

BIODIVERSITY

Properly treating soil, water and equipment used on the right-of-way reduces the spread of infectious soil and waterborne diseases that can contaminate the biodiversity of an area.

As responsible stewards of the environment, Surerus Murphy Joint Venture's site-specific management plans direct teams on how to manage and treat soil, water, and equipment before, during and after project construction.

Project biosecurity management begins before construction. Environmental specialists walk the right-of-way and identify areas of concern where soil or waterborne diseases could exist, like microscopic fungi, spores, and others. Construction crews are provided digital maps and drawings that explain the project-specific environmental plans and specific mitigations and controls for the areas of concern to prevent proliferation of soil or water diseases.

Stewardship:

Surerus Murphy only uses disinfected equipment at our project sites. And our regimented disinfected process means there is negligible opportunity for disease to be conveyed from site-to-site via equipment.

When we encounter an area where there is soil fungus (i.e., clubroot), or waterborne disease (i.e., whirling disease in fish), we may set up a cleaning station on the right-of-way, often near a property boundary or access road. This allows us to clean equipment as it passes from one section to the next and minimizes the potential for disease to spread from one property to the next.

Disinfection:

Equipment is cleaned using a high-pressure wash. Once the soil and mud is removed, we use a diluted bleach solution to disinfect the machinery. (In some cases, there are other disinfection products that may be substituted instead of bleach.) The Canadian Association of Petroleum Producers (CAPP) protocol states that the bleach solution should remain on the equipment for 20 minutes (or until it freezes if doing winter construction) so any small spores or disease vectors are neutralized. The Alberta protocol says to soak for 20 – 30 minutes for successful disinfection.

Equipment cleaning



High-pressure water washing



Application of dilute bleach solution for disinfection



Our Commitment:

- To inform our site-specific management plans, we diligently follow Alberta's waterway maps that have identified where whirling disease is present and indicate severity of the disease through a color labeling system. We also follow the cleaning and disinfection guidelines, called "Decontamination Protocol for Work in or Near Water" when we cross zones.
- We use a tried and proven cleaning process for disinfecting equipment on the right-of-way, and to clean equipment between construction areas.
- We have invested in a state-of-the-art cleaning facility in its Fort St. John where we carefully clean equipment between projects. The facility operates like an automatic car wash but for heavy equipment. Water is recycled to reduce the use of water as a large piece of equipment may take several hours to thoroughly clean.

Did You Know?

Clubroot:

- Clubroot is a soil fungus that affects the growth of plants, particularly canola crops, and can reduce yield quantity and quality. Clubroot gets its name from the effect it has on the roots of the canola plant, which become stunted and deformed in a globular shape.
- No treatment exists to control clubroot. However, crop rotations have been shown to reduce the effect that the clubroot fungus has on canola. Planting something other than canola in the clubroot infested field on a two- or three-year cycle in rotation has a beneficial result and improves canola crop yields.
- Alberta has a publicly available map that indicates which counties have shown the presence of clubroot. A large portion of the agricultural areas of the province have been affected to some extent.

Whirling Disease:

- Whirling disease appears in watersheds and is a parasite whose lifecycle includes a bottom dwelling tubifex worm whose parasite is released into the water. The parasite burrows into its prey and after several weeks, the fish may exhibit spinal deformities and a black tail. The disease gets its name because a fish will begin displaying a whirling behavior when it swims. When the infected fish dies, the parasite releases spores, and the cycle continues.
- In Alberta, equipment, and tools (including boats construction tools, boats, and heavy machinery) that have been in water identified as a risk for whirling disease must undergo a three-step disinfection process to mitigate against the spread of whirling disease.
 - **Level 1** – potentially infected item should be cleaned, drained of all water, and then dried. This must be done prior to moving the item to another waterbody.
 - **Level 2** – item must be disinfected using a diluted bleach or other solution.
 - **Level 3** – item must be in contact with water or steam at 90° C or greater for 10 minutes.

Stories from the Field

Diseases such as clubroot and whirling disease are invisible to the naked eye. Therefore, adhering to strict protocols and available mapping information indicating areas of disease presence is critical.

Deep cleaning and disinfecting equipment prevents the spread of disease. At our equipment management facility in Fort St. John, equipment is put through a cleaning process much like an industrial car wash. Other tools, like PPE, hoses, shovels and other small tools and equipment are also cleaned.

When planning construction activities, consider how to best move the construction from area to area while considering the project schedule, engineering requirements, environmental restricted activity periods, and client expectations.

Clubroot



Whirling Disease



Supporting Canada's Energy Transition:

Surerus Murphy is supporting our clients who are constructing infrastructure for Canada's low-carbon economy. To meet our 2050 net-zero commitments, Canada's infrastructure requires new builds or retrofitted pipelines, facilities, and infrastructure. Building these assets is our wheelhouse.

We have a dedicated team of resources focusing solely on the energy transition who are researching current and developing technologies relating to hydrogen, hydrogen carriers (ammonia/methanol), carbon capture, bioenergy, as well as any other technologies that may be utilized for gas production, transportation, compression, or storage in a net-zero economy.

Whether it's the energy transition of a country or the transition of a product being moved through a pipeline, we build the infrastructure that delivers quality assets in a safe and timely manner and that adapt to the energy transition.

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