Public Comment Period: Riffe Lake

Address: Rainey Creek, Morton, Lewis County
Facility Site ID: 61559576 **Cleanup Site ID:** 9890

We are accepting comments from **Monday, November 16** at 8:00 AM to **Thursday, December 17** at 11:59 PM.

Submit your comment:

Online (preferred):
go.ecology.wa.gov/comment9890

By mail or email:
Cam Penner-Ash, Toxics Cleanup Program
PO Box 47775
Olympia, WA 98504-7775
cam.penner-ash@ecy.wa.gov

More Information

Learn more, download documents, or subscribe to auto-updates at the project website: go.ecology.wa.gov/9890

Questions? Please reach out to Cam Penner-Ash, site manager, at (360) 999-9590 or cam.penner-ash@ecy.wa.gov.

Join our email list or request a public meeting: Please email Carolyn Subramaniam at carolyn.subramaniam@ecy.wa.gov. We will hold a public meeting if ten or more people request one.

Read Documents In Person:
Mountain View Timberland Library
10111 US Highway 12
Randle, WA 98377

Ecology Lacey office *by appointment only
300 Desmond Drive SE
Lacey, WA 98503
PublicDisclosureSWRO@ecy.wa.gov
360-407-6365

Cleanup work at the Riffe Lake site addresses contamination related to the former Kosmos townsite and lumber mill. The mill was in the area near Rainey Creek. Soil and groundwater in the former mill area contain contamination associated with past mill operations, former underground storage tanks and piping, and potentially other historical sources.

Ecology oversees work under Agreed Order No. DE 16955. The City of Tacoma, Tacoma Power Division, is the potentially liable person who is working with Ecology to address contamination.



Figure 1. A worker labels a soil sample to be sent to an environmental lab for testing.

Two documents are available for public review:

Draft Remedial Investigation is an environmental study describing contamination at the Riffe Lake cleanup site. The data in this report show what areas need to be cleaned up. The main 43-page analysis includes information about the site history, past cleanup work, and current contamination. This analysis is accompanied by over a thousand pages of documents such as sampling reports and data tables.

Draft Feasibility Study is a 34-page report comparing four alternatives to clean up the site. Tacoma Power found that Alternative 1, which is full removal of contaminated soil from the site, is the most viable alternative.

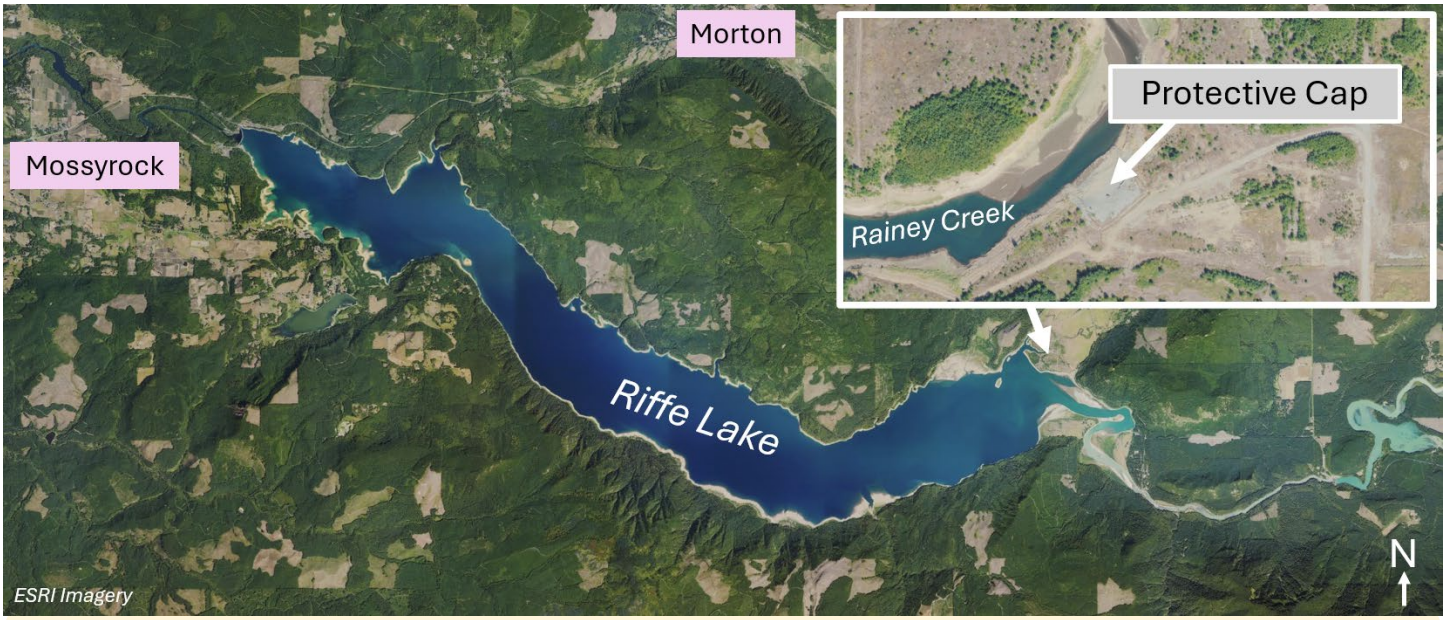


Figure 2. Aerial photos show the cleanup site location in the northeast area of Riffe Lake, along Rainey Creek. Part of the shoreline is covered by a protective cap, placed in 2019 as part of a site investigation and independent emergency remedial action.

Site History

Tacoma Power acquired the former Kosmos townsite and lumber mill in the 1960s and relocated the residents. The former mill was abandoned and demolished before Mossyrock Dam was completed in 1968, which created the Riffe Lake reservoir. Filling the reservoir then inundated portions of the former townsite and mill area. Currently, the Riffe Lake area offers recreational activities such as boating, camping and hang-gliding.

The Kosmos lumber mill operated in the Kosmos Flats between 1904 and the 1960s. Past lumber mill operations, including underground fuel storage tanks, contributed to contamination at the site.

In 1992, Tacoma Power removed two underground storage tanks related to the mill. One of the tanks near the former mill foundation held petroleum fuels which contained additives called halogenated hydrocarbons. The soil around the tank was contaminated with petroleum at levels exceeding state cleanup standards. Tacoma Power removed 87 cubic yards of contaminated soil and disposed of it appropriately.



Figure 3. Workers place an emergency protective cap by Rainey Creek in December 2019.

In April 2019, Ecology was notified about oil (Bunker-C type fuels) seeps on the eastern bank of Rainey Creek at the former mill area. In December 2019, as an emergency cleanup action, Tacoma Power removed about 11,000 tons of impacted soil during the emergency action. Workers also capped the seep area on the eastern bank of Rainey Creek. This stopped oil from moving into Rainey Creek, which was important to do before the water level in Riffe Lake rose above the site.

Draft Remedial Investigation

Remedial investigation work involved collecting and analyzing more than 200 soil samples, 40 groundwater samples, 6 surface water samples, and 17 sediment samples. An accredited environmental laboratory analyzed these samples to look for contamination.



Figure 4. An excavator digs a test pit as part of remedial investigation field work.

Most soil contamination is in the upper 10 to 18 feet below the ground surface (yellow areas in Figure 5). Contamination from soil is leaching down into groundwater, so groundwater at the site is also contaminated. Removing contaminated soil will likely improve groundwater conditions over time. Surface water and sediment samples in Rainey Creek met cleanup standards; Ecology is not requiring sediment or surface water cleanup.

Ecology identified several contaminants of concern for the site, including: total petroleum hydrocarbons (fuels such as gasoline, oil, and diesel), carcinogenic polycyclic aromatic hydrocarbons (cPAHs), lead, zinc, benzo(a)pyrene, fluoranthene, pyrene, and 1-methylnaphthalene.

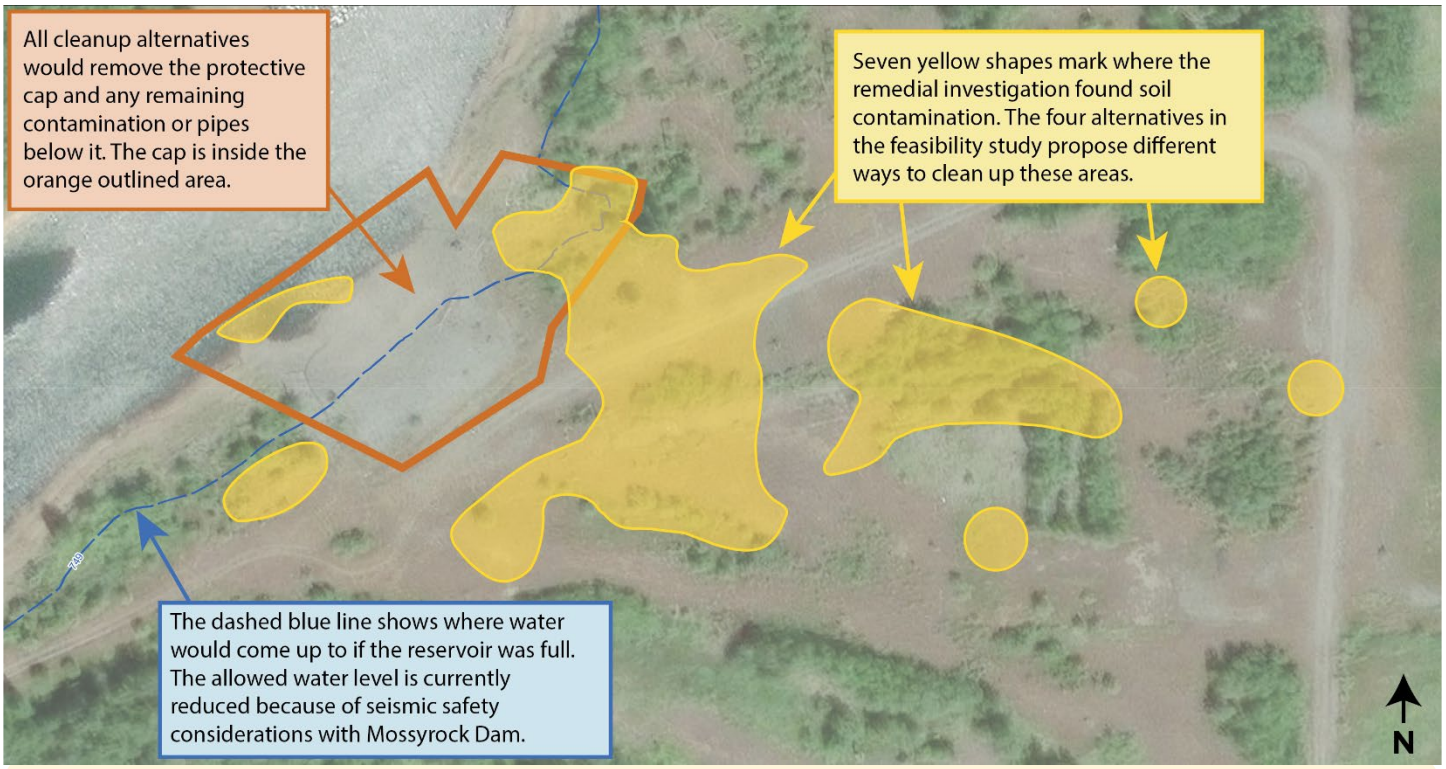


Figure 5. An aerial photo of the site shows the results of the remedial investigation. Yellow shapes mark where samples found soil contamination. These areas require cleanup to meet the standards of Washington's cleanup law, the Model Toxics Control Act.

Draft Feasibility Study



Figure 6. A photo looking to the southwest shows the protective cap on the left shoreline of Rainey Creek.

The feasibility study compares four concepts for how to clean up contamination at the site. All alternatives involve removing the protective cap and any remaining contamination or pipes below it. An explanation of each alternative is on pages 20-25 of the feasibility study.

Alternative 1 proposes completely excavating contaminated soil. This means digging down to about 18 feet deep and disposing about 26,500 tons of contaminated soil off-site at an appropriate landfill. Workers would fill in excavated areas with clean soil. Sampling and monitoring during the excavation process would confirm that we removed all contaminated soil. The restoration timeframe for Alternative 1 is about two years.

Alternative 2 is similar to Alternative 1, but would only excavate down to 15 feet and dispose about 25,500 tons of contaminated soil at an appropriate landfill. Some contaminated soil and groundwater would remain below the excavation. Tacoma Power would install groundwater monitoring wells and use monitored natural attenuation to evaluate whether remaining groundwater contamination decreases as expected. The restoration timeframe for Alternative 2 is about five years.

Alternative 3 proposes shallower excavation, down to 6 feet deep in most areas and down to 10 feet in hot spots. Workers would dispose about 19,000 tons of contaminated soil off-site. Before backfilling the excavation, workers would place an orange fabric layer at the base to warn future workers that contaminated soil is below. This alternative would use enhanced bioremediation to treat an estimated 3,900 tons of remaining contaminated soil. Bioremediation means mixing or injecting a compound into soil to encourage natural breakdown of target contaminants. Like in Alternative 2, Tacoma Power would install groundwater monitoring wells at the site so we could track groundwater contamination over time. The restoration timeframe for Alternative 3 is up to 30 years.

Alternative 4 would have the same excavation plan and bioremediation plan as Alternative 3. This alternative also includes installing a permeable sorptive barrier. As groundwater flows through the barrier, compounds in the barrier would capture contaminants and encourage biodegradation. The restoration timeframe for Alternative 4 is up to 30 years, to allow time for chemicals to naturally break down.

Submitting a Public Comment

Based on information from the remedial investigation and feasibility study, Ecology plans to support Alternative 1. Ecology and Tacoma Power used a weighted matrix to identify the cleanup option which is permanent to the maximum extent practicable. Each alternative receives a weighted benefit score based on protectiveness, permanence, long-term effectiveness, implementation risks, and implementability. Alternative 1 had the highest benefit score. For more information about the scoring for this project, please look at Table 10 of the feasibility study.

The feasibility study compares the benefit scores for each alternative to their estimated costs. This analysis balances Ecology's preference for permanent and cost-effective cleanups. At about $8,052,000, Alternative 1 had the lowest estimated cost. Based on the current evaluation, Alternative 1 has the highest weighted benefit score, lowest estimated cost, and is permanent-to-the-maximum-extent-practicable.

We receive a variety of public comments. Public comments can be questions, opinions, personal reflections, information about site history, and more. Within the constraints of our cleanup laws, Ecology considers public input during the remedy selection process. After selecting the cleanup alternative for the site, Ecology will prepare a draft cleanup action plan based on that alternative. The plan will be available for public comment in the future.

What's Next?

Ecology will review and respond to all comments we receive during the public comment period. Then, we will decide if the documents require any changes or are ready to be finalized. If we make significant changes to the documents, we will hold another public comment period.

Public Participation During Washington's Cleanup Process

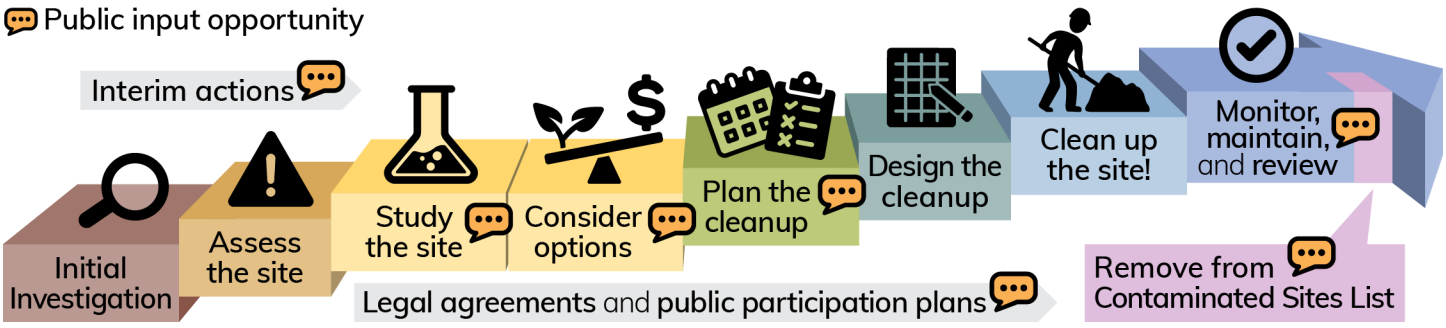


Figure 7. Cleanup steps under the Model Toxics Control Act. We are currently accepting comments on a draft remedial investigation ("study the site") and draft feasibility study ("consider options"). The next step, and public comment period, will be the draft cleanup action plan ("plan the cleanup").

The Model Toxics Control Act is Washington's environmental cleanup law. It works to protect people's health and the environment, and to preserve natural resources for the future. State law requires 30-day public comment periods throughout the cleanup process.

You can receive automatic updates from our system when documents are uploaded to our website. To get these updates, please go to the cleanup site webpage (go.ecology.wa.gov/9890) and click the blue "Subscribe" button in the top right. The system will email you when a new document is uploaded, or when a public comment period is open.

Toxics Cleanup Program
PO Box 47775
Olympia, WA 98504-7775

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Ecology is overseeing Tacoma Power's cleanup work at Riffe Lake. A draft environmental study about contamination at the site and report comparing cleanup options are available for public comment. This fact sheet explains background information and key takeaways about the project.

To request a public meeting, please contact carolyn.subramaniam@ecy.wa.gov. Ecology will hold a meeting if 10 or more people request it.

ADA Accessibility: To request an ADA accommodation, call (564)-250-0563, email carolyn.subramaniam@ecy.wa.gov, or dial 711 to call through the Washington Telecommunications Relay for services like text telephone (TTY).

Visit ecology.wa.gov/ADA for more accessibility information.

Language Services: We offer translation and interpretation services at no cost. To request them, email carolyn.subramaniam@ecy.wa.gov or call 564-250-0563. If you call, ask for an interpreter to be connected with one.