ACRONYMS

AFB	Air Force Base
ASTM	American Society of Testing and Materials
BTEX	Benzene, toluene, ethylbenzene, and xylenes
BHD	Borehole dilution
bgs	below ground surface
COC	contaminant of concern
CPT	cone penetrometer testing
CSM	conceptual site model
DCE	dichloroethene
DNAPL	dense, nonaqueous-phase liquid
ECOS	Environmental Council of the States
ERIS	Environmental Research Institute of the States
ESTCP	Environmental Security Technology Certification Program
GMS	Groundwater Modeling Software
gpm	gallons per minute
HRP	high-resolution piezocone
IPT	integral pump test
ITRC	Interstate Technology & Regulatory Council
LC	Launch Complex
MCL	maximum contaminant level
MIP	membrane interface probe
MIPT	modified integral pump test
MLS	multilevel sampler
MNA	monitored natural attenuation
MtBE	methyl tertiary-butyl ether
NAPL	nonaqueous-phase liquid
NASA	National Aeronautics and Space Administration
PAH	Polycyclic aromatic hydrocarbon
PCE	perchloroethene
PFM	passive flux meter
PZ	piezometer

RAO	remedial action objective
RI	remedial investigation
SEAR	surfactant-enhanced aquifer restoration
SERDP	Strategic Environmental Research and Development Program
TCE	trichloroethene
TCW	tandem circulating well
TM	transect method
TMB	trimethylbenzene
TRW	tandem recirculating well
USEPA	U.S. Environmental Protection Agency
VOA	volatile organic analysis
VOC	volatile organic compound

SYMBOLS

A	area of the control plane
A_i	area of the polygon
A_j	flow area through polygon
b	uniform thickness, aquifer thickness
C	contaminant concentration
°C	degrees Centigrade, Celsius
C_F	averaged A_j area associated with an individual measurement (m^2)
C_F	flux averaged concentrations
C_j	concentration of constituent at polygon cm (centimeter)
C_n	individual concentration
C_o	initial dissolved aqueous resident tracer concentration individual measurement point in the pore fluid transect (µg/L)
C_{sw}	contaminant concentration in water extracted from the supply well (mass/volume)
d	day
ft	foot, feet
g	gram
i	hydraulic gradient
i_j	hydraulic gradient at individual point (cm/cm)

J	mass flux (mass/time/area)
J_c	time-averaged advective contaminant mass flux
J_i	mass flux measurement at location *i*hydraulic conductivity
kg	kilogram
kg/year	kilograms per year
K_j	individual hydraulic conductivity at polygon term
K_n	individual K_j hydraulic conductivity term at individual point (cm/sec)
K_{ow}	octanol-water partition coefficient
K_p	Kreundlich equilibrium partition
K_{sp}	mineral solubility product
L	liter
L	length
L^2	area
L^3	volume
$L^3/L^2/t$	volume per area per time (L/m^2/d)
m	meter
M	mass
M_c	mass of contaminant sorbed
M_d	mass discharge (e.g., g/area)
M_{dj}	mass discharge through polygon mg milligram
M_r	relative mass of tracer remaining in the PFM sorbent
M/t	mass per time (e.g., g/d)
$M/L^2/t$	mass per area per time (e.g., g/m^2/d)
P_b	bulk density of the sorptive matrix
q	groundwater velocity, specific discharge, average
Q	groundwater flux discharge
q_j	specific discharge through polygon
q_0	Darcy groundwater flux, Darcy groundwater velocity
q_{sw}, Q_{sw}	pumping rate of supply well
r	radius of the PFM cylinder
R_d	retardation of the resident tracer on the PFM sorbent

R_{dc} retardation of the contaminant on the PFM sorbent

t time

T aquifer transmissivity (volume/time sampling duration)

w mass discharge of plume near water supply well (mass/time)

α convergence or divergence of flow around the PFM

Δh head difference between the pumping well and the observation well

Δx distance between pumping well and observation well

µg/L micrograms per liter

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