



Indoor Air Post mitigation, Sampling Site X California

Radiello Sampler

Summary

Media:	Indoor air
Study Type:	Indoor air monitoring using passive sampling
Technology:	Radiello 130 - Accumulation
Peer Reviewed:	No
Publication Date:	August 27, 2019

Study Description

General site description and conditions

The site occupies approximately 15 acres with several buildings used for industrial manufacturing, a maintenance shop, a chemical storage warehouse, and a wastewater treatment plant with small laboratory, office, and maintenance shop. An asphalt parking lot occupies approximately half the site surface area, and a highway is approximately 0.5 mile from the site.

Compounds

Contamination of site media resulted from solvent degreasers, plating, and surface preparation activities. Compounds are volatile organic compounds (VOCs), and include tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), vinyl chloride (VC), and benzene.

Sampling frequency of Compounds

Indoor air monitoring is conducted semiannually. The passive sampling conducted with the Waterloo Membrane System with Thermal Desorption (WMS-TD) and Radiello 130 (RAD130) sampler were 7-day sampling periods. One 24-hour indoor air sample was also collected using a Summa canister, for comparison to the RAD130. This case study also reports results from limited indoor air sampling conducted at this site from January 2017 through July 2019.

Technology used

This site employed Waterloo Membrane Samplers with Thermal Desorption (WMS-TD) with 7-day sampling period to monitor indoor and ambient air for this site. However, the analytical laboratory used for analysis of indoor air samples for this site discontinued WMS-TD analysis and recommended the Radiello 130 (RAD130) passive sampler with 7-day sampling period to provide similar reporting limits as the 7-day WMS-TD. U.S. EPA Method TO-17 was used to analyze WMS-TD samples. RAD130 employs solvent extraction (SE) for analysis with modified U.S. EPA Method TO-17. Summa canister sampling for analysis by U.S. EPA Method TO-15 were also conducted for a side-by-side comparison with the Radiello samples.

Remedial Phase

This semiannual indoor air sampling was conducted to evaluate potential intrusion of vapor-forming chemicals from the subsurface for postremedial monitoring.



Outcome

This case study presents data from semiannual indoor air sampling events using WMS-TD and RAD130 passive samplers, in different sampling events. One Summa canister sample was taken side-by-side with a RAD130 sample for comparison of results.

The study concluded that the 7-day RAD130 sampling results were comparable to previous sampling conducted using the WMS-TD 7-day sampling. Comparison of the 7-day RAD130 sampler to the colocated 24-hr Summa canister sample indicated a good correlation with similar reported concentrations or concentrations in the same magnitude for most of the chemicals reported. However, there were chemicals reported with analysis of the Summa canister samples that were not analyzed for in the RAD130.

Case Study Reference

CDM Smith, Semi-Annual indoor Air Post-Mitigation Sampling – June 2019, X Facility, Santa Ana, California, CDM Smith (Irvine, CA), August 27, 2019.