The Fate, Transport, and Ecological Impacts of Airborne Contaminants in Western National Parks (USA)

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Abbreviations, Acronyms, and Symbols

ºC	degrees Celsius
µeq/L	microequivalencies per liter
µL	microliter
µm	micrometer
^{137}Cs	radionuclide of cesium
^{210}Pb	radionuclide of lead
^{226}Ra	radionuclide of radium
^{241}Am	americium, radioactive decay product of ^{241}Pu (plutonium)
a-HCH	hexachlorocyclohexane-alpha (also α-HCH)
Al	aluminum
ANOVA	analysis of variance test
ARD	Air Resources Division (of the National Park Service)
As	arsenic
B	boron
Ba	barium
BAND	Bandelier National Monument
BDL	below detection limit
Be	beryllium
BeP	benzo[e]pyrene
Bi	bismuth
BIBE	Big Bend National Park
C	carbon
Ca	calcium
CAAS	combustion atomic absorption spectrophotometry
CBL	Chesapeake Bay Laboratory
Cd	cadmium
Ce	cerium
CI	confidence interval
CIC	constant initial concentration

Cl^-	chloride
CLDN	chlordane
CLPYR	chlorpyrifos
cm	centimeter
cm^3	cubic centimeter
Co	cobalt
Cr	chromium
CRLA	Crater Lake National Park
CRS	constant rate of supply
Cs	cesium
Cu	copper
CUP	current-use pesticide
CWSC	Colorado Water Science Center Laboratory (USGS)
DCM	dichloromethane
DCPA	dacthal
DENA	Denali National Park and Preserve
DL	detection limit
DOC	dissolved organic carbon
dw	dry weight
Dy	dysprosium
EA	ethyl acetate
ECNI	electron capture negative ionization
ECRC	Environmental Change Research Centre
ECSMTP	Standards, Measurements, and Testing Program of the European Commission
EDL	estimated detection limit
EI	electron impact
EMAP-SW	Environmental Monitoring and Assessment Program – Surface Water
ENDO	endosulfan
EPA	Environmental Protection Agency
EPA-ORD	EPA Office of Research and Development
Er	erbium
ERRC	Environmental Radioactivity Research Centre
Eu	europium

FF	focusing factor
g	gram
GAAR	Gates of the Arctic National Park and Preserve
GC/MS	gas chromatography mass spectrometry
Gd	gadolinium
GFF	glass fiber filter
g-HCH	hexachlorocyclohexane-gamma, or lindane (also γ-HCH)
GIS	geographic information system
GLAC	Glacier National Park
GLBA	Glacier Bay National Park and Preserve
GPC	gel permeation chromatography
GRSA	Great Sand Dunes National Park and Preserve
GRTE	Grand Teton National Park
ha	hectare
HCB	hexachlorobenzene
HCl	hydrochloric acid
He	helium
HF	hydrofluoric acid
Hg	mercury
HgS	mercury sulfide
Hg_{tot}	total mercury
HNO_3	nitric acid
Ho	holmium
HUP	historic-use pesticide
IAS	inorganic ash spheres
IBC	industrial/urban use compounds
IcdP	indeno[1,2,3-cd]pyrene
ICP-AES	inductively coupled plasma-atomic emission spectrophotometry
ICP-MS	inductively coupled plasma-mass spectrometry
IMPROVE	Interagency Monitoring of Protected Visual Environments Program
JMP	statistical software package (SAS Institute, Cary, North Carolina)
K	potassium
KATM	Katmai National Park and Preserve

kg	kilogram
kg/ha/yr	kilogram per hectare per year
K_{ow}	octanol-water coefficient
kV	kilovolt
L	liter
La	lanthanum
LAVO	Lassen Volcanic National Park
Li	lithium
m	meter
MA	macrophage aggregate
MDL	method detection limit
MeHg	methyl mercury
Mg	magnesium
mg/kg	milligram per kilogram
mg/L	milligrams per liter
mL	milliliter
mm	millimeter
Mn	manganese
Mo	molybdenum
MORA	Mount Rainier National Park
N	nitrogen
N_2	dinitrogen (or nitrogen gas)
Na	not applicable (also NA)
Na	sodium
NCEP	National Centers for Environmental Prediction
NCLR	nonachlor
Nd	neodymium
ng/g	nanogram per gram
ng/L	nanograms per liter
ng/µL	nanogram per microliter
NH_4^+	ammonium
NHEERL	National Health and Environmental Effects Research Laboratory
Ni	nickel

NIST	National Institute of Standards and Technology
nm	nanometer
NO_3^-	nitrate
NOAA	National Oceanic and Atmospheric Administration
NOAT	Noatak National Preserve
NOCA	North Cascades National Park
NO_x	nitrogen dioxide
NPS	National Park Service
NRC	National Research Council
NRCC	National Research Council of Canada
O_2	oxygen
OC	organochlorines
OLYM	Olympic National Park
ORNL	Oak Ridge National Laboratory
OSU	Oregon State University
PAH	polycyclic aromatic hydrocarbon
PASD	passive air sampling device
Pb	lead
PBDE	polybrominated diphenyl ether
PBT	persistent, bioaccumulative, and toxic
PC	particulate carbon
PCB	polychlorinated biphenyl
PE	percent enrichment
Pg	picogram
pg/g ww	picogram per gram wet weight
POP	persistent organic pollutant
Pr	praseodymium
PRISM	Parameter-elevation regressions on independent slopes model
PTFE	polytetrafluoroethylene
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
Rb	rubidium
Re	rhenium

RIA	radioimmunoassay
RO	reverse osmosis
ROMO	Rocky Mountain National Park
RSD	relative standard deviation
S	sulfur
Sb	antimony
SCP	spheroidal carbonaceous particle
SD	standard deviation
Se	selenium
SE	standard error
SEC	Simonich Environmental Chemistry Laboratory
SEKI	Sequoia and Kings Canyon National Parks
SiO_2	silica (silicon dioxide)
Sm	samarium
SO_4^{2-}	sulfate
SOC	semi-volatile organic compound
Sr	strontium
SRM	standard reference material
STLE	Stikine-LeConte Wilderness, Tongass National Forest
SWE	snow water equivalent
Tb	terbium
TC	total carbon
Te	tellurium
TIC	total inorganic carbon
Tl	thallium
Tm	thulium
TOC	total organic carbon
U	uranium
UMNRAL	University of Minnesota Research Analytical Laboratory
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
USGS-BRD	USGS Biological Resource Division

USGS-CWSC	USGS Colorado Water Science Center
USGS-NRP	USGS National Research Program (Trace Element Environmental Analytical Chemistry Project)
USGS-WWSC	USGS Wisconsin Water Science Center
V	vanadium
Vtg	vitellogenin
W	tungsten
WACAP	Western Airborne Contaminants Assessment Project
WRS	Willamette Research Station (U.S. EPA Analytical Laboratory in Corvallis)
WRST	Wrangell-St. Elias National Park and Preserve
ww	wet weight
XAD	resin (Amberlite XAD) for passive air sampling devices
y	year
yr	yr
Y	yttrium
Yb	ytterbium
YOSE	Yosemite National Park
Zn	zinc
Zr	zirconium