

# Communities for Clean Water

A Northern New Mexico Network

## ***Selenium Contamination Found in LANL Canyons:***

Elevated levels of selenium have been found in many streams in canyons at Los Alamos National Laboratory (LANL). All of these streams eventually empty into the Rio Grande and will reach groundwater.

## ***What is Selenium?***

Selenium naturally occurs as a mineral element in the environment. It can be found in soil and rocks. Processed selenium compounds are primarily used in photocopier and electronic components. Other common uses are in photographic emulsions, glass, rubber, inks, textiles, paints, metal alloys, medical, preparation of pharmaceuticals, pesticide formulations and petroleum.

## ***Why Is This Important to You?***

Selenium occurs naturally in our environment. However, it can be released in its processed form from manufacturing, agricultural and industrial waste. Processed selenium is a danger to your health.

Selenium dust can travel through the air. It then will settle on both land and water. Plants intake selenium through the soil. It is known that selenium accumulates in the food chain. Humans then will ingest selenium through the foods they eat.

Selenium particles are either soluble or insoluble. Insoluble selenium will remain on soil and can be resuspended in high winds. Soluble selenium is dangerous because it can enter surface water through soil and is highly mobile in water.

## ***Exposure:***

Humans intake selenium through the air they breathe, water they drink and their diet of local foods. Elevated exposure to selenium occurs to those that live within close vicinity of hazardous waste sites or industries that use it.

## ***Health Effects:***

At low levels, selenium is a nutrient that is essential to a healthy body. However, higher doses to selenium are extremely toxic to the body. High exposure is attributed to a disease known as *selenosis*. Symptoms of *selenosis* include nail and hair loss and neurological abnormalities. Other health effects of selenium exposure include damage to the nervous and circulatory system, liver and kidney tissue and feelings of irritability and fatigue. If inhaled, selenium creates respiratory and bronchial damage.

Sources:

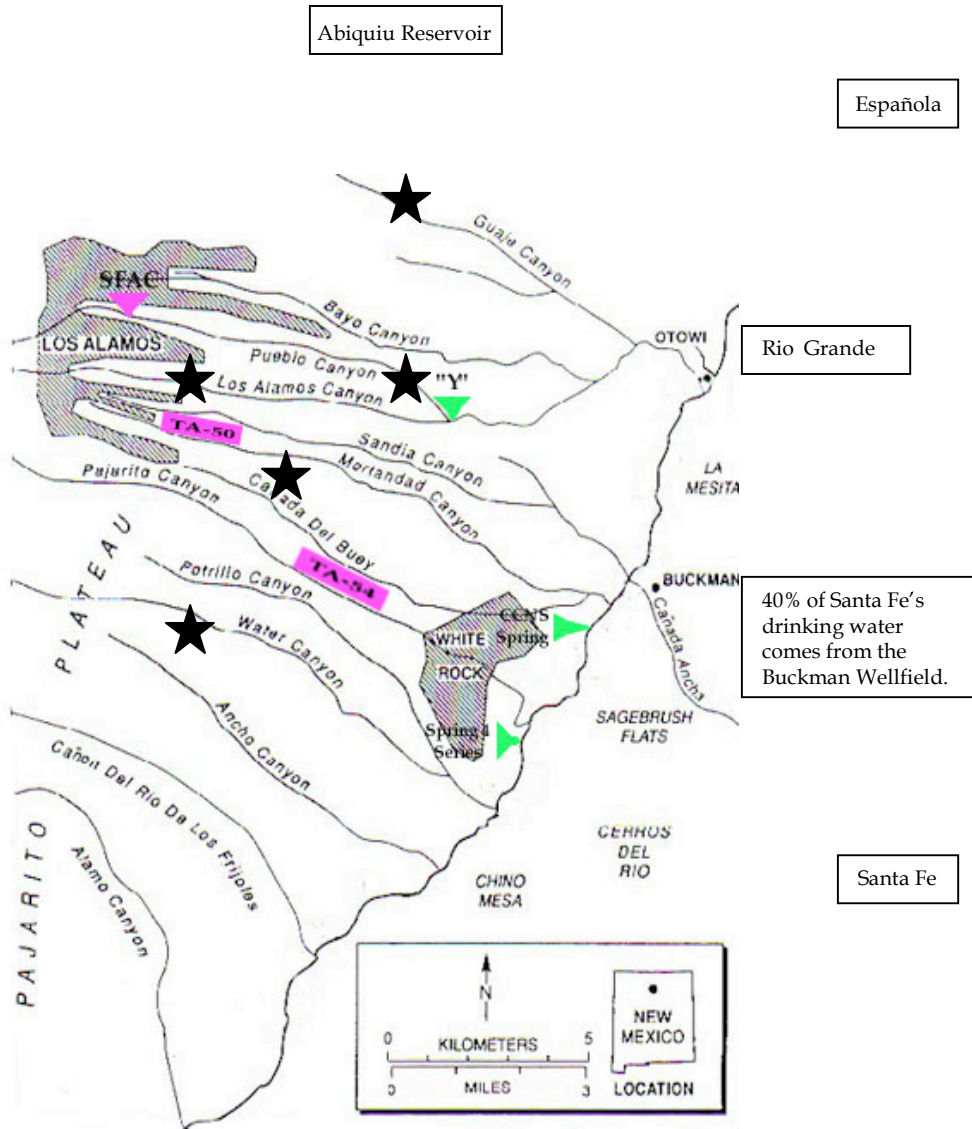
\*Environmental Protection Agency (EPA): [http://www.epa.gov/OGWDW/contaminants/dw\\_contamfs/selenium.html](http://www.epa.gov/OGWDW/contaminants/dw_contamfs/selenium.html)

\*Agency for Toxic Substances and Disease Registry: <http://www.atsdr.cdc.gov/tfacts92.html>

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## Selenium Contamination in LANL Canyons:



Cochiti Reservoir

★ **Selenium:** can be released in its processed form from manufacturing, agricultural and industrial waste. It travels through air, in water and settles on soil. Plants uptake selenium that has settled on the soil. Humans are exposed to processed selenium through the air they breathe, water they drink and the local foods they eat. Selenium is dangerous to your health. It is attributed to *selenosis*. Other health effects of selenium exposure include damage to nervous and circulatory system, liver, kidney, bronchial and respiratory. Selenium has been detected in Guaje, Pueblo, Los Alamos, Mortandad and Water Canyons.

Sources:

\*Environmental Protection Agency (EPA): [http://www.epa.gov/OGWDW/contaminants/dw\\_contamfs/selenium.html](http://www.epa.gov/OGWDW/contaminants/dw_contamfs/selenium.html)

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