Ontario, Canada F1-F2 hydrocarbon contaminated site remediated with SR2020 and DXR™

CASE STUDY

PROJECT HIGHLIGHTS

- SR2020 and DXR™ used post-excavation to treat high concentrations of light crude oil (F1-F2) in soil
- 100% reduction seen in petroleum hydrocarbon impacted soil in 45 days

PROJECT SUMMARY

Due to the highly contaminated nature of the area, soil was excavated and brought to a soil processing facility for ex-situ remediation of F1 and F2 hydrocarbons. SR2020 and DXR™ were selected as the appropriate treatment, as it was specifically developed to treat petroleum hydrocarbons (F1-F4), benzene, toluene, ethylbenzene and xylenes (BTEX), and polycyclic aromatic hydrocarbons (PAHs) of varying concentrations in soil. Over the course of 45 days, a 100% reduction of heavily impacted F1-F2 contamination was seen, with a 50% reduction seen in approximately 15 days under average temperature (10-23°C) and precipitation levels.

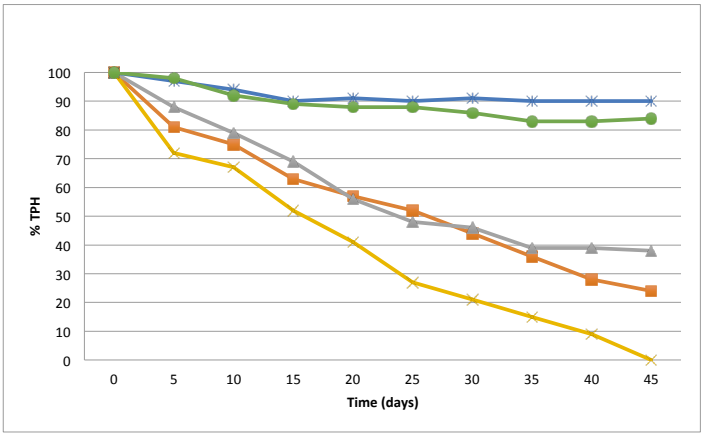

Figure 1. Total TPH (%) remaining of biopile contaminated with light crude oil treated with: SR2020 (orange square), competitor 1 (grey triangle), SR2020 and DXR™ (yellow cross), heat treated open pile (blue star) and untreated original source normal flora (green circle).

REMEDIATION APPROACH

Total moisture content and composition of soil was measured to determine appropriate dilution and application rates for concentrated DXRsoil™ solution. Product was applied once through a misting apparatus to ensure even distribution and maximize surface area coverage, as soil was tumbled into biopiles. Piles were left for 45 days, with no secondary application or oxygenation of soil.

TECHNOLOGY DESCRIPTION

SR2020 in conjunction with DXR™ utilizes a combination of native, non-pathogenic microorganisms and its corresponding biosurfactant product to augment the bioremediation process of total petroleum hydrocarbons (TPH) in soil. This unique technology allows for accelerated remediation of contaminants through the immediate breakdown of long-chain hydrocarbon molecules, enhancing the consumption of shorter chain hydrocarbons by microorganisms. Following TPH remediation, specialized bacteria work to replace lost nitrogen in the soil, promoting plant root formation and the restoration of natural flora at the site.