2009 Legislative Session

Vog Measures – Background Information

H.B. No. 312, Relating to Hazardous Substances

- The elderly, young children, and individuals with respiratory ailments are more prone to the adverse effects of vog. Because vog affects everyone differently, the Department of Health urges people to be aware of their own health conditions, rather than wait to be alerted as to when medical attention should be sought, or when action should be taken to remove themselves from an area with poor air quality.
- Readings from monitors that detect sulfur dioxide (SO_2) can help individuals make more informed decisions about how to respond to current levels of vog.
- The Special Committee on Vog Effects heard concerns about the number and placement of monitors on the island of Hawaii.
- According to the University of Hawaii Center for the Study of Active Volcanoes, SO_2 levels change as vog moves away from the vents, depending on distance and weather conditions. SO_2 is a highly reactive gas, which in a relatively short period of time will change to sulfuric acid and dissipate. Therefore, SO_2 levels change quickly over time, and vary from one area to another. Monitors spread throughout the state can provide current information about SO_2 levels.
- H.B. No. 312 directs the Department of Defense to develop and implement a program to ensure that an adequate number of monitors are strategically placed throughout areas of the state where the presence of vog, SO_2, or both, reaches levels that present a danger to health and safety.

H.B. No. 313, Relating to Highways

- Guardrails along the State's highways are devices that provide added safety to the road. Guardrails are currently made of metal material that deteriorates at a faster rate due to acid rain that may result from vog.
- Deterioration of these guardrails creates a public hazard.
- Guardrails are high-cost items.
- The Department of Transportation is responsible for maintaining and inspecting the guardrails on State highways.

- H.B. No. 313 requires the Department of Transportation to conduct inspections of guardrails on the island of Hawaii on a more frequent basis, to determine the integrity of the guardrails and any problems that may have been caused by acid rain. The guardrail inspection program will allow the department to find deteriorated guardrails and prevent a potential safety hazard.

- H.B. No. 313 also requires the department to look at other possible materials and means to prevent the deterioration of guardrails due to acid rain. For example, plastic-type guardrails may not deteriorate as quickly as the metal-type, thus providing both highway safety and cost savings to the department and ultimately the State.

H.B. No. 314, Relating to Workers' Compensation

- Hawaii's workers' compensation laws fall under the jurisdiction of the Department of Labor and Industrial Relations.
- Acute effects from exposure to vog include headaches, breathing difficulties, increased susceptibility to respiratory infection, watery eyes, and sore throat. Those who, due to their work duties or work environments are exposed to higher or consistent levels of vog, may experience conditions that make work intolerable or affect their ability to work in general. Workers who spend a significant amount of time outdoors, such as construction workers and road maintenance crews, may be susceptible to vog conditions. Workers indoors may also be affected by vog if there are no filtration systems in place.
- Because the effects of vog on work duties or work environments have only become an issue relatively recently, the Department of Labor and Industrial Relations does not have guidelines on who can receive workers' compensation for what vog-related medical conditions, nor a process for filing these claims. Thus, currently, such claims may be denied.
- H.B. No. 314 requires the Department of Labor and Industrial Relations to develop and implement rules governing workers' compensation claims that are filed for vog-related medical conditions, in consultation with such parties as the Department of Health, workers' compensation insurers, healthcare providers, and healthcare insurers.

H.B. No. 315, Relating to Volcanic Emissions

- Acute effects from exposure to vog include headaches, breathing difficulties, increased susceptibility to respiratory infection, watery eyes, and sore throat. The long-term health effects of vog are still unknown. These confirmed and unknown health risks are of particular concern for those who, due to their work duties or environments, may be exposed to higher or consistent levels of vog. This includes workers who spend a significant amount of time outdoors, such as construction workers and road maintenance crews.
- Because formal and coordinated responses to vog are still being developed, it is uncertain whether there are any work safety standards specifically tailored to address vog. There are also lingering questions:
    - Which occupations should apply work safety standards to address exposure to vog?
    - What amount of vog exposure constitutes a danger to worker safety?
- H.B. No. 315 requires the Department of Labor and Industrial Relations, in consultation with the Department of Health and the Interagency Task Force on Vog, to establish occupational safety and health standards to promote worker safety during high incidences of vog or sulfur dioxide. The Department of Labor and Industrial Relations is to identify the types of workers to be protected by these standards and determine the amount of vog or sulfur dioxide that presents a danger to these workers.

H.B. No. 316, Relating to Agriculture

- The Special Committee on Vog Effects heard testimony from the University of Hawaii College of Tropical Agriculture and Human Resources that discussed some of the harmful effects of vog on fencing and other ranching infrastructure. These fences deteriorate at a faster rate due to vog and acid rain that may result from vog.
- Tenants who lease agricultural land from the State are required to maintain fencing and other infrastructure.
- The harmful effects of vog may cause financial hardships for the tenants, who must allocate more resources for the repair and maintenance of the agricultural infrastructure.
- H.B. No. 316 provides these tenants with financial relief through a temporary reimbursement program that reimburses qualified tenants for the costs they incur in repairing and maintaining their agricultural infrastructure. The bill requires the Department of Agriculture to administer the program and to establish details on how the program will

be implemented, including the amount of reimbursement provided to each tenant and criteria that must be met to qualify for reimbursements.

H.B. No. 317, Relating to Mobile Medical Care

- The Special Committee on Vog Effects noted health-related concerns that were raised due to the increase in vog. These concerns include:
  - The safety of catchment system water due to the possibility of lead leaching into catchment systems because of acid rain;
  - Increases in and irritation of respiratory ailments;
  - Psychological effects such as depression and anxiety;
  - Risks to particular demographics such as children and the elderly;
  - Medical services for students, faculty, and staff who have physical reactions to vog;
  - Health care for outdoor laborers regularly exposed to heavy vog conditions; and
  - Overall access to medical care.
- The areas of the state most affected by vog cover large parts of the island of Hawaii, many of which are located far from a health care facility, making health care access difficult.
- To provide the people of the southern portion of the island of Hawaii with increased access to suitable emergency and clinical medical care, especially in light of the effects of vog on health, a mobile medical van can be stationed at and assigned to the Kona Community Hospital.
- H.B. No. 317 provides for a mobile medical van to be based at Kona Community Hospital, and requires the hospital to establish a mobile medical van program to provide basic medical clinical services to the South Kona, Ka'u, and upper Puna areas of the county of Hawaii. The bill also authorizes the use of federal Homeland Security Grant Program funds for the purchase of the mobile medical van, as well as for the planning and equipment necessary to providing medical care services.

H.B. No. 318, Relating to Vog

- SO_2 in vog has been destroying or damaging flower and other crops, including protea, chrysanthemum, iris, and roses. The damage to the plants occurs by SO_2 damaging stomata on leaves, and sulfuric acid, which is created when dew combines with SO_2, damaging the flowers.

- Certain plants appear to be the most susceptible to vog, while others appear to be protected from the effects of vog. Since certain characteristics of particular plants appear to protect that species from the effects of vog, farmers and government entities have begun to experiment with different methods that work for those species on other species of plants.
- Farmers and government entities have also suggested other methods to counteract the effects of vog, including using sodium bicarbonate or potassium bicarbonate to neutralize acid rain.
- While these strategies are promising, additional research and field studies are required to determine the short- and long-term effectiveness of each strategy and to ensure appropriate procedures are followed for each strategy. Research is also necessary to distinguish between damage caused by vog and damage caused by other problems such as plant diseases, so these strategies are not employed in vain.
- It would cause additional hardship on the farmers -- who have already suffered so much economic damage – if they were asked to continue independent research. A coordinated effort by better-equipped research facilities to conduct the appropriate studies would be more efficient and effective.
- H.B. No. 318 requires the Department of Agriculture to work with the University of Hawaii College of Tropical Agriculture and Human Resources and farmers in vog-affected areas to determine, through research, the best methods of vog treatment and find crop varieties that are most resistant to the effects of vog. The bill also sets aside a portion of the federal funds received under the Homeland Security Grant Program for this purpose.

STATE OF HAWAII
DEPARTMENT OF DEFENSE

TESTIMONY ON HOUSE BILL 312
A BILL RELATING TO HAZARDOUS SUBSTANCES

PRESENTATION TO THE

COMMITTEE ON PUBLIC SAFETY

COMMITTEE ON HEALTH

BY

MAJOR GENERAL ROBERT G. F. LEE
DIRECTOR OF CIVIL DEFENSE

February 7, 2009

Chair Hanohano, Chair Yamane, and Committee members:

I am Major General Bob Lee, Director of Civil Defense, State Department of Defense. I am providing written testimony in opposition to House Bill 312.

House Bill 312 directs the Department of Defense (DOD) to develop and implement a program to ensure that adequate number of air monitors to detect sulfur dioxide is strategically placed throughout areas of the State where high incidences of vog, sulfur dioxide, or both occur. From a DOD perspective, the Department of Health (DOH) is the appropriate agency to perform this task. DOH has installed fixed air monitors in areas on the island of Hawaii that are at risk to heavy concentrations of vog, volcanic ash, and sulfur dioxide.

If House Bill 312 is passed, the DOD or the DOH may require up to $1,000,000 to install additional air monitors throughout the State. Funds will be needed to maintain these monitors.

We recommend that the legislature draft a resolution that requests the federal government namely the U. S. Department of the Interior to assist the State in placing air monitors in areas prone to high incidences of vog, sulfur dioxide or both. The resolution should also request funding support from Congress since vog and sulfur dioxide hazards emanate from the Hawaii Volcanoes National Park.

Thank you for the opportunity to provide written testimony that opposes this bill.

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME LEINAALA FUKINO, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
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In reply, please refer to:
File:

JOINT HOUSE COMMITTEES ON PUBLIC SAFETY AND HEALTH

H.B. 312, RELATING TO HAZARDOUS SUBSTANCES

Testimony of Chiyome Leinaala Fukino, M.D.
Director of Health

February 7, 2009
9:00 a.m.

Department's Position: The Department of Health (DOH) appreciates the intent of this measure; however, there are already seven monitoring stations on Hawaii island (5 DOH and 2 National Park) and given the current fiscal difficulties and the costs and resources associated with the deployment of additional air monitoring stations, it would not be prudent to pursue enactment at this time.

Fiscal Implications: The DOH cost estimate to establish one continuous air monitoring station with instruments and accessories is approximately $110,000. If the station is located in an area without available electrical power, it would increase the cost to an additional $20,000. The operational and maintenance costs for one station excluding labor cost are estimated at $15,000 per year.

Purpose and Justification: The bill directs the Department of Defense (DOD) to develop and implement a program to ensure that an adequate number of monitors to detect sulfur dioxide are strategically place throughout the state where high incidences of vog, sulfur dioxide, or both occur. Due to an increase in emissions from Kilauea's newest vent at Halema'uma'u crater, the bill seeks a monitoring system to warn the public of dangerous levels of sulfur dioxide.

The DOH is supportive of the need to adequately monitor sulfur dioxide and fine particulate matter in areas where high incidences occur and to warn the public. Vog on the Hawaii island is an important public health concern especially in areas near and downwind of the volcanic emissions. We provide near real time data to the public on http://www.hiso2index.info.

The DOH is concerned that the bill provides no source of funding for equipment, personnel, operations, and maintenance should the DOH be required to expand its existing vog monitoring network and warning system.

The DOH vog monitoring network consists of five monitoring stations which measure sulfur dioxide, particulates, wind speed, and wind direction and are located in the area of Kona, Hilo, Mountain View, Pahala and Puna. There are also two monitoring stations located in and operated by the Volcanoes National Park. Recent changes in activity at Halema'uama'u crater have resulted in higher levels of sulfur dioxide and particulate emissions that at times may pose a potential health risk. This prompted the DOH to propose that two additional monitoring stations be established on the west side of the Hawaii island at Hawaiian Ocean View Estates and possibly Waikoloa. Having only limited available resources, the DOH objective was to maximize the vog monitoring network and provide a broad coverage for most of the island. Although there are other areas where DOH would seriously consider establishing a vog monitoring station such as Volcano Village, Kailua-Kona town and Waimea town, the most critical need is with personnel. Currently, DOH has only one staff located on the Hawaii island that services the monitoring stations, but because of the increase in stations and the large travel distance, it has become necessary to fly-in technical support staff from Honolulu weekly to assist with the maintenance of the stations.

These continous air monitoring stations are costly and resource intensive to establish, operate and maintain. The up-front cost for an air monitoring station alone with the sampling instruments and supporting equipment is estimated at $110,000. The cost to operate and maintain one station is approximately $15,000 and includes supplies, utilities, lease agreements, and travel costs, excluding personnel cost.

Furthermore, we have not measured SO_2 exceedances on anyislands other than Hawaii.

The DOH acknowledges the public benefit of this measure, but given the poor economic state and the lack of funding, implementation would not be possible at this time.

Thank you for the opputunity to testify.

GUY ENRIQUES
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Council District 6

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Hawai'i County Council
County of Hawai'i

07 February 02009
9:00 am Hearing
State Capitol Conference Rm 325

RE: HB 312, 313, 314, 315, 316, 317 & 318 Pertaining to Hawaii County Vog Issues

Esteemed Committee Members;

The opening of Halema'uma'u vent March 19, 2008 has lead to dramatic changes for the southern side of Hawai'i County. Toxic gasses, tephra, volcanic debris rain down upon the nearest downwind villages and at night these same hazards sometimes settle into dense streams that choke all flora and fauna in its path.

Generally speaking, about half the vog emissions that previously came from the Pu'u O'o vent further to the east, now are being spewed at Kilauea, with the addition of more dirty material than ever had been the norm for Pu'u O'o. Pu'u O'o emissions tend to defuse over the ocean or pass to higher elevations instead of enveloping the southwest district of Ka'u.

While the measures in these bills attempt to address some of the more visible issues brought by this ongoing hazard, none bring any immediate relief to the people who reside in the region.

Still, Councilman Guy Enriques supports the passage of these bills in hopes they will lead to providing the first steps toward providing better emergency and safety plans for the people of the region. In particular, Mr. Enriques hopes passage of HB 315 and HB312 will lead to data collection that will prove the pressing need for the communities of Ka'u to acquire improved public and private shelter hardening. Currently nearly every public and private building in the area cannot be enclosed (due to jealousies or permanent screen windows) to significantly reduce exposure to the hazardous fallout. Outdoor Agricultural workers face similar hazards.

People in the Ka'u Community Hospital and within the Pahala School Campus are not shielded from the airborne attacks. At times the vog plume can be so dense visibility is reduced to less than a block.

Sincerely,

Bradley Westervelt
Legislative Asssitant District 6

EMILY NAEOLE
Council Member
Council District 5

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Hawai'i County Council
County of Hawai'i

Date: February 6, 2009

To: Bradley Westervelt, Legislative Aide
Guy Enriques 6th District

From: Emily Naeole Council Member 5th District

Re: TESTIMONY ON HAWAI'I HOUSE BILLS 113-118

Aloha mai,

I have before me, House Bills 113-118 relating to vog and sulphur dioxide it covers highway guardrail replacement, workers safety and compensation and agrarian concerns but shockingly silent on resident safety, aid and compensation.

Where is the legislation to bring aid and relief to the people of Puna? Residents on coastal Red Road, the Kalapana-Kapoho Road are closest of all communities to the ocean plumes and during Kona, interchangeable winds, or no-wind conditions; the vog can be intolerable during higher emission periods. Also it has been noted that the vog has a tendency to linger in corridor s of Highway 130 near the Maku'u Hawaiian Homestead. One can see it and smell it.

To make matters worse, on Sunday, 2/01/09, the Hawai'i Herald-Tribune, published the latest report from Hawai'i Volcano Observatory (HVO) informing us that another deadly ingredient has been added to the vog. Hydrogen Sulfide (H2S). Hydrogen sulfide is considered a broad-spectrum poison, meaning that it can poison several different systems in the body, although the nervous system is most affected. The toxicity of H_2S is comparable with that of hydrogen cyanide.

In order for this act to be a complete one I believe that the monitors should monitor H2S emissions too.

We have had a very rough time in the Kehena area in December and January. Everyone I know in Seaview subdivision is suffering ill effects of one degree or another. We have had two deaths and much illness in this small neighborhood.

According to the Pāhoa Fire Chief all procedures come through Civil Defense. At this time the fire station in Pāhoa use the SO2 monitoring device only when "it looks" voggy at the fire station. He then, and only then, sends out someone to take SO2 readings at C.D. authorized sites.

Everyone knows looks can be deceiving we are talking about poisons in parts per million terms. It should not be left to people at fire stations.

This is totally unacceptable. Sometimes the vog is thick in Pāhoa but it is very light in the Kehena are, and visa-a-versa. At this time of heavy volcanic emissions, SO2 readings should be taken several times a day in all locations.
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Nowhere in Puna Makai is there any place to evacuate to. Emergency shelters can be created quickly by converting designated schools and community center areas to airtight rooms with vinyl Velcro windows and portable air filter and air conditioning machines. Funding is available through FEMA and Homeland Security Grant programs.

The coconut wireless is saying that Hawai'i is the next Katrina. Is this life threatening situation being allowed to escalate in order to create enough panic to justify the evacuation of the whole island? That will then be turned over to the military/industrial complex? I ask you to consider this testimony when discussing the solution to this problem and very important Act.

I would ask that the Legislature take serious the thought to include Lower Puna in all of these bills.

Lua lima,

Emily I. Naeole
Council Member 5th District

EIN/rh

Ka'u Farm Bureau
PO Box 1109
Naalehu, Hawai'i 96772
808-929-9550

February 5, 2009

RE: Testimony in favor
HB 312
HB 313
HB 314
HB 315
HB 316
HB 317
HB 318

Aloha esteemed Representatives,

I am writing in support of the aforementioned bills.

The Ka'u district, in particular, has been severely impacted, beginning in March of 2008, by the adverse effects of VOG. These impacts continue through the present day. Many farms are in peril. Some have already failed. As a community, we are grappling with how to deal with the various issues that have resulted from increased emissions from Halema'uma'u. The Ka'u Farm Bureau is pleased that our local representatives have acted so swiftly and decisively to mitigate the impacts of this natural phenomenon.

All things have been affected by VOG, albeit to varying degrees, with the most fragile organisms being the most severely affected. This most welcome intervention by government on this most urgent issue speaks directly to public health, safety and welfare and fulfills the most important role of Government- to help ensure the safety of its citizens.

This legislative package goes one step further to help farmers and ranchers deal with the economic impacts caused by VOG and protects the health and well-being of the workforce.

I applaud the proactive approach demonstrated by all levels of government- County, State, Federal, and indeed, the participation by the citizenry to adapt to this problem.

Please join me in supporting the aforementioned measures.

Many thanks,

Chris Manfredi
President