

# Air Quality and Munitions Cleanup on Vieques

VIEQUES ENVIRONMENTAL RESTORATION PROGRAM **FACT SHEET**



The Navy has conducted air dispersion modeling and extensive on-site air sampling to evaluate the effects of the munitions cleanup on air quality in Vieques. All work was done in collaboration with the US Environmental Protection Agency and the Puerto Rico Environmental Quality Board. The results show that all cleanup operations, including open detonations, are conducted in a manner that is protective of public health and the environment.



*Air Quality Monitoring Instrument*

## How has air quality been evaluated on Vieques?

From 2005 to 2013, the Navy conducted air sampling during open detonation events to measure the air concentration of particulate matter (dust and soot), metals, and explosive chemicals. Over 1,600 air samples were collected during 177 detonation events. In addition, over 50 air samples were collected during 19 accidental brush fires.

Air samples were collected at locations near the former Live Impact Area (LIA) as well as the populated areas of Vieques.

- In 2007 and 2008, air dispersion modeling was used to estimate the highest air concentrations of particulate matter (dust and soot), metals, and organic contaminants that could theoretically result from the open detonations and the proposed controlled burning in the Submunitions Area.
- The air sampling and the modeling were developed in a collaborative effort among the Navy, the US Environmental Protection Agency, and the Puerto Rico Environmental Quality Board.



*Air Quality Monitoring Locations*



## FOR MORE INFORMATION CONTACT:

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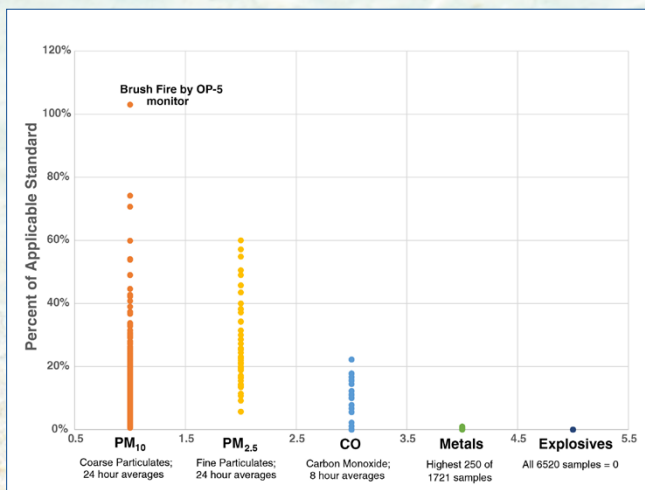
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## What did the air samples show?

- No explosive chemicals were detected in any of the samples.
- The detected concentrations of all metals were at least 99% below health based standards. There were no detections of mercury or lead in any of the samples.
- There were no violations of the National Ambient Air Quality Standards (NAAQS) for particulates (dust and soot).

*Air Quality Data for All Sites, 2005–2019*

## What did the air dispersion modeling show?

- All predicted concentrations were below regulatory and health based standards, such that there was no indication of risk to the residents of Vieques.
- Overall, the model results agreed with the on-site air sampling.

## Why was air sampling discontinued in 2013?

- After 8 years and 1,600 air samples collected during 177 detonation events, all results were within regulatory standards, indicating that the open detonations do not affect public health on Vieques. These sample results were supported by the air dispersion modeling.
- Over time, the number of munitions items and the size of the open detonations have decreased. Therefore, the air monitoring from 2005 to 2013 represents the worst case situation.
- Although air sampling was discontinued during open detonations, air quality samples continue to be collected during controlled burns in the Submunitions Area. All results comply with air quality standards.

## What about the Sahara Dust?

At certain times of year, dust from the Sahara Desert may travel across the Atlantic Ocean and reach Vieques. The Sahara Desert covers a very large area (approximately 2.3 billion acres) that is roughly the size of the United States. As a result, strong Sahara winds generate enormous plumes of dust that can travel hundreds of miles because the massive interior of the plume never has a chance to mix with clean air outside the plume. In contrast, the open detonations on Vieques generate dust from very small areas (much less than 1 acre), and these small plumes readily mix with the surrounding air and disperse before reaching the populated areas of Vieques.

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