

Steam Enhanced Extraction

LNAPL Recovery with Bioremediation at Petroleum Impacted Sites

Redox Tech has adapted Steam Enhanced Extraction (SEE) of contaminants originally developed at the University of California in the late 1990s to efficiently remediate free product in the subsurface. SEE is predominantly used on petroleum contaminated sites where superheated (~220F) water is injected through direct push points. Upon discharge into the formation the sudden drop in pressure causes the superheated water to flash to steam. Fluids including NAPLs, water and vapor are extracted at 2-inch PVC recovery wells. Sulfate is added to the injection water to supply an electron acceptor for anaerobic bioremediation after the SEE process is completed.

Advantages

- Combined remedial pathway – LNAPL extraction and *in situ* bioremediation.
- Increases solubility of petroleum compounds while decreasing surface tension accelerating removal from soil and groundwater.
- Addresses the “smear zone” by flushing the capillary fringe.
- Recovered fluids are separated and properly treated and disposed.



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919-678-0141 • www.redox-tech.com