Know Commission, to which I was appointed by the speaker of the house. (Annex 1)

In hour second, and long meeting, I presented to you all the facts about the environmental contamination with toxic chemicals not only of Guam, but of the Guamanians as well.

About the statement in your letter: “..This memorandum constitutes a written warning with respect to inaccurate and false statements made by you to the Marianas Variety...”, I would like to present the following facts:

1. ABOUT THE CONTAMINATION OF GUAM'S ENVIRONMENT, ACCORDING TO THE UNIVERSITY OF GUAM, OF WICH YOU ARE A DEAN..... “AN IRONY”:

The University of Guam, of which you are a Dean, published in response to my interview by the Marianas Variety about Guam's contamination with toxic chemicals, the next day, and in the same newspaper the following statement: “Also, the U.S. Geological Survey, at our request, tested soil and water samples throughout Guam in 2002 and found no evidence for potentially toxic amounts of metals”...IRONICALLY, A SIGNIFICANT AMOUNT OF THE EVIDENCE OF GUAMS' CONTAMINATION WITH TOXIC CHEMICAS IS FROM....THE UNIVERSITY OF GUAM, IN WHICH YOU ARE A DEAN!.

a. Guam Environmental Protection Agency. Gov. of Guam. Sediment Contamination Study. 2000

-Agana Boat Basin had high levels of COPPER, LEAD, and ZINC. The shallow waters close to shore at the Merizo Pier had HEAVY COPPER, LEAD, TIN, and ZINC concentrations. The highest levels of contaminants were at Apra Harbor, where moderate to heavy enrichment of COPPER, LEAD, MERCURY, TIN, ZINC, PCB'S and PAH'S were identified in sediments collected near Hotel Wharf, Commercial Port and Dry Dock Island. The recently constructed Agat Marina had lowest contaminant levels, showing CHROMIUM contamination (UNIVERITY OF GUAM, PROFESSORS: GARY DENTON, H.R. WOOD, L.P. CONCEPCION, H.G. SIEGRIST, V.S. EFLIN, D.K. NARCIS, and G.T. PANGELINAN, 1997).

-Inner Apra Harbor may have the highest levels of sediment contamination on Guam, based on limited sampling for the Navy which showed, for example, elevated levels of TIN. These tin

levels rank among the highest concentrations ever recorded in harbor sediments world-wide (UNIVERSITY OF GUAM. PROFESSORS: GARY DENTON, H.WOOD, L. CONCEPCION, H. SIEGRIST, V. EFLIN, D.K. NARCIS, and G.T. PANGELINAN, 1997).

Contaminant

Bio-Uptake Study

-Increases in ARSENIC, COPPER, LEAD, MERCURY, TIN, and PCB'S recorded in certain biota (the combined flora and fauna of a region), at localized sites, mostly in Apra Harbor.

Levels of contaminants in edible parts of consumed organisms were significant or indicative of real health risks for COPPER and ZINC in OYSTERS in Apra Harbor and Agana Boat

Basin and ARSENIC in the Apra Harbor OCTOPUS. MERCURY was found in muscle tissue at a level above Canadian and Australian standards in three out of seventy-five FISH sampled; two edible fishes and one lizardfish from Apra Harbor.

Potential Impacts of SedimentContaminants on Human Health

Physical contact with sediment contaminants found in Guam harbors, at the levels observed (UNIVERSITY OF GUAM PROFESSORS: GARY DENTON, H.R.WOOD, L.P.

CONCEPCION, H.G. SIEGRIST, V. EFLIN, D. NARCIS, and G.PANGELINAN, 1997), would not pose a notable health risk. Ingestion of measurable amounts of the contaminated sediments would not reasonably be expected. However, sources of health risk may arise through uptake of contaminated sediments or their pollutants by harbor organisms and passage through food chains to human consumers. Bio-accumulation of heavy metals and PCB's from sediments potentially can make marine organisms unacceptable for human consumption.

-PCB's are linked to increased cancer risks, disruption of women's reproductive function and to neurobehavioral and developmental problems in children born to women exposed to PCB's and are also associated with other systemic effects (e.g., liver disease and diabetes, compromised immune function, and thyroid effects). A comparative analysis of PCB levels in organisms in Guam harbors with levels in related species elsewhere (UNIVERSITY OF GUAM. PROFESSORS: GARY DENTON, L.P. CONCEPCIONB, H. WOOD, V.S. EFLIN, and G. PANGELINAN, 1999) indicates mild enrichment extending to moderate levels in certain species at localized sites in Apra Harbor.

Administration's food standard.

-The levels of COPPER and ZINC in filter feeding OYSTERS from Agana Boat Basin and parts of Apra Harbor exceed standards applied in Australia for fishery products (UNIVERSITY OF GUAM PROFESSORS: GARY DENTON, L.P. CONCEPCIONB, H. WOOD, V.S. EFLIN, and G. PANGELINAN, 1999).

-The OCTOPUS from Apra Harbor had arsenic concentrations comparable to those found in related species in other countries, but could cause deleterious health effects to a person consuming in excess of 60 grams of this per day (UNIVERSITY OF GUAM PROFESSORS: GARY DENTON, L.P. CONCEPCIONB, H. WOOD, V.S. EFLIN, AND G. PANGELINAN, 1999).

Potential Impacts of SedimentContaminants on Natural Resources

-COPPER and TIN are undoubtedly toxic to marine invertebrates.

UNIVERSITY OF GUAM, PROFESSOR R. HESLINGA 1976 research showed COPPER impacts on larvae of a common species of SEA URCHIN from Guam's reefs. Copper can be acutely or chronically toxic to aquatic organisms through exposure in water or in sediments.

Dredging Methodology and Water Quality

-Some heavy metals found in Guam, such as MERCURY, LEAD, and CADMIUM, are excreted very inefficiently by the human body and even if exposure to these metals is extremely minute, their levels may still exceed the quantity that the body can excrete and, consequently, toxic levels may be achieved after several years of chronic exposure. In addition to lead poisoning, effects of these metals include chronic fatigue syndrome, fibromyalgia and multiple chemical sensitivity syndrome.

-MERCURY has been recognized as the most significant metal contaminant derived from FISH consumption. Even minute quantities of mercury are extremely toxic. When mercury from contaminated SEAFOOD accumulates, the immune system becomes weakened, the detoxification capacity of the liver and kidneys is diminished, hormones become poorly regulated, and the NERVOUS SYSTEM system becomes impaired. Allergies, chemical sensitivities, gastrointestinal disturbances, depression, anxiety, headaches, muscle and joint pains, chronic fatigue, frequent infections, abnormal gastrointestinal flora and hormonal disturbances are just a few of the many symptoms which have been linked with chronic mercury toxicity.

-Although PCB'S bioaccumulate and concentrate through food chains leading to humans being exposed when they consume contaminated FISH. Cancer risks can arise from PCB intake and maternal consumption of PCB contaminated fish is associated with adverse health of children. Certain polycyclic aromatic hydrocarbons (PAH'S) are potentially carcinogenic. They are also released from sediments through dredging activities.

Potential Impacts of Dredging Contaminated Sediment on Natural Resources

-PCB'S and PAH'S also may be released to food chains, and that PCB'S of sufficient doses can produce an immunosuppressive effect and induce hepatic microsomal enzyme systems. They have the ability to bioactivate relatively nontoxic compounds in cells to become cytotoxic or genotoxic metabolites. Some PAH'S are carcinogenic to animals (UNIVERSITY OF GUAM PROFESSORS: GARY DENTON, H.R. WOOD, L.P. CONCEPCION, H.G. SIEGRIST, V.S. EFLIN, D.K. NARCIS, and G.T. PANGELINAN, 1997)

-Based on Guam studies by the UNIVERSITY OF GUAM, PROFESSORS S.AMESBURY, C.BIRKELAND, M.CHERMIN, R.CLAYSHULTE, F. CUSHING, J.DAY, R.DICKENSON, J. EADS, L. ELDREDGE, D. GROSENBAUGH-HAMEL, S.HEDLUND, R.KOCH, J.MARSH, C.NEUBAUER, S.NEUDECKER, R.RANDALL, R. TSUDA. 1977, accumulation of finer sized sediment fractions has a greater inhibiting effect on the recruitment and growth of corals than does the larger sized fractions. It is not known whether the severity of impacts from pollutants in Guam harbor sediments would be distributed differentially with the size of sediment fractions. - But sediment particle sizes in Guam harbors tend to be predominantly sand sized (greater than 0.063mm diameter) with less than 10% being smaller silt particles (UNIVERSITY OF GUAM PROFESSORS: GARY DENTON, H.R. WOOD, L.P. CONCEPCION, H.G. SIEGRIST, V.S. EFLIN, D.K. NARCIS, and G.T. PANGELINAN, 1997).

Sources of Pollutants in Sediments

-Garbage dumps by the U.S. Military on Guam included the Navy Orote Landfill, which from 1944 to 1969 deposited many tons of discarded metals, as well as industrial and construction wastes (Navy Energy and Environmental Support Activity, 1983). Contaminants in this waste include PCB'S, PAH'S, ORGANOCHLORINE PESTICIDES, DIOXANS, FURANS, and METALS.

-The Navy supplied nuclear submarines and other surface ships at Apra Harbor, operated dry cleaning and printing plants, treated building materials with preservatives, stored and operated floating power plants, transferred ammunition and possibly nuclear weapons, etc.

-A study by the UNIVERSITY OF GUAM PROFESSORS: GARY DENTON, L.P. CONCEPCION, H. WOOD, V.S. EFLIN, and G. PANGELINAN, 1999, indicates that boat maintenance appears to be the main contributor to the boat-source pollutants found in the Guam harbor.

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Randall, R.H., and L.G. Eldredge. 1974(b). A Marine Survey for the Sleepy Lagoon Marina. University of Guam, Environmental Survey Report No. 14.

b. Another irony...there are numerous studies on the contamination of Guam with toxic chemicals conducted by US. Federal Agencies: the U.S. Environmental Protection Agency (EPA), the U.S. Agency for Toxic Substances & Diseases Registry (ATSDR), the U.S. Department of Defense (DOD), the U.S. Army Corps of Engineers, the U.S. Department of the Navy, etc. All the specialized federal agencies concur in that the environment of Guam is

contaminated.... except the University of Guam, that conducted numerous studies proving that the environment of Guam is contaminated?

The university of Guam, based in the geological survey (the US Geological Survey was established on 1879, and placed it in the Department of the Interior, with the objective of conducting the classification of the public lands. Mapping of the public lands was begun under the direction of the Surveyor-General, but no special provision was made for classification of the public lands, and it thus became the responsibility of the surveyor), is over-ruling several “specialized” federal agencies, including:

THE US AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY (ATSDR)

The US. Agency for Toxic Substances & Diseases Registry (ATSDR) is a federal public health agency of the U.S. Department of Health and Human Services, based in Atlanta, Georgia. ATSDR was established by the United States Congress with the mandate to perform specific functions concerning adverse human health effects and diminished quality of life associated with exposure to hazardous substances.

ATSDR is responsible for assessment of waste sites and providing health information concerning hazardous substances, response to emergency release situations, and education and training concerning hazardous substances (ATSDR Mission Statement, November 7, 2001).

THE US ENVIRONMENTAL PROTECTION AGENCY (EPA)

Born in the wake of elevated concern about environmental pollution, the U.S. Environmental Protection Agency was established in 1970, with the mandate to consolidate in one agency a variety of federal research, monitoring, standard-setting and enforcement activities to ensure environmental protection. EPA's mission is to protect human health and to safeguard the natural environment—air, water, and land—upon which life depends.

AND,

AS DESCRIBED ABOVE, THE UNIVERSITY OF GUAM IS ALSO OVERRULING.... ITSELF?.

2. ABOUT THE PRESENCE OF TOXIC CHEMICALS IN THE GUAMANIAN, AND ITS POSSIBLE ASSOCIATION WITH MULTIPLE DISEASES OF MANY ORGANS AND SYSTEMS (INCLUDING LYTICO-BODIG):

a. We had two meetings with about the contamination of Guam’s Environment with Toxic Chemicals, in which we discussed in detail the type of toxic substances, locations, concentrations, dispersion through evaporation/rain/wind/infiltration, and their health effects in the population. In relation to the presence of the toxic chemicals, we spoke about a very good example... Lytico-Bodig, and many years of studies of the brains of Chamorro, proving the presence of toxic metals in the Brain...that the only way that the metals can enter the Brain is through the Blood.... that the only way that the metals can enter the Blood, by Eating Food, Drinking Water, or Breathing Air, contaminated with toxic metals. By the way, that is in the same newspaper (Marianas Variety).

b. About Lytico-Bodig, there is no such a thing as “cause” in observational epidemiology, only

“associations”. We spoke in detail about this issue with Ms.Cathleen Moore-Linn, she explained to me that the M. Variety does not have personnel specialized in health. I requested the newspaper to publish a clarification, and they did.

c. As in your Memo you only talk about this issue in the M. Variety, you obviously read about it. I am including the clarification to refresh your memory:

MARIANAS VARIETY

“Unknown to the residents of Guam, the food they eat, the water they drink, and the air they breathe are contaminated with toxic chemicals,” Szyfres said. “The toxic chemicals enter the person’s bloodstream and may affect any organ orsystem in the body.”

“The fact that the only way that toxic heavy metals can get to the brain is through the blood, and that they can only get to the blood through the food, water, or air contaminated with heavy metals, proves that the toxic chemicals are not only in the environment of Guam, but in Guamanians as well,” he added.