



# NORFOLK ENVIRONMENTAL

## SITE ASSESSMENT AND REMEDIATION

### Site Remediation, Chemical Distributor, Holliston, MA

A bulk chemical distribution facility, which began business in 1967, was highly contaminated with chlorinated volatile organic compounds (VOCs). The site was situated on a 9 acre parcel of land with the plant operations using approximately 5.5 acres. Site investigations were conducted, including a Phase II Comprehensive Investigation, to determine the extent and degree of volatile organic contamination that had occurred over time. The Phase II Investigation showed up to 470 ppm of chlorinated VOCs. The chemical plant, having ceased operations due to high costs of remediating the site, required a cost-effective, efficient and focused remedial program to ensure compliance with the state and complete closure of the site.

Norfolk Environmental designed, constructed and performed the release abatement measure (RAM) using air sparging/soil vapor extraction on a Tier IA site. The full program required initial site investigation to assess migration of contamination, site monitoring and sampling, contaminant contour mapping, identification of priority areas of concern, a pilot study, construction of an artificial vadose zone, series of relief wells, full implementation of the air sparging/soil vapor extraction remedial method.



*Air Sparging/Soil Vapor Extraction remediation in process*

### Scope of Services

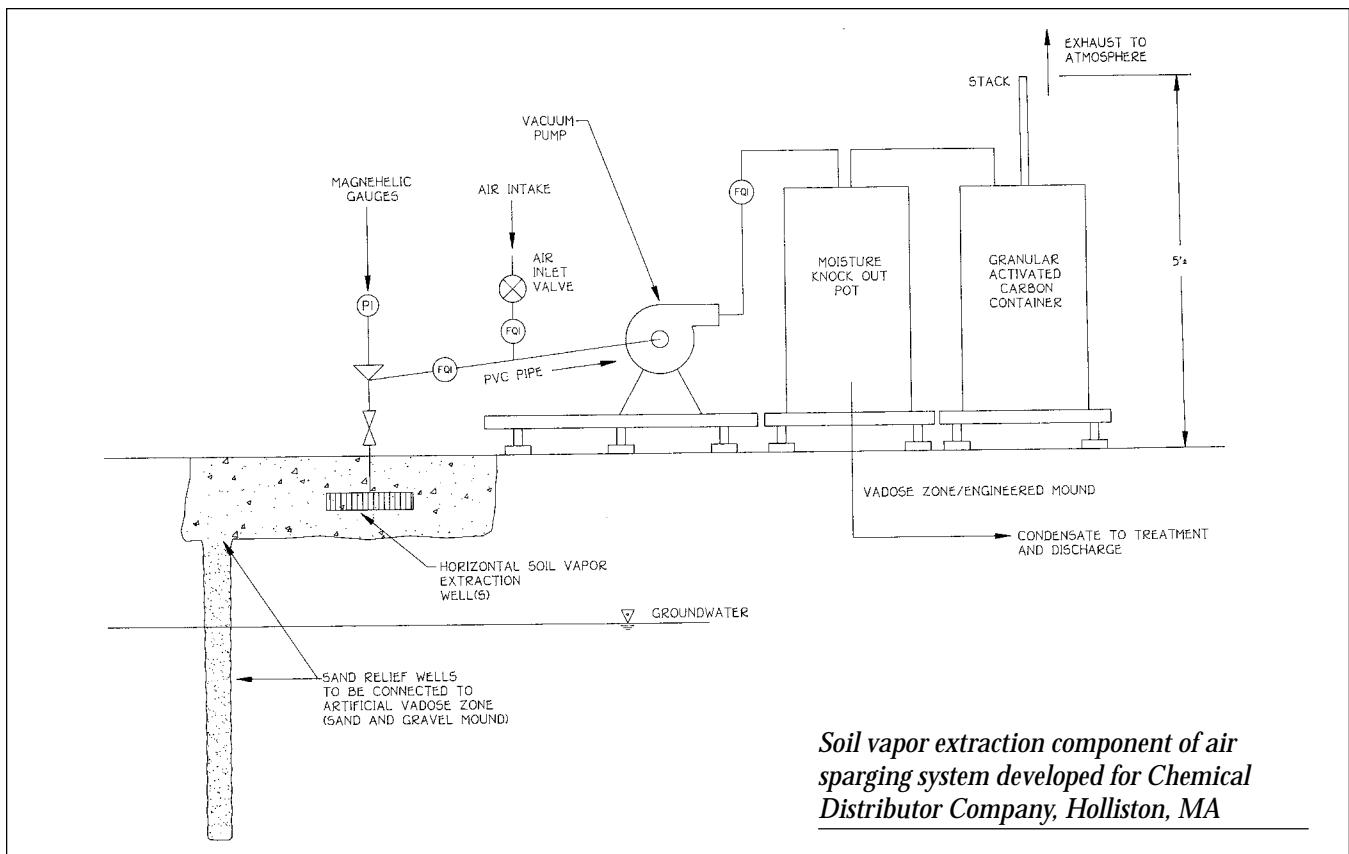
Norfolk Environmental in its efforts to design, construct and implement performed the following tasks to obtain successful cost effective remediation of the VOCs and semi-volatile compounds on-site.

- Prepared Release Abatement Measure (RAM) plan and implemented chlorinated/non-chlorinated solvent release.
- Worked with the Massachusetts Department of Environmental Protection to gain approval for the use of air sparging/soil vapor extraction.
- Constructed artificial vadose zone and a series of relief wells for control of migration of the sparge zone located along a surface water body.
- Fully implemented remediation technology for successful and complete remediation of the site at 1/3 the cost and 1/5 the time of conventional remedial methods.

*Please see other side*



*Site investigation using Geoprobe™ device for efficient determination and delineation of site contamination*



### Norfolk Mission Statement

Norfolk Environmental, a Division of Norfolk International Corporation, is an engineering, consulting and project management firm specializing in comprehensive environmental management for industrial and real estate clients, municipal and government agencies, and the military. The company's capabilities include regulatory compliance, environmental permitting, environmental due diligence, site assessment, remedial design and construction, site remediation and waste minimization

Norfolk's priority goal is to provide clients with immediate response, full service commitment, high quality consulting and cost effective solutions to their environmental concerns.

*Norfolk is one of the first environmental consulting firms to include Licensed Site Professionals under the new Massachusetts Contingency Plan and Chapter 21E of the Massachusetts General Laws. Norfolk also has Licensed Title V Inspectors, Certified Soil Evaluators, and Toxic Use Reduction (TURP) Planners on staff.*

### Core Service Areas

- Civil and Sanitary Engineering
- Industrial Environmental Consulting
- Site Assessment and Remediation
- Forensic Environmental Investigations

### Contact Information

For more information of Norfolk Environmental Services, please contact:

Brian Moran, P.E., L.S.P.	or	Mark Bartlett, P.E.
Vice President		President
508-822-5522		508-822-5522



**NORFOLK ENVIRONMENTAL**

Norfolk Environmental • 1244 Broadway • Raynham, MA 02767-1973 • Phone: 508-822-5500 • Fax 508-822-1611