

# Investigations of Selenium in Groundwater and Surface Water at the Monsanto/P4 Soda Springs Plant Soda Springs, Idaho



The US Environmental Protection Agency and the Idaho Department of Environmental Quality have prepared this fact sheet to provide Soda Springs' residents with updated information concerning the presence of the chemical selenium in area groundwater and surface water. Monsanto, with EPA and IDEQ oversight, is responsible for managing environmental investigations and remediation of the approximately 540-acre Soda Springs Elemental Phosphorus Plant (Site) located at 1853 Highway 34 about 2 miles north of Soda Springs.

## Overview of Past Groundwater and Surface Water Work

The Site has been in operation since 1952. Historical operating practices and management of byproducts related to the processing of phosphate ore resulted in contaminated groundwater from chemicals of concern, including selenium, which is a naturally occurring substance (see "What is Selenium" below). Monsanto took actions beginning in the 1980s to remediate and replace some of the Plant facilities suspected of being sources of groundwater contamination. To ensure that Monsanto's remedial actions remained protective, EPA has required regular sampling and monitoring of groundwater and surface water since 1991. Monsanto has completed numerous other groundwater and surface water investigations since 1991.

## Update on Recent Groundwater and Surface Water Investigations

Based on past and recent groundwater evaluations, Monsanto believes that selenium is leaving the Site via a groundwater plume that extends southwards from the Site towards the City of Soda Springs. Site data show that the groundwater concentrations have been decreasing over time at many locations. However, based on ongoing sampling efforts EPA has determined that selenium concentrations are not decreasing as fast as originally predicted. In 2013, Monsanto, in consultation with EPA and IDEQ, began to develop and perform additional studies to learn why selenium and other contaminants in the groundwater are not decreasing at the rates originally anticipated.

Monsanto's annual monitoring indicates selenium in groundwater extends south from the Monsanto Plant and also may extend under some homes in the northern part of the City. Based on the locations of the City's drinking water supply sources and a domestic-well study performed under the direction of EPA, this groundwater is not consumed or used domestically. As a result, there is no concern about contact through those uses. Similarly, since selenium does not emit vapors (like those in petroleum products, such as gasoline) there is no potential for fumes in indoor air. However, because the selenium concentrations in the groundwater may be above EPA's drinking water standards and some homes have basement sump pumps to remove groundwater, this fact sheet explains how to reduce exposure to selenium. Refer to "Sources of Water in Soda Springs," next page.



The map shows the estimated area (outlined by the dashed line) where selenium may be present in groundwater and/or surface water at levels above what is considered safe for drinking water (above the EPA's Maximum Contaminant Level of 0.05mg/L). Map Source: Golder and Associates

## What is Selenium?

Selenium is a non-metallic mineral found in nature. In the Soda Springs area, selenium occurs naturally in the phosphate ores that are processed at Monsanto and other area phosphate plants. Selenium is needed to maintain good health, and is found in multivitamins and supplements. Short-term oral exposure to high concentrations of selenium may cause nausea, vomiting, and diarrhea. Long-term oral exposure to high concentrations of selenium may result in selenosis, which may cause hair loss, nail loss or neurological symptoms such as numbness in the hands or feet.

### Sources of Water in Soda Springs

**Public Tap Water:** Provided by the City of Soda Springs and delivered by pipes to your home, public tap water does not contain high levels of selenium.

**This water is safe for drinking, cooking, bathing, and irrigation.**

**Groundwater:** Located below the surface of the ground, groundwater has been found to contain elevated levels of selenium in some areas around Soda Springs. If a well is installed on your property, you should verify that it is not connected to your home's plumbing.

**Groundwater in the area where selenium may be present (see map) should not be used for drinking, cooking, bathing, or irrigation.**

**Surface Water:** Surface water is located at ground level, such as in streams, creeks, rivers, lakes, and ponds. Because of the unique nature of underground water in Soda Springs, groundwater has been found to surface in some areas, including into basements and along roadways (due to the installation of French drains) and at some springs. In some areas where groundwater surfaces, the associated surface water may contain elevated levels of selenium compared to naturally-occurring levels. **As a result, you should not use surface water from the area shown on the map for drinking, cooking, bathing, or irrigation.**

### Next Steps

Monsanto is continuing its investigations of the Site groundwater and surface water. In consultation with EPA and IDEQ, Monsanto will be designing and implementing additional remedial measures to further reduce selenium concentrations and control offsite migration of selenium-impacted groundwater.

**As noted previously, public drinking water sources for Soda Springs are safe and not affected by this groundwater selenium plume.**

## More Information

For more information, please contact:

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