

Kaiser Aluminum and Chemical Corporation

Heglar Kronquist Site - Spokane County, Washington

Fact Sheet – September 2009



DOH PUB NO 334-206

The Washington State Department of Health completed a health consultation for Kaiser Aluminum's Heglar Kronquist site in Spokane County, Washington. This site was used as a gravel pit until 1969 and as a disposal site for aluminum dross (a waste product created during aluminum processing) from 1969 to 1974.

The health consultation's purpose is to:

- Determine whether the dross disposal area poses a possible health threat to the nearby community.
- Evaluate the results from the December 2008 private domestic well testing near the disposal area to see if any of the chemicals found in the wells could pose a health threat. Kaiser Aluminum did the well testing. Spokane Regional Health District conducted additional independent sampling of some domestic wells at the request of a few homeowners living farther from the site than those sampled by Kaiser. Those results were also evaluated.

Background

About 60,000 tons of aluminum dross was disposed of at the Heglar Kronquist site. Kaiser Aluminum stopped disposing of dross at the site in 1974. In 1984, the disposal site was covered with soil and vegetation, and 17 gas vents were installed.

Before the cover was installed, water came into contact with the dross. When that happened, some of the chemicals in the dross may have moved into the groundwater. Ammonia and other gases were also produced.

The soil cover helped reduce the amount of water coming into contact with the dross. As a result, the amount of dissolved chemicals and

gas being produced also decreased. The vents were installed to help prevent gas from building up below the soil cover.

Some testing was done in the area from the mid-1970s to 2004 to find if the dross was affecting groundwater and surface water. However, that data's quality is unknown, so it's not helpful for understanding what may have occurred in the past as a result of the dross disposal.

In 2006, the Washington State Department of Ecology (Ecology) determined that the site posed a potential hazard. In March 2009, the Department of Ecology and Kaiser Aluminum signed a legal agreement (called an Agreed Order) that requires Kaiser Aluminum to conduct a remedial investigation and feasibility study to determine the nature and extent of the contamination, potential health risks, and the possible cleanup options.

What is known about the chemicals in the aluminum dross disposal area?

Sodium, chloride, potassium, and aluminum are the main chemicals found in aluminum dross. The dross also contains smaller amounts of other chemicals. Historic information about the site suggests that besides the dross-related chemicals, metals and some organic chemicals may have also been disposed of at the site. This will be investigated further during the remedial investigation.

What was found during the December 2008 private well testing?

Most of the December 2008 test results from the private wells were below levels of health concern. However, one well had arsenic above the drinking water standard and another had nitrate levels above the drinking water standard. Four wells had sodium above an Environmental

Protection Agency health advisory level for people on a low-sodium diet. Owners of all the tested wells were provided with health-related information about nitrates, arsenic, and sodium.

The source of the chemicals found in the private wells is unknown. They could be naturally occurring, associated with agricultural practices or with the dross disposal site, or some combination. Kaiser Aluminum will conduct its remedial investigation later this year. That will include investigating whether the aluminum dross affects private wells. The Department of Ecology will oversee this study.

What should community members know about sodium, nitrate, and arsenic?

Sodium

- Naturally occurring chemical.
- Found in soil, plants, water, and food.
- Sodium salts, like table salt, are commonly found in water.
- Some sodium is needed for good health.
- Main source for people is in the form of salt.

Health effects of sodium: High amounts of sodium can affect blood pressure. Some studies suggest that it could increase the risk of cancer caused by other chemicals in the digestive tract.

Nitrates

- Naturally occurring chemical.
- Commonly found in groundwater and surface water.
- Found in the foods we eat, such as beets, lettuce, and spinach.

Health effects of nitrates: Nitrates reduce the ability of red blood cells to carry oxygen. In most adults and children, these red blood cells rapidly return to normal, but for infants it takes much longer and may develop into a serious health condition known as “blue baby syndrome.”

More information about nitrates in drinking water can be found at:

<http://www.doh.wa.gov/ehp/dw/Programs/nitrate.htm>

Arsenic

- Naturally occurring chemical.
- Found in soil, water, air, food, and house dust.
- Arsenic is added to metals and, in the past, was used as a pesticide and for treating wood.

Health effects of arsenic: Exposure to small amounts of arsenic over a long time can increase the risk of some cancers. Other health effects may also include high blood pressure, nerve damage, diabetes, stomach upset, and skin changes.

More information on arsenic in drinking water can be found at:

<http://www.doh.wa.gov/ehp/oehas/publications/pdf/ArsenicBrochure.pdf>

Conclusions and next steps

It’s hard to determine the accuracy of data collected for the Kaiser Aluminum site from the mid-1970s to 2004. As a result, the Department of Health can’t determine if the disposal of aluminum dross at this site may have caused any harm to people’s health in the past. More information is needed before we can tell if it’s harming people now.

Here are recommendations of what needs to be done to help determine if this site is currently harming, or could potentially harm, people’s health:

- Install monitoring wells to assess whether the disposal site affects groundwater quality.
- Identify private wells and surface water that could be potentially at risk.
- Conduct surface water testing at potentially affected springs, creeks, and ponds.
- Test to see if gases are being made at the disposal area. If gases are being made, determine whether outdoor air or indoor air at nearby residences could be affected.

- Test groundwater, surface water, and soil gas for contaminants related to the disposal site.
- Conduct additional evaluation and testing of private wells if the disposal area does pose a threat to well water quality.

The Department of Ecology will ensure the Department of Health's recommendations are considered in the preparation of the final approved remedial investigation work plan.

Helpful links

The Department of Health's report on the Heglar Kronquist site

<http://www.doh.wa.gov/ehp/oehas/consults.htm>

Information for private well owners – Fact Sheet

<http://www.doh.wa.gov/ehp/dw/Publications/331-349.pdf>

Department of Ecology

http://www.ecy.wa.gov/programs/tcp/sites/heglar/heglar_hp.html

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