

Regulating Geothermal Air Emissions

Prepared by the Department of Health, Clean Air Branch July 19, 2013

The Department of Health, Clean Air Branch (DOH) regulates and monitors air pollution in Hawaii as required by state and federal law. This fact sheet describes how DOH protects public health and the environment from releases of air pollution from the Puna Geothermal Venture power plant (PGV).

The DOH Clean Air Branch:

- Reviews and approves air pollution permits in Hawaii
- Evaluates and enforces state and federal air quality standards
- Conducts inspections, and investigates reported incidents related to outdoor air quality, and
- Ensures companies comply with state and federal emission standards to minimize air pollution

Ambient Air Quality Standard

- The Ambient Air Quality Standard for Hydrogen Sulfide (H₂S) is 25 parts per billion (ppb) in any one-hour period.

Puna Geothermal Venture (PGV) Air Permit requirements

- The DOH monitors both the operation of the PGV facility and the area around the facility for compliance with permit requirements.
- Through the facility's air permit, the DOH requires PGV to operate and maintain three (3) continuous H₂S monitoring stations. See the included a map for the locations of the monitors.
- To ensure compliance with its air permit, DOH reviews monthly H₂S and meteorological data from the PGV stations
- DOH conducts annual inspections of the PGV facility, and investigates all air related complaints in the area.

Ambient Air Quality Monitoring

- DOH operates the Puna E ambient air quality monitoring station located downwind of PGV facility in the prevalent wind direction. The primary purpose of the station is to monitor for H₂S levels from activities at PGV.
- DOH has been monitoring air quality in the Puna area from 1993 to the present.
- The station location was selected with community input and is equipped with one continuous H₂S monitor with an alarm which will alert PGV's control room when there is any reading above the 5 parts per billion (ppb) level established by the facility's permit.
- The Puna E station is operated and maintained according to the U.S. Environmental Protection Agency's (EPA) quality assurance and quality control requirements with data routinely reviewed.
- In addition, the use of portable Jerome H₂S monitors serve as ancillary support for compliance monitoring of the PGV facility.

Air Monitoring Challenges

- Operating a monitoring station is expensive and stations are difficult to establish .
- Over the past four decades, the DOH-CAB has operated stations that monitor H₂S in eight different locations in the Puna area. See the included graph for recent monitoring data.
- Sulfur dioxide (SO₂) monitoring was added in 2005 to determine if there were any effects from volcanic emissions.
- Monitoring data from all the monitoring stations statewide can be viewed at:
<http://health.hawaii.gov/cab/hawaii-ambient-air-quality-data/>

Public Comment and Reporting Complaints

For more information or to file a complaint:

- call the DOH Hilo office at 933-0404, or the DOH Kona office at 322-1965;
- call the Honolulu office at (808) 586-4200;
- call the DOH Geothermal Hotline at 933-0489;
- email your complaint to: CAB@doh.hawaii.gov;
- call the PGV Information Line at 934-9072, or
- call the PGV Response Line at 965-8843.

PUNA AIR QUALITY MONITORING STATION LOCATIONS



HYDROGEN SULFIDE DATA

DOH Puna E Monitoring Station: Maximum 1-hour H₂S and SO₂



Data for 2013 is preliminary, subject to change.
 January 2013 maximum H₂S occurred on 1/22/13, no PGV incident reported. Annual pressure tests for production wells at PGV conducted Jan-Feb 2013