

## **Drycleaner Site Profiles**

### **Hooker's Cleaners, Charlevoix, MI**

#### **Site Description**

This PCE drycleaning facility is located in a mixed commercial/residential setting. A lake is located approximately 250 feet northeast of the site. A commercial well in the area has been contaminated. There is also an upgradient PCE contaminant source.

The known contaminant source areas are the ground outside the facility where sludges were disposed and AST.

#### **Site Hydrogeology**

**Depth to ground water:** 49 ft.

**Lithology/subsurface geology:** surface-42 ft. bgs., medium-grained sand with minor gravel content; 42-85 ft. bgs, medium-grained sand with some fine-grained sand

**Conductivity:** NA

**Gradient:** 0.011 ft/ft

#### **Groundwater Contamination**

**DNAPLs Present:** No

**Contaminants present:** PCE

**Highest contaminant concentrations:** 1,290 µg/l PCE

**Deepest significant ground-water contamination:** unknown

**Plume size:** unknown

#### **Soil Contamination**

**Contaminants present:** PCE

Highest contaminant concentrations 2,000 µg/kg

#### **Description of Remediation Scenario**

Residential Well Cleanup Criteria: PCE = 5.0 µg/l;

Groundwater/Surface Water Interface Criteria: PCE = 34 µg/l

**Technologies Used:**

Air Sparging  
Soil Vapor Extraction (SVE)

**Any other technologies used:**

**Why was technology or technologies selected:** SVE is an effective technology for removing VOCs from permeable unsaturated sediments.

**Date Implemented:** August 23, 2001

**Final remediation design:** A linear sparge curtain was installed to prevent further migration of PCE-contaminated groundwater. No other design details available.

**Results**

As of May 15, 2002, the highest PCE concentration measured in groundwater samples was 62 µg/l. The system is scheduled to be turned off in late September, 2002, pending results of sampling at that time.

**Costs**

**Site assessment:** NA

**Design and implementation:**  
\$ 251,552

**O&M:** NA

**Total costs (only completed sites):**

**Lessons Learned**

1. Gravel encountered in shallow soils made it difficult and impractical to use Geoprobe at this site.
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**Site Specific References**

www.petoskynews.com Local news: Wednesday January 23, 2002 "State Official: Children not at risk" Petoskey News B.J. Hetler

Opinions - Jeremy McBain "Toxic Charlevoix Site Already Addressed" Petoskey News,

Jeremy McBain

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# Drycleaner Site Profiles

Sunny Village Cleaners, Livonia, MI

## Site Description

A spill of PCE occurred at this drycleaning facility on May 31, 1991 when a hose broke on a PCE delivery truck. The Livonia Fire Department and the Michigan Department of Environmental Quality responded to the scene to supervise remedial operations and 1000 gallons of liquid were recovered. The spill occurred on asphalt but PCE drained into stormwater catch basins. There is evidence that there was a prior contaminant release at the facility.

## Site Hydrogeology

**Depth to ground water:** 8-15 ft.

**Lithology/subsurface geology:** sand overlying silty clay, mixed fine to medium sand with traces of silt and gravel extending to 30 ft. bgs. Underlying these sediments is clay.

**Conductivity:** 3.17

**Gradient:** 0.0037

## Groundwater Contamination

**DNAPLs Present:** Yes

**Contaminants present:** PCE, TCE

**Highest contaminant concentrations:** PCE = 27,824 µg/l; TCE = 248 µg/l

**Deepest significant ground-water contamination:** 30 ft. bgs.

**Plume size:** 240 ft. x 240 ft.

## Soil Contamination

**Contaminants present:** PCE, TCE

Highest contaminant concentrations PCE = 2,131,000 µg/kg; TCE = 9,574 µg/kg

## Description of Remediation Scenario

**Cleanup Goals:** Remediate to drinking water criteria standards: PCE = 5.0 µg/l; TCE = 5.0 µg/l

**Technologies Used:**

Air Sparging  
Removal  
Soil Vapor Extraction (SVE)  
Carbon Adsorption

**Any other technologies used:**

**Why was technology or technologies selected:** The permeable sediments at the site are favorable to both SVE and air sparging.

**Date Implemented:** February, 1999

**Final remediation design:** 24 SVE wells, 112 air sparging wells in the system. SVE pilot test estimated a radius of influence of 45 ft.

**Results**

As of May, 2001, 284.4 pounds of PCE had been recovered from the soil and 34.7 pounds of PCE had been extracted from the groundwater.

**Costs**

**Site assessment:** No cost data are available for this site.

**Design and implementation:**

**O&M:**

**Total costs (only completed sites):**

**Lessons Learned**

1. The reduction in contaminant concentrations due to the operation of the SVE system has leveled off and the system does not seem to be effectively reducing contaminant concentrations below these levels.
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**Site Specific References**

NA

**Contacts**

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Environmental Response Division  
Southeast Michigan District Office  
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(734) 953-1458  
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Atwell-Hicks, Inc.  
6303 26 Mile Road  
Suite 100  
Washington, Michigan 48094  
(586) 786 9800  
<http://www.atwell-hicks.com/pages/locations.htm>

SECOR International, Inc. (SVE pilot test)  
27280 Haggerty Road  
Suite C-11  
Farmington Hills, Michigan 48331-3433  
(248) 489-5900  
<http://www.secor.com/>

ETG Environmental, Inc.  
7707 Rickle Road  
Lansing, Michigan 48917

Jeff Bolin  
Dragun Corp.  
30445 Northwestern Highway  
Suite 260  
Farmington Hills, Michigan 48334

HI PO Environmental Services, Inc.  
Ypsilanti, Michigan

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## Drycleaner Site Profiles

Vicksburg Laundry & Dry Cleaners, Vicksburg, MI

### Site Description

This is an active drycleaning facility that has been in operation since 1968. The facility is located in a mixed residential/commercial setting. The contaminant discharge occurred through a pipe leading from the facility to the soil outside the building.

### Site Hydrogeology

**Depth to ground water:** 6-7 ft.

**Lithology/subsurface geology:** 0-4 inches-topsoil; 4 inches-26.5 ft. bgs. - fine to medium-grained sand

**Conductivity:** 39 ft/day

**Gradient:** 0.0083 ft/ft

### Groundwater Contamination

**DNAPLs Present:** No

**Contaminants present:** PCE, TCE

**Highest contaminant concentrations:** PCE = 2,780  $\mu\text{g/l}$ ; TCE = 260  $\mu\text{g/l}$

**Deepest significant ground-water contamination:** 25 ft. bgs.

**Plume size:** 120 ft. x 440 ft.

### Soil Contamination

**Contaminants present:** PCE, TCE

Highest contaminant concentrations PCE = 17,164  $\mu\text{g/kg}$ ; TCE = 23  $\mu\text{g/kg}$

### Description of Remediation Scenario

**Cleanup Goals:** Reduce PCE and TCE to Residential Cleanup Criteria mandated by the state of Michigan for drinking water, - 5  $\mu\text{g/l}$  PCE, 5  $\mu\text{g/l}$  TCE.

#### Technologies Used:

Air Sparging

Soil Vapor Extraction (SVE)

Carbon Adsorption

**Any other technologies used:**

**Why was technology or technologies selected:** Other technologies that were examined were not as applicable or more expensive and impractical for the site characteristics.

**Date Implemented:** Summer, 1995

**Final remediation design:** SVE and air sparging. Treatment with carbon adsorption.

**Results**

The system was deactivated in November of 1997. The contaminated area north of the facility has been reduced to acceptable drinking water cleanup criteria. Groundwater monitoring for the remaining portion of the contaminant plume will continue.

**Costs**

**Site assessment:** No cost data are available.

**Design and implementation:**

**O&M:**

**Total costs (only completed sites):**

**Lessons Learned**

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**Site Specific References**

NA

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