

Phytoremediation of Hydrocarbon-Contaminated Landfarmed Soil



Project Profile

Approximately 23,000 m³ of heavy end petroleum hydrocarbon (HEPH) contaminated drill cuttings were stockpiled or windrowed at four different landfarms. We monitored the bioremediation progress annually over a five-year period.

Issues

Due to the slow progress of bioremediation, another remedial strategy was needed at the four sites. The climate, road accessibility, and the volume of contaminated soil limited remedial options. The wetlands surrounding the landfarms caused elevated soil moisture content, further hindering bioremediation progress.

Solution

SynergyAspen proposed and implemented an experimental phytoremediation program at the Site. We mixed and reformed soil and four landfarm cells located away from the wetlands. We then planted a unique plant species at each landfarm to compare the effectiveness at phytoremediating HEPH-contaminated soil. We also fertilized the landfarms to encourage plant growth.

Outcome

Following the implementation of phytoremediation, HEPH concentrations decreased between 44% and 58% within one year. The uniqueness of this project enabled Synergy aspen to obtain a Scientific Research and Experimental Development (SR&ED) tax credit.