

PROJECT HIGHLIGHT

CLIENT: Industrial Facility

LOCATION: Carson, CA

TECHNOLOGY: Pneumatic Fracturing

LITHOLOGY: Clay, silt

CONTAMINANTS: PCE

an asymptotic mass removal. The objective of the Pneumatic Fracturing application was to enhance the extraction rate by increasing the bulk permeability of the treatment zone to achieve additional mass removal.

PNEUMATIC FRACTURING IN CLAY/SILT LITHOLOGIES

Site Information

A successful pilot test completed by Cascade lead to a full-scale implementation of Pneumatic Fracturing and proppant injection at a former industrial facility in Carson, California.

The existing Soil Vapor Extraction (SVE) system installed to remove extensive PCE contamination within the unsaturated soils had reached

Approach

Forty-five (45) boreholes were fractured between the depths of 40 ft bgs and 35 ft bgs in a silty and clayey sand formation while injecting a sand proppant to maintain the aperture of the created fractures in facilitation with the vapor extraction of the system.

RESULTS

After the Pneumatic Fracturing application, 12 of the 45 boreholes were converted into additional SVE extraction wells. Immediately after the conversion, they produced the highest volatile organic compound (VOC) recovery rates of all the SVE wells at the site. One year after the Pneumatic Fracturing implementation, 6 of the converted wells were still extracting significant quantities of PCE.

