DEPARTMENT OF ECOLOGY
State of Washington

Heglar Kronquist Site

Toxics Cleanup Program **June 2011**

Results of Investigation 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 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 it is located. The Feasibility Study will evaluate cleanup options and will be available by early 2012.

Looking at the site in a westerly direction

How to Comment

You are invited to:

- **Review** the draft Remedial Investigation Report at one of the review locations listed in the box on the right.
- **Send** your comments to Teresita Bala at Ecology from **June 13 through July 13, 2011** for consideration.

The box on the right provides details about where to review documents and send comments. Ecology will hold a public meeting to discuss the results of the Remedial Investigation if ten or more people request such a meeting. Please contact Carol Bergin to request a meeting. Her contact information is in the shaded box on the right.

Fact Sheet June 2011

Comments Accepted
June 13 through July 13, 2011

Para asistencia en Español
Richelle Perez 360/407-7528

Если вам нужно помощь по русский, звоните
Tatyana Bistrevesky 509/928-7617

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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

Spokane Public Library
Hillyard Branch
4005 N. Cook St,
Spokane WA 99207

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 This Cleanup Matters

- Chemicals associated with aluminum dross may be harmful to human health and the environment if they exceed certain levels.
- Results of the Remedial Investigation and Feasibility Study will provide necessary data about contaminants that will aid in developing cleanup methods.
- The final cleanup will improve protection for human health and the environment.

Investigation Results

Past studies provided information about the type of site-related contaminants that might be in the area. The Remedial Investigation combined past information with new sampling and investigations.

This investigation focused on contaminants related to aluminum dross. Surface water and groundwater were evaluated to determine risk factors for humans, plants, aquatic and wildlife in the site area. Some of the contaminants analyzed included aluminum, antimony, arsenic, iron, manganese, calcium, potassium, sodium, chloride, fluoride, ammonia, nitrates, nitrites, PCBs, Total Dissolved Solids (TDS), and metals. Four boreholes were installed within the dross landfill in 2010. The materials observed in drilling through the protective cover or cap during this installation were different from what was seen in the 1980s. It is unclear at this time why there are differences.

Results of domestic well testing conducted in 2008 showed only one property with slightly elevated levels of potential site-related contaminants. Results of the Remedial Investigation indicate that properties outside of the site boundaries are not impacted by site-related contaminants. One private well was within the groundwater impact area; however, the well draws from a deep aquifer in the area and was not impacted by site-related contaminants.

Air Quality

Investigations were conducted to evaluate the air emissions from the site. The evaluation included air from the gas vents above the ground, boreholes in the landfill material, and ambient air which is the general air that people breathe. A wide range of chemicals were tested including ammonia, methane, carbon dioxide, and nitrogen. The detailed list of chemicals tested is found in the report.

All concentrations of chemicals tested both on the site and at the site boundaries were below required state standards for air emissions.

Surface Water and Groundwater

Groundwater within one mile of the site is used for domestic purposes including drinking water, livestock watering, and irrigation. Investigations included installation and sampling groundwater from soil borings and monitoring wells. Surface water samples were taken at specific locations. Results from these investigations show groundwater flows generally in a west and southwest direction. Details of the flows are best understood by reviewing the map in Figure 3. This map also represents information about the presence of chloride in groundwater. The presence of chloride in surface and groundwater is the best indicator that there are impacts from the dross in the landfill.

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. Locations for nitrate in groundwater are found in Figure 2.

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 (see Figures 2 and 3).

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 by-product from processing aluminum materials. 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 accepted by state laws.

Past Actions

Kaiser took several steps to address the contamination in 1984 including the installation of a cover designed to isolate and protect the dross pile. Eventually Kaiser purchased the property. Monitoring that occurred from the early 1980s through 2004 indicated decreasing but still elevated chloride and nitrates in springs down gradient of the site.

In December 2008, Ecology and Kaiser sampled 16 residential wells near the Heglar Kronquist site. Residents asked to have their wells tested because of concerns about how the site may have impacted their wells. Kaiser was already in the process of completing the Agreed Order with Ecology to determine the nature and extent of contamination. However, Kaiser responded to the community concerns and agreed to sample wells before the Agreed Order was final.

In 2010 Kaiser conducted field studies which are a part of the Remedial Investigation Report now available for comment.

What Happens Next?

Ecology will review and respond to all comment submitted by July 13, 2011. A written Responsiveness Summary will be prepared and 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.

The Feasibility Study Report will be made available for a public review in early 2012.

If you need this publication in an alternative format, call Carol Bergin at 509/329-3546. Persons with hearing loss, call 711 for Washington Relay Service. Persons with speech disability call 877/833-6341

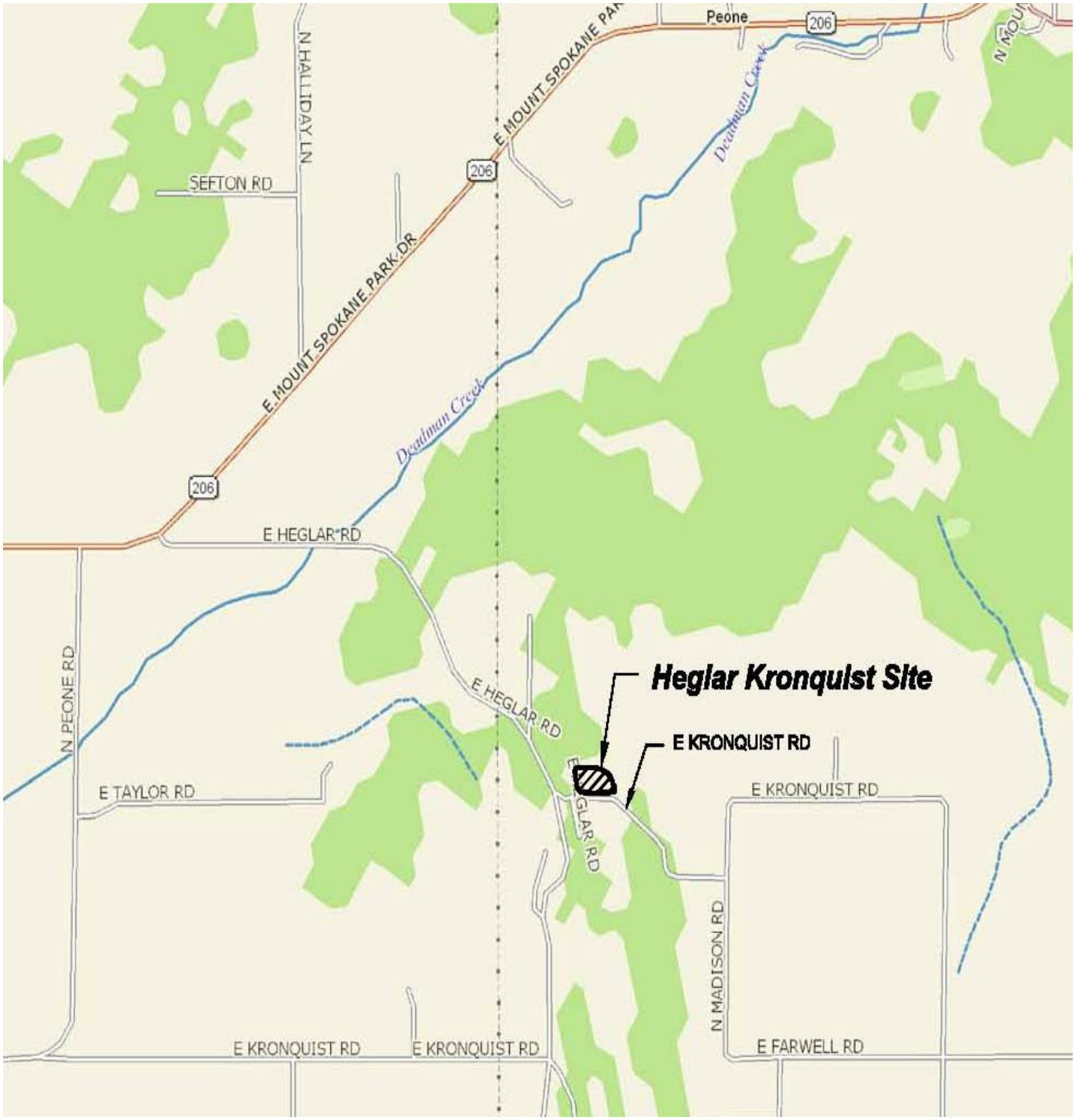

Figure 1
Site Location

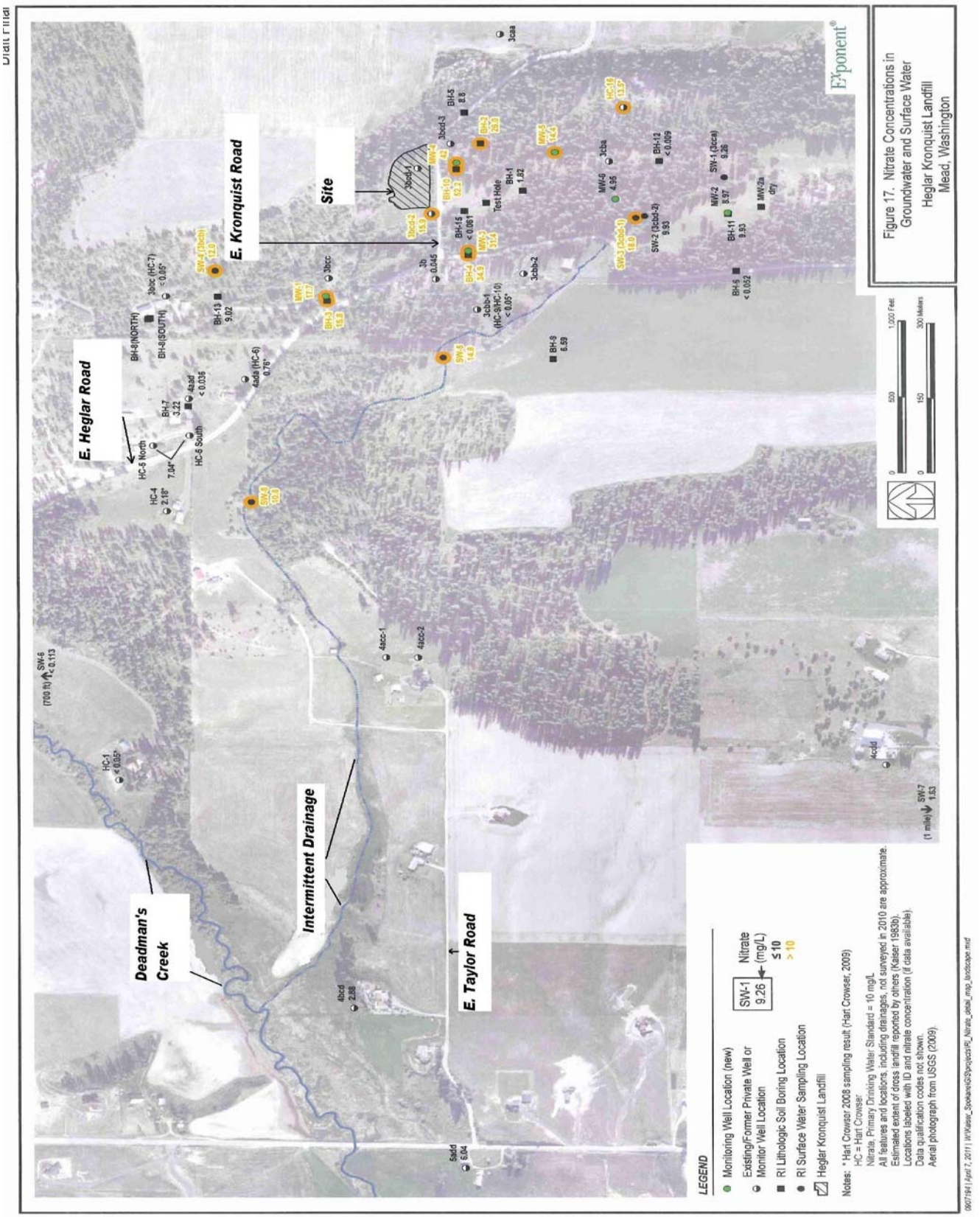

Figure 2
Nitrate in Surface and Groundwater
(Map details may be viewed more clearly on-line at the website listed in the box on page 1)

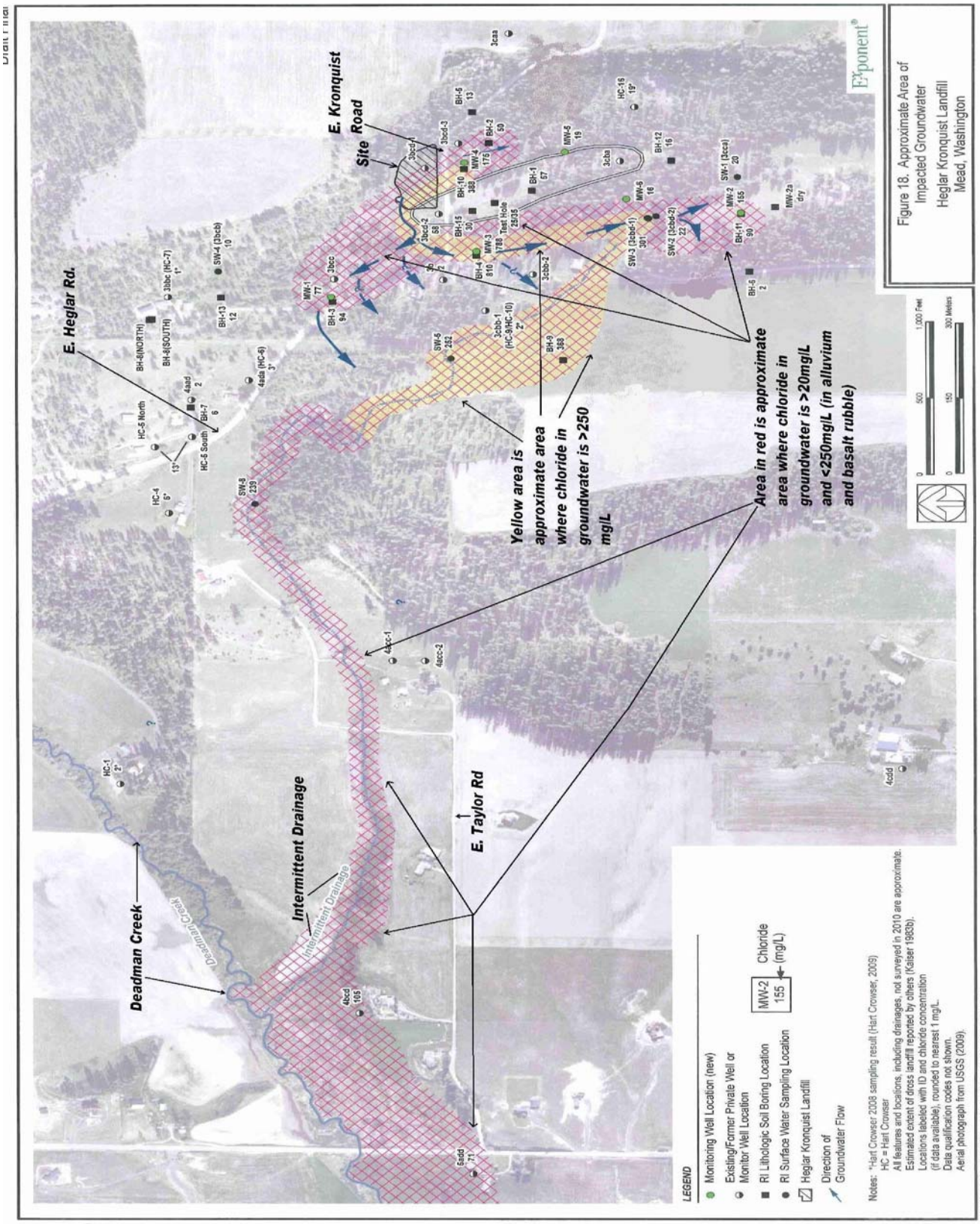

Figure 3
Chloride in Groundwater
(Map details may be viewed more clearly on-line at the website listed in the box on page 1)