

Fact Sheet: Groundwater around ash ponds

Progress Energy
2010

Key facts:

- Progress Energy is committed to the safety and well-being of our employees, our communities and the environment. We operate all our facilities, including our ash ponds and landfills, to be in compliance with local, state and federal environmental regulations.
- We voluntarily monitor the groundwater around all active ash ponds on a regular basis to ensure the protection of public health and safety. We share the data with the appropriate state agencies.
- We take every sample and indication of elevated levels seriously. Because results from individual wells can vary greatly depending on the weather and other factors, it is important to have sufficient data to determine if an elevated result is unusual (a one-time occurrence) or part of a trend.
- The company owns the majority of land around its active facilities. Therefore, there are very few public or private groundwater wells located near the ash ponds.
- Most of the constituents for which we monitor are non-toxic and do not have health-based drinking water standards associated with them. For example, in monitoring manganese, there is an aesthetics-based secondary drinking water standard for the smell and color of the water. There is no drinking water standard established for some other constituents, such as boron.
- If initial monitoring reveals a potential trend of elevated constituents, we notify the appropriate state agencies and increase the number of monitoring wells. The data from these additional wells helps us identify the location, flow and source of the elevated constituents, as well as gather data on naturally occurring levels. If needed, we will create an action plan to address the elevated levels.
- In February 2010, we submitted a plan to the N.C. Department of Environment and Natural Resources to identify location for additional monitoring wells around our ash ponds to gather more data. We are taking action to identify if there are any issues and then will take corrective action if needed.
- Around every ash pond is a compliance boundary. North Carolina groundwater standards only apply at or beyond the compliance boundary. This means that groundwater standards are not violated if elevated levels are found within the compliance boundary.

Questions and Answers

Why are you voluntarily monitoring groundwater around ash ponds?

Our voluntary monitoring efforts are part of an industry initiative led by the Utilities Solid Waste Activities Group (USWAG) that began in 2006. USWAG assists in addressing solid and hazardous waste regulatory issues on behalf of the utility industry.

Where are the monitoring wells?

Progress has installed groundwater wells around all its active ash ponds and landfills.

How often does it test?

The USWAG initiative requires participating utilities to test the groundwater around ash ponds twice a year. Progress Energy began testing in December 2006.

Many variables, such as weather, geology and soil chemistry can influence the flow and direction of groundwater and movement of chemical compounds, thus affecting the results. In addition, the sampling technique and expertise of the sample collector and associated equipment can influence results, as can the techniques of the laboratory analyses. For these reasons, it is important to have results from multiple samples taken over a period of time to get an accurate understanding of the actual situation.

What constituents does the company monitor?

In general, the company monitors the following constituents: antimony, arsenic, barium, beryllium, boron, cadmium, chloride, chromium, copper, fluoride, iron, lead, manganese, mercury, nickel, nitrate, nitrite, selenium, silver, sulfate, thallium and zinc.

What does it do with the data? How can I get the results?

Progress Energy provides the results of its testing to the North Carolina Department of Environmental Resources (NCDENR) or the South Carolina Department of Health and Environmental Control. Please contact these agencies for the data.

What are you doing about the early sample results?

Progress Energy submitted a plan to NC DENR to identify locations for more wells around its ash ponds. This investigative study will determine the direction of groundwater flow, if there are elevated levels of constituents and whether the constituents are naturally-occurring or come from another source. Then we will work with the state to determine if there are any off-site impacts and take action if needed.

What is the difference between a groundwater and drinking water standard?

They serve different purposes and are established by different laws and regulations. Drinking water standards are set with some consideration of the costs to treat the water from any source (surface or ground) as well as human health impact or taste or odor. Groundwater quality standards use many of the same criteria but do not consider the possible cost relative to risk.

What is boron? Is it harmful to humans?

Boron is a naturally occurring element. Boron is widely found in nature, and is present in oceans, sedimentary rocks, coal, shale and some soils. Boron is an essential nutrient for many plants and has many commercial benefits, such as use in fiberglass and home laundry detergent. There is no drinking water standard for boron in North Carolina.

Boron enters the environment mainly from the weathering of boron-containing rocks, from seawater in the form of boric acid vapor and from volcanic and other geothermal activity. Boron is also released, though to a lesser extent, from human activities. Only a few studies on humans have investigated health effects associated with exposure to boron compounds. These show that exposure can be associated with short-term and reversible irritant effects. The sole long-term study did not identify any long-term health effects. [Source: International Programme on Chemical Safety (IPCS) 1998: *"Executive Summary of the Environmental Health Criteria for Boron (EHC 204)"*]

What is manganese? Is it harmful to humans?

Manganese is a naturally occurring substance found in many types of rock and soil; it is ubiquitous in the environment and found in low levels in water air, soil and food. Manganese is essential for normal physiologic functioning in humans and animals, and exposure to low levels of manganese in the diet is considered to be nutritionally essential in humans. Chronic (long-term) exposure to high levels of manganese by inhalation in humans may result in central nervous system effects. [Source: U.S. EPA]

There is no primary drinking water standard for manganese, only a secondary standard in North Carolinas for aesthetic characteristics (color, taste and smell of water).