

## Report Evaluating Cleanup Options Available for Comment

In March 2009, Kaiser Aluminum & Chemical Corporation, LLC (now known as DCO Management, LLC) and the Washington State Department of Ecology entered into an Agreed Order. The Order required Kaiser to conduct a Remedial Investigation and Feasibility Study at the Heglar Kronquist site (see Figure 1).

The site is 10 miles northeast of downtown Spokane in a rural area and covers nearly four acres. It is located near the intersection of Heglar and Kronquist Roads in Mead, Spokane County, Washington.

The purpose of the Remedial Investigation was to gather more scientific information to determine if site-related contaminants are in groundwater on and near the site. The investigation identified the contaminants, the amount of contamination, and where they are located. A previous fact sheet summarized the results of the investigation. The Feasibility Study evaluated cleanup options, and this fact sheet summarizes those options.



Looking at the site in a westerly direction

## How to Comment

You are invited to:

- **Review** the draft Feasibility Study Report at one of the review locations listed in the box on the right.
- **Send** your comments to Teresita Bala at Ecology from **January 18 through February 16, 2012** for consideration.

The box on the right provides details about where to review documents and send comments. Teresita Bala's contact information also is found in the box at the right.

## Fact Sheet January 2012

### Comments Accepted

January 18 through February 16, 2012

For **ADA** accommodations or documents in an alternate format call Carol Bergin 509/329-3546, 711 (relay service), or 877-833-6341 (TTY).

### Para asistencia en Español

Richelle Perez 360/407-7528

### Если вам нужно помощь по русскому, звоните

Tatyana Bistrevsky 509/928-7617

### Site Manager

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### Public Involvement

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### Document Review Locations

**WA Department of Ecology**  
Kari Johnson, Public Disclosure  
WA Department of Ecology  
4601 N. Monroe St.  
Spokane, WA 99205-1295  
Call for an appointment 509/329-3415

### North Spokane Public Library

Hawthorne Branch  
44 E. Hawthorne Rd.  
Spokane WA 99218

### Ecology's Toxics Cleanup Website

<https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=1135>

**Facility Site ID No.** 645

**Cleanup Site ID No.** 1135

### Why Your Comments on The Feasibility Study Report Matter

- Chemicals associated with aluminum dross may be harmful to human health and the environment if they exceed certain levels.
- The Feasibility Study Report evaluates potential cleanup options and identifies which option Kaiser recommends for the cleanup.
- After public comment, Ecology selects the cleanup option that will be implemented at the site. Your comments about the cleanup alternatives may influence Ecology's selection of the final cleanup remedy.

### Feasibility Study Cleanup Alternatives

The Feasibility Study Report takes into consideration results from the Remedial Investigation and evaluates cleanup alternatives to address black dross and associated chemicals at the site. Complete details may be reviewed in the Feasibility Study Report. Review locations are found on page one.

Initially, several alternatives were considered, including no action, institutional controls, engineering controls, waste removal, disposal, treatment, dispersion and dilution. After consideration of several factors, the following two alternatives were evaluated in depth as reasonable cleanup options for the site:

#### **Alternative 1: Removal of waste, off-site disposal, dispersion/dilution, and compliance monitoring.**

The cap that currently exists at the site would be removed along with approximately 55,000 cubic yards of black dross. The pit would be over-excavated to ensure all landfill waste was removed.

The waste would be shipped to a permitted, secure landfill. The cost would be approximately \$129 per ton because the waste would have to be treated before being sent to the permitted landfill. The total

estimated cost for removal and disposal would be \$20,064,000.00.

Groundwater would be allowed to naturally correct itself over about 2-5 years through dispersion and dilution.

#### **Alternative 2: Enhance the existing cap, institutional controls, dispersion/dilution, and compliance monitoring.**

The existing landfill cover, called a cap, and drainages would be improved and additional layers would be added to the cap. The vent system would be repaired if it could be accomplished without damage to the existing cap. Ten pine trees would be removed along the southern boundary of the landfill to prevent future root system damage to the landfill. This alternative would cost approximately \$1,787,000.00.

The cap would be filled with soil from the soil pile on the eastern end of the landfill and regraded. Surface water would be rerouted by regrading and relocating the ditches and swales at the site.

A geosynthetic liner would be placed over the graded area and then a drainage layer would be placed on top of the liner. The multi-layer liner would be covered with 18 inches of top soil and natural grasses planted on top.

The geosynthetic liner would extend 5-10 feet beyond the current dross fill boundary on the north, east and south edges of the landfill. On the west edge the liner and drain system would extend 50-75 feet beyond the dross fill boundary.

Institutional controls would be placed on the property to protect the improvements. These controls include fencing, signage, restrictions on how the land may be used, maintenance and monitoring. A restrictive covenant would be placed on the property describing the land use restrictions. Surface and groundwater monitoring would be conducted until water quality standards are met.

Kaiser recommends Alternative No. 2 as the preferred cleanup action. Ecology will review and evaluate this proposal and prepare a draft Cleanup Action Plan (DCAP). The DCAP will provide details about the cleanup action Ecology selects.

Ecology's decision must be based on the Model Toxics Control Act (MTCA) which is the regulation that governs cleanup of toxic sites in the state of Washington. The selected cleanup must be protective of human health and the environment. If two or more alternatives are equal in benefits, the least costly option is selected, if it meets MTCA requirements.

Ecology may agree with Kaiser's proposal or select a variation or combination of alternatives for the final cleanup. The DCAP will specify cleanup standards, and describe other requirements for the site based on data and information obtained during the Remedial Investigation and Feasibility Study phases of cleanup. Public comment will be sought and considered before the DCAP becomes final.

### **Site Background**

The site was used as a gravel pit until it was closed in 1969. Gemini Management, Inc. then began operating the site as a disposal area. From 1969 until 1974, Kaiser transported aluminum black dross from the Trentwood plant in the Spokane Valley to the disposal site.

Black dross is a potential source for groundwater and air contamination. It is a by-product from processing aluminum materials. Black dross is present in the landfill as deep as 50 feet.

According to Kaiser's data, the black dross was composed of 39% sodium chloride, 35% aluminum oxide, 19% potassium chloride, 4% free aluminum, 2% cryolite, and 1% carbides and nitrides. Nearly 55,000 cubic yards of black dross were disposed of at the site. This amount could be compared to a football field filled with black dross that was 10 feet deep.

The dross disposal was stopped in 1974 because high levels of chloride were found in shallow water supply wells and springs down gradient of the site.

Air sampling conducted downwind of the site in 1979 showed elevated levels of several organic compounds. Ammonia also was detected at levels higher than current state standards.

### **Human Health**

Drinking water is not impacted by site-related contaminants. Surface water and groundwater, in certain areas, showed concentrations of nitrate above state standards for human health. These areas with elevated levels are not being used for drinking water. Additionally, there is a restriction that new groundwater wells must be 1,000 feet from the boundary of the landfill property.

The nitrate in the surface and groundwater is most likely due to the dross, precipitation, and runoff from local farmlands which were found to impact surface and groundwater.

The contaminants that exceeded other water quality standards are chloride, TDS, and manganese. Sodium exceeds the Environmental Protection Agency's (EPA) recommended upper limit advisory at three monitoring wells.

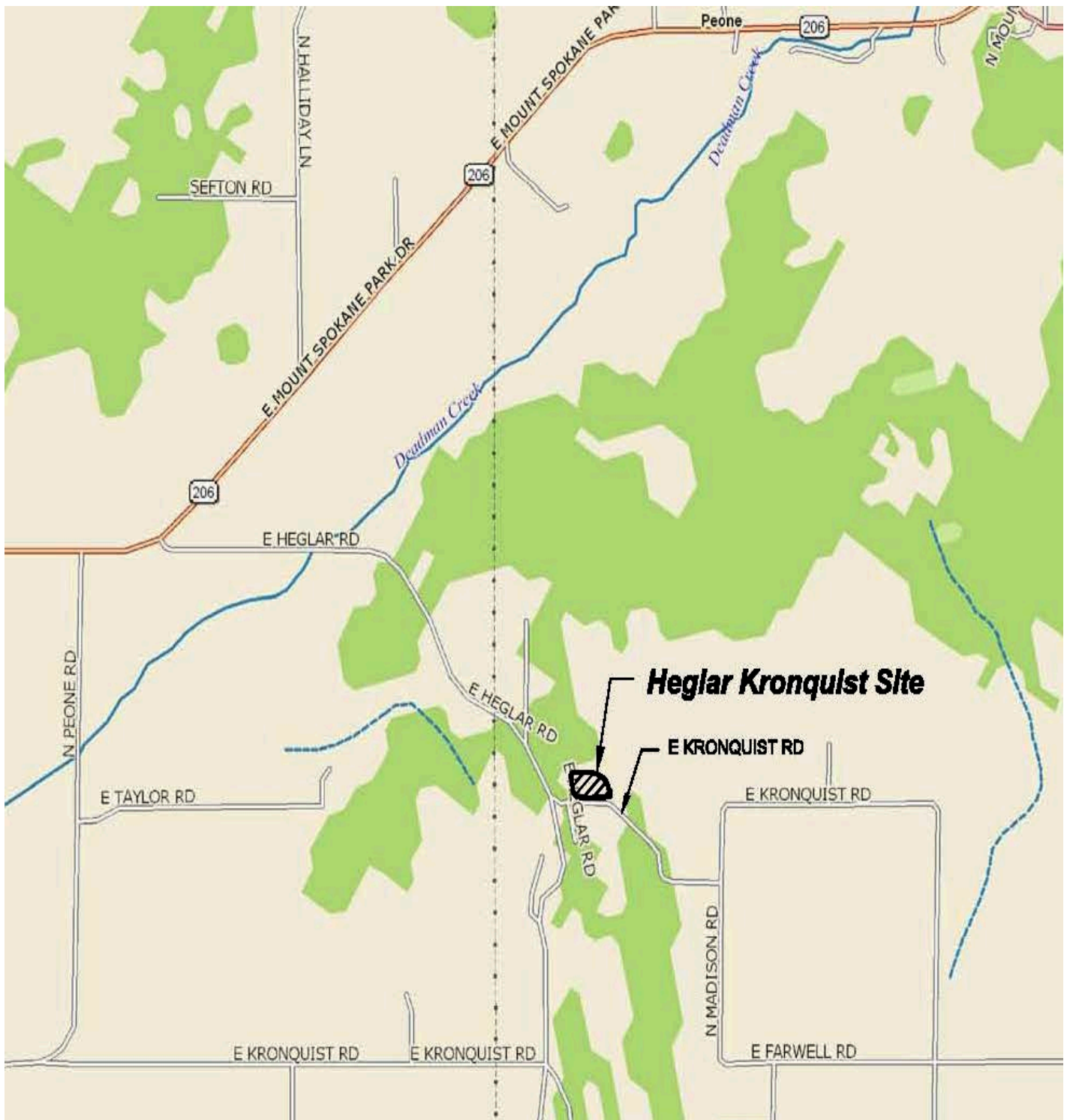
### **Livestock, Aquatic, or Crop Species**

Elevated levels of chloride and nitrates in groundwater and surface water in the spring/holding pond and drainage areas do not exceed acceptable EPA recommendations for livestock, aquatic or crop species.

### **What Happens Next?**

Ecology will respond to comments submitted by February 16, 2012. A Responsiveness Summary will be sent to all commenters and placed in the document review locations listed in the box on page 1. Ecology will make modifications to the report based on public comment if appropriate. If no changes are made, the report will become final. Then the draft Cleanup Action Plan will be made available for a public review in late spring 2012.





**Figure 1**  
**Site Location**