



Case Study #12 – Ventura, CA (Chlorinated Project)

Scope of Work

CalClean was contracted to install and operate a High Vacuum Soil Vapor Extraction (HVSVE) for a confidential client located in Ventura, CA. The subject site was developed as an active dry cleaner facility and subsurface soil were found to contain elevated concentrations of tetrachloroethylene (PCE), a common dry cleaning agent. A soil gas sample collected from 5 feet below grade contained PCE at a concentration of 3,600 µg/L and significantly exceeded the California Human Health Screening Level (CHHSL) of 0.6 µg/L for commercial property.

Soil remediation using HVSVE was completed from March 5, 2014 to June 25, 2014 to reduce concentrations of PCE in the shallow soils to levels acceptable for closure by the Ventura County Cleanup Program (VCCP).

Lithology

The upper 5 to 10 feet of sediment beneath the Site consists of a mixture of silty clay and sandy clay. Underlying the upper clay layer are native alluvial materials composed of silty-gravelly sand containing fine to medium sands interspersed with granule gravel layers to 100 ft bgs. The depth to groundwater is greater than 100 ft. bgs.

Results

Over the approximate 4 month period, 60.07 pounds or 4.46 gallons of PCE were removed during 105 days of extraction. A HVSVE rebound test was conducted for a period of 5 days from July 2, 2014 to July 7, 2014. Total influent concentrations decreased over the period of the test to a final influent concentration of 1.36 µg/L as sampled on July 7, 2014.

Based upon the verification soil vapor sample results, the concentration of PCE in subsurface soil was significantly reduced. The consultant completed an analysis of the human health risk associated with vapor intrusion to indoor air. Based upon the model analysis, residual concentrations of PCE in the subsurface soils do not represent a human health risk greater than generally accepted standards for a commercial property.

Services Used

- Trailer-Mounted Mobile High Vacuum Soil Vapor Extraction (300 CFM Liquid-Ring Blower) and Activated Carbon Treatment System (three 1,000 lbs. vessels).

NFA issued May 6, 2015

May 6, 2015

File #SR0010070

Via email: Sonny@4seasonscleaners.net

Mr. Sonny Shah
Four Seasons Dry Cleaners
1746 South Victoria Avenue #A
Ventura, CA 93003

**COMPLETION OF VENTURA COUNTY CLEANUP PROGRAM REQUIREMENTS:
FOUR SEASONS DRY CLEANERS, 1746 VICTORIA AVE. #A, VENTURA, CALIFORNIA**

This letter confirms completion of the site investigation, remediation and risk assessment described in Ventura County Cleanup Program Remedial Action Agreement No. SR0010070.

The Ventura County Environmental Health Division (EHD) staff completed a review of soil and soil vapor assessment and remediation reports submitted to EHD for the subject site. The reports indicate that residual concentrations of tetrachloroethylene (PCE) and trichloroethylene (TCE) from the dry cleaning facility are present in soil and soil vapor beneath the site; however, the results from the indoor air quality sampling and site-specific health risk evaluation suggest that the residual contamination does not pose a threat to human health or the environment.

Based on the information provided and with the provision that this information is accurate and representative of site conditions, EHD has determined that no further action is warranted at this site with respect to the PCE and TCE contamination. The site is approved for commercial and industrial use; however, because of the residual contamination, any other site use may require additional corrective action.

If you have any questions, please contact Gina Teresa at 805/662-6510 or Gina.Teresa@ventura.org.



Rick Bandelin, Manager
Ventura County Cleanup Program
Environmental Health Division

Enclosure: Case Closure Summary Form

- c: Mr. Joseph Schaaf, GeoEnviro Services, Inc (w/o enclosure via email)
- Ms. Sarah Booley, Montalvo Square Associated, LLC (w/o enclosure via email)

Case Closure Summary

Ventura County Cleanup Program

I. Agency Information

Date: May 5, 2015

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|--|--|
| Agency name: Ventura County Environmental Health | Address: 800 South Victoria Avenue |
| City/State/ZIP: Ventura, CA 93009-1730 | Phone: 805-662-6510 |
| Responsible staff person: Gina L. Teresa | Title: Environmental Health Specialist |

II. Case Information

| | |
|--|---|
| Site facility name: Four Seasons Dry Cleaners | |
| Site facility address: 1746 South Victoria Avenue #A, Ventura, California, 93003 | |
| RB Case No: n/a | Local Case No: SR0010070 |
| Responsible Parties: | Interested Parties: |
| Mr. Sonny Shah Four Seasons Dry Cleaners 1746 S. Victoria Ave. #A Ventura, California 93003 Sonny@4SeasonsCleaners.net | Ms. Sarah Booley Montalvo Square Associated, LLC 7777 Edinger Ave. #133 Huntington Beach, California 92647 epmlc@me.com |

III. Release and Site Characterization Information

| Cause and type of release: Tetrachloroethylene (PCE) and trichloroethylene (TCE) | | | |
|--|--|--|----------------------------|
| Site characterization complete? Yes | | Date approved by oversight agency: 5/05/2015 | |
| Monitoring Wells installed? No | Number: 0 | Proper screened interval? n/a | |
| Depth to Ground Water below ground surface: greater than 100 feet | | Flow direction: southerly | |
| Most sensitive current use: Commercial | | | |
| Are drinking water wells affected? No | Aquifer name: Santa Clara River-Mound Subbasin | | |
| Is surface water affected? No | Nearest/affected SW name: n/a | | |
| Off-site beneficial use impacts (addresses/locations): None | | | |
| Report(s) on file? Yes | Where are reports filed? State's GeoTracker database | | |
| Treatment and Disposal of Affected Material: | | | |
| Material | Amount | Action | Dates |
| PCE (soil vapor) | 60 pounds | Soil Vapor Extraction | Between 3/05/14 to 6/25/14 |

Case Closure Summary
Ventura County Cleanup Program

III. Release and Site Characterization Information (Continued)

| Maximum Documented Contaminant Concentrations | | | | | |
|---|--------|-------|--|--------|---------|
| Max. Contaminants in Soil | mg/kg | | Max. Contaminants in Indoor Air Sample | ug/L | |
| | Before | After | | Before | After |
| Tetrachloroethylene | 22 | NA | Tetrachloroethylene | 0.39 | 0.00217 |
| Trichloroethylene | 0.76 | NA | Trichloroethylene | 0.08 | NA |
| Max. Contaminants in Soil Vapor 2-5' | ug/L | | Max. Contaminants in Soil Vapor 15' | ug/L | |
| | Before | After | | Before | After |
| Tetrachloroethylene | 3,600 | 862 | Tetrachloroethylene | 12 | NA |
| Trichloroethylene | 630 | 5.68 | Trichloroethylene | 0.33 | NA |

Comments: NA = Not Available, Not Applicable or Not Analyzed

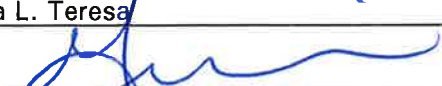
Soil, soil vapor and indoor air quality analytical results are summarized from submitted reports. These reports are available online in the State's GeoTracker database. The facility is an active dry cleaners located in a commercial strip mall that has been in operation since 2002. Contamination from tetrachloroethylene (PCE) and trichloroethylene (TCE) was identified during phase II site assessment activities. Groundwater was not encountered. 60 pounds of PCE was removed during soil vapor extraction activities conducted at the site from March 5, 2014 to June 25, 2014. The maximum detected PCE and TCE concentrations in soil are limited in area and are less than the USEPA Regional Screening Levels for commercial soil.

The indoor air samples collected from inside the active dry cleaners, the upstairs office space, and the adjacent martial arts studio were assessed as part of a health risk evaluation. Results of the Vapor Intrusion Screening Model for Soil Gas completed by GeoEnviro Services, Inc (GESI) indicate the cumulative carcinogenic risk associated with residual PCE contamination in soil vapor at the site was less than the 1×10^{-5} regulatory target, and the cumulative health hazard quotient was reported to be below the applicable limit of 1.0. Based on the Indoor Air Sampling results, and the Health Risk Evaluation prepared by GESI, EHD approves case closure for the site under its current commercial land use.

IV. Closure

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|---|--|----------------------|
| Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes | | |
| Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes | | |
| Do cleanup levels exceed Regional Board requirements? No | Identify: n/a | |
| Rationale for exceeding RB requirements: n/a | | |
| Does corrective action protect public health for current land use? Yes | | |
| Site management requirements: None | | |
| Should corrective action be reviewed if land use changes? Yes, if land use changes to residential | | |
| Monitoring wells Decommissioned: n/a | Number Decommissioned: n/a | Number Retained: n/a |
| List enforcement actions taken: None | List enforcement actions rescinded: None | |

V. Local Agency Representative Data

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| Name: Gina L. Teresa | Title: Environmental Health Specialist |
| Signature:  | Date: 5/5/2015 |