

US EPA ARCHIVE DOCUMENT

Compendium of Tables that Summarize Available Tools

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Table 1. Community-related environmental issues and sources of information

Environmental Issues	Directory of CARE Projects ¹	Pacoima CARE Project ²	Region 5 ³	EPA 1987 Report ⁴	EPA SAB 1990 Report ⁵	EPA 1993 Report ⁶	1999 NATA ⁷	CARE PO Survey ⁸	CARE Program Workbook ⁹	Detroit CARE Project ¹⁰
Accidental Releases - Oil Spills				26 of 26		X		X		
Accidental Releases - Toxics				25 of 26		X		X		X
Agriculture	X								X	
Airport		High								
Air Quality	X						X	X	X	X
Air Quality - Mobile Source Pollution (Highways)	X	High	X				X	X	X	X
Air Quality - Point Source Emissions	X	High						X	X	X
Ambient Air Pollutants					X		X		X	
Arsenic in Soil	X								X	
Asbestos			X						X	X
Asthma	X								X	X
Autobody Shops / Recyclers	X							X		
Brownfields								X		
Burning	X									
Children's Health	X									X
Coal Dust	X									
Consumer Exposure to Chemicals				4 of 26					X	X
Contaminated Sludge				17 of 26						
Creosote								X		
Criteria Air pollutants				22 of 26		X	X		X	
Diesel Exhaust	X	High	X	*	*	*	X	X	X	X
Direct Point Source Discharges to Surface Water				23 of 26						X
Dredging/PCBs	X									
Drinking Water	X			9 of 26	X	X		X	X	X
e. coli at beaches	X									
Environmental Tobacco Smoke		Medium-high	X	4 of 26				X	X	X

Energy Conservation	X									
Fish Consumption	X							X	X	
Ground-water contamination				21 of 26		X		X	X	
Hazardous /Toxic Air Pollutants				6 of 26		X	X			
Hazardous Waste / Pharmaceuticals	X	Medium-Low						X		
Hazardous Waste Sites - Active				13 of 26		X				
Hazardous Waste Sites - Inactive				8 of 26		X				
Hazardous Waste Sites - Abandoned/Superfund						X				
Healthy Homes (Cleaning Products, allergens)	X	Medium						X	X	
Indirect, Point Source Discharges to Surface Water				24 of 26						X
Indoor Pollution					X	X		X	X	X
Indoor Vapor Intrusion		Medium-Low		*	*	*				
Industrial Solid Waste Sites						X				X
Industrial Waste-Water Discharges to Surface Waters						X		X	X	
Integrated Pest Management/Pesticides	X			12 of 26		X				X
Land Use / Redevelopment/ Smart Growth	X							X		X
Lead	X	Medium-High	X	#	#		X	X	X	X
Mercury	X		X				X	X		
Methamphetamine Labs	X									
Mining Waste				18 of 26						
Mold	X	Medium						X		X
Municipal Solid Waste Sites						X				X
Municipal Waste-Water Discharges to Surface Waters						X			X	
New Toxic Chemicals				15 of 26						
Nonhazardous Waste Sites - Industrial				14 of 26						
Nonhazardous Waste Sites - Municipal				16 of 26						
Nonpoint Source Discharge to Surface Water				20 of 26		X			X	X
Odor and Noise Pollution						X				X
Particulate Matter (Fine)			X	*	*	X	X	X	X	X
Pesticide Application				10 of 26						X
Pesticide Residue on Foods				3 of 26				X	X	X
Physical Degradation of Water & Wetlands						X				X

Point - major other than landfills		Low							
Printers	X								
Radiation (other than indoor radon)				11 of 26		X			
Radon		Low	X	1 of 26		X		X	X
School Buses (Retrofits)								X	
Schools/Hazardous Waste	X	Medium-Low							
Soil - unlined sumps		Low							X
Solid Waste Disposal (bulky items, landfills)/ Recycling	X	Medium						X	
Storage Tank Releases				19 of 26		X		X	X
Super-emitting cars		Medium-High							X
UV/ozone depletion			X	7 of 26		X			X
Uranium Mines								X	
Vector Diseases								X	
Water Quality - Wastewater / Sewage	X							X	X
Water Quality - Stormwater Runoff	X	Medium						X	X
Worker Exposure to Chemicals (Industry & Agriculture)				1 of 26	X				
Worker Health	X								

¹List of Environmental/Health Issues for all 2005-2007 CARE Projects. Draft dated October 2007.

²List for 18 Environmental Concerns developed in 2007 by the Pacoima CARE Project Team disseminated by Matthew Lakin. Ranked from high (most concern) to low (least concern).

³"Ten Major Human Health Environmental Risks for Region 5." Prepared for Internal Use by Brad Schultz.

⁴U.S.EPA. "Unfinished Business: A Comparative Assessment of Environmental Problems." Environmental Protection Agency, Washington, DC. Office of Policy, Planning and Evaluation. Ranked from 1(problem of most concern) to 26 (problem of least concern).

⁵"Reducing risk : setting priorities and strategies for environmental protection." Report of Science Advisory Board to William K. Reilly, Admin., U.S.EPA.

⁶U.S.EPA. "Guidebook to comparing risks and setting environmental priorities." September 1993. EPA 230-B-93-003. Office of Policy, Planning and Evaluation.

⁷1999 National-Scale Air Toxics Assessment

⁸CARE Project Officer Survey completed in 2007 by Katie Conlon and Tim Barzyk (U.S.EPA/ORD/NERL).

⁹CARE Workbook (Internal EPA Draft)

¹⁰Issues List (chemical stressors only) developed in 2007 by the Detroit CARE Project Team from resident surveys and focus groups (obtained from Lisa Goldstein - Detroit CARE Project Lead)

Notes: (*) Most health effects of this substance discovered after the report published; (#) Not considered under EPA responsibility at time of report

Table 2. EPA web-based GIS tools that include visual mapping of information contained in EPA databases

Tool & Web Address	Mapping Features	Databases Accessed
EnviroMapper Storefront www.epa.gov/enviro/html/em (includes next 10 tools)	Website that houses the following ten tools listed directly below: WME, Regulated Facilities, EJGAT, Brownfields, NPL, TRI, Surface Water Features, Waste Mgt. Facilities, Pesticide Use Limitations, & Cleanups in My Community	Envirofacts Warehouse (see Table 4; Databases)
Window to my Environment www.epa.gov/enviro/wme	Provides a range of federal, state and local information, including regulated facilities, monitoring sites & watershed information, with an interactive map and links to information	Envirofacts Warehouse
EPA-Regulated Facilities www.epa.gov/enviro/html/em	EPA-regulated facilities with interactive map to display facility name and its multisystem report	Envirofacts Warehouse
Environmental Justice Geographic Assessment Tool (EJGAT) www.epa.gov/compliance/wherelive/ejtool.html	Environmental information such as regulated facilities, air & water monitors, as well as demographic information such as persons per square mile, per capita income & % below poverty line	Envirofacts Warehouse
Brownfields Grant Types & Properties www.epa.gov/enviro/html/em	Interactive map to locate, display and query brownfield grant types	Brownfields Database
Superfund National Priorities List (NPL) Sites www.epa.gov/enviro/html/em	Interactive maps and aerial photography to display and query NPL sites, sites or releases that may require remedial action	National Priorities List
Toxics Release Inventory (TRI) Site Location www.epa.gov/enviro/html/em	Maps facilities listed in the TRI, which houses emissions information organized by facility and/or chemical	Toxics Release Inventory
Surface Water Features www.epa.gov/enviro/html/em	Maps features such as impaired and assessed waters, sewage no discharge zones, nonpoint source projects, water quality stations, and water facilities	Multiple databases that link geographic and water quality information. Utilizes National Hydrography Dataset
Waste Management Facility Siting Tool www.epa.gov/enviro/html/em	Maps of waste management facilities as well as other regulated facilities, such as superfund, toxic releases, water discharge, air emissions, and others	EPA regulated facilities database
Pesticide Use Limitations www.epa.gov/enviro/html/em/index2.html	Displays information about restrictions on using certain pesticides, such as use near source waters	Based on 9th District Court Order
Cleanups in My Community www.epa.gov/enviro/html/em	Displays information on federally regulated cleanups, including their planned or current status, and provides link to multisystems reports of the cleanup sites	Superfund National Priorities List, RCRA Corrective Action, Brownfields Properties
TRI-NATA Explorer www.epa.gov/nata	In development; scheduled for public online availability in Fall 2008. Maps include air toxic concentrations and human health risks (from NATA), as well as emissions information from TRI	National Air Toxics Assessment (NATA) and Toxic Release Inventory (TRI)
TRI Explorer www.epa.gov/triexplorer	Generates tabular data from TRI by facility or chemical for a specified region, including total or chemical-specific air emissions, surface water discharges, & on- or off-site disposals	Toxics Release Inventory

<p>National Priorities List Mapping Tool www.epa.gov/superfund/sites/npl/npl.htm</p>	<p>Interactive maps of NPL sites by EPA Region, which identifies sites or other releases that appear to warrant remedial actions</p>	<p>National Priority Site Listings, CERCLIS</p>
<p>AirNow http://airnow.gov</p>	<p>Website developed by EPA, NOAA, NPS, tribal, state, and local agencies to provide public access to national air quality information including the Air Quality Index (AQI)</p>	<p>Conditions for ozone and particle pollution reported by EPA, NOAA, NPS, news media, tribal, state, and local agencies</p>
<p>Regional Air Impact Modeling Initiative (RAIMI) www.epa.gov/earth1r6/6en/raimi/index.htm</p>	<p>Evaluates potential for health impacts from multiple sources at the community level; utilizes air models and toxicity assessments for multiple sources to model dispersion, exposure and risk, and outputs results to GIS; relatively technical tool compared to others in this table</p>	<p>Health Effects Assessment Summary Tables (HEAST), Integrated risk information system (IRIS), National Toxics Inventory (NTI), Toxic Release Inventory (TRI), Aerometric Information Retrieval System (AIRS), RCRA Information System, TNRCC Point-Source Database (PSDB), New Source Review Permit Files, Facility files and records, permit applications</p>
<p>Internet Geographical Exposure Modeling System (IGEMS) www.epa.gov/oppt/exposure/pubs/geoms.htm</p>	<p>Currently in development. Requires extensive inputs. Multiple models incorporated into a relatively easy-to-use interface compared to stand-alone counterparts, with interactive selection features and GIS outputs; includes fate & transport models for ambient air, surface and ground water, and soil</p>	<p>Models include ISCLT, ISCST, SESOIL, AT123D, PROUTE, TRIWATER and TRIAIR; census data</p>
<p>National Hydrography Dataset Reach Indexing Tool (NHD-RIT) www.epa.gov/owow/monitoring/georef/RIT.htm</p>	<p>Interactive GIS application that allows users to georeference surface water data from the NHD</p>	<p>National Hydrography Dataset</p>
<p>Web-Based Reach Indexing for WATERS www.epa.gov/waters/webrit</p>	<p>Web-based mapping tool that allows users to provide and update location-specific data for a variety of water programs</p>	<p>WATERS (Watershed Assessment, Tracking & Environmental Results) connects several independent databases related to water quality</p>
<p>Surf Your Watershed http://cfpub.epa.gov/surf/locate/index.cfm</p>	<p>Watershed information for the specified geographic area, including citizen-based groups involved in the watershed, impaired waters, geologic information, and counties affected</p>	<p>United States Geological Survey (USGS), Total Maximum Daily Loads Reports</p>

Table 3. EPA guidance documents listed with their intended applications and audiences

Tool & Web Address	Application	Audience
Air Toxics Risk Assessment Reference Library (ATRA) www.epa.gov/ttn/fera/risk_atra_main.html	Presents principles of risk-based assessments for air toxics, how to apply them in different settings, and strategies for reducing risk at a local level	Users interested in conducting air toxic analyses at the facility- and community-scale
Air Quality Criteria for Lead http://oaspub.epa.gov/eims/xmlreport.display?deid=32647&z_chk=2629	Informational resource that assesses health and welfare effects associated with exposure to various concentrations of lead in ambient air; includes chapters on chemistry and physics of lead, atmospheric chemistry and dispersion, and health effects	Researchers involved with work pertaining to the Clean Air Act
Asbestos Project Plan www.epa.gov/asbestos/pubs/asbestosprojectplan.pdf	Framework for coordinated EPA-wide approach to identify, evaluate and reduce human health risks to asbestos exposure	EPA researchers involved with asbestos-related exposure and health assessments
A Citizen's Guide to Radon www.epa.gov/radon/pdfs/citizensguide.pdf	Information and EPA-suggested guidelines for ways to reduce human exposure to radon in homes	Homeowners, local business owners, or anyone potentially exposed to radon
Community Air Screening How-To Manual www.epa.gov/oppt/cahp/pubs/howto.htm	Step-by-step guide to help communities identify sources of outdoor air pollution, conduct risk-based screening analysis to set priorities, and develop recommendations for taking action	Community groups and residents concerned about improving outdoor air quality
Community-Based Environmental Protection: A resource book for protecting ecosystems and communities www.epa.gov/CARE/library/howto.pdf	Guidance and case study examples about the benefits of a healthy ecosystem to a community, and how recreational, economic and other activities affect the quality of the ecosystem	Community groups interested in ecosystem protection and its potential benefits
Evaluating Exposure to Toxic Air Pollutants: A citizen's guide http://epa.gov/ttn/atw/3_90_023.html	Basic information on the processes of exposure assessments related to toxic air pollutants	Community groups interesting in conducted an exposure assessment relating to toxic air pollutants
Framework For Cumulative Risk Assessment http://cfpub.epa.gov/ncea/cfn/recordisplay.cfm?deid=54944	Provides a flexible structure for conducting and evaluating cumulative risk assessment and for addressing scientific issues related to cumulative risk	Users interested in conducting or evaluating cumulative risk assessments
A Guidebook for Explaining Environmental Regulations to Small Businesses www.epa.gov/ttn/atw/explain.pdf	Materials to explain environmental standards and rules to small businesses, and presents guidelines on how to explain technical information in layman's terms	Small business owners
Household Hazardous Waste Management: A manual for one-day community collection programs www.epa.gov/epaoswer/non-hw/househld/hhw/cov_toc.pdf	Designed to help communities plan and operate a successful household hazardous waste collection program	Community leaders and household hazardous waste collection program organizers
Naturally Occurring Asbestos: Approaches for Reducing Exposure www.epa.gov/superfund/health/contaminants/asbestos/nea_factsheet.pdf	Overview of approaches for reducing exposure to naturally occurring asbestos	State and local government officials, project managers and environmental professionals

<p>RCRA In Focus Series (RIF) www.epa.gov/epaoswer/hazwaste/id/infocus/index.htm</p>	<p>Overview of the Resource Conservation and Recovery Act (RCRA) regulations affecting specific industry sources, and a guide to small businesses by relating information focused on recycling and pollution prevention</p>	<p>Business owners and users interested in industry-specific source regulations relating to RCRA</p>
<p>Reducing Air Toxics in Your Community www.epa.gov/ttn/atw/urban/brochurenewvertical_2004.pdf</p>	<p>Guidance on simple ways to reduce air toxics in a community, and information on EPA programs designed to reduce air toxics</p>	<p>Local community groups, local governments, area residents</p>
<p>Risk Assessment Guidance for Superfund (RAGS) www.epa.gov/oswer/riskassessment/ragsa/index.htm</p>	<p>Guidance on the human health evaluation activities conducted during the baseline risk assessment, which can be used to determine whether an additional response is necessary at the site</p>	<p>Users familiar with the Superfund program interested in conducting a baseline risk assessment</p>
<p>Risk Assessment Guidelines http://cfpub.epa.gov/ncea/raf/recordisplay.cfm?deid=55907</p>	<p>Recommends principles and procedures to guide to assess risks from chemicals or other agents in the environment, and inform decision makers and the public about these procedures</p>	<p>EPA scientists, academic community, local governments and public health officials</p>
<p>Superfund Community Involvement Toolkit www.epa.gov/superfund/community/toolkit.htm</p>	<p>Promotes successful community participation in the Superfund process, and provides information, sample documents, and suggestions for implementing community involvement activities</p>	<p>Superfund site teams, scientists, and community groups involved in the Superfund process</p>
<p>Watershed Approach Framework www.epa.gov/owow/watershed/framework/</p>	<p>An explanation of the guiding principles for the EPA watershed approach, as well as their implementation and benefits</p>	<p>Local community groups and governments, and area residents interested in protecting watershed</p>

Table 4. EPA Databases for environmental information sorted by media

Database & Web Address	Content	Updates
Multimedia		
Envirofacts Data Warehouse www.epa.gov/enviro/	Provides access to several EPA databases on environmental activities affecting air, water, and land, including Envirofacts AIRS Facility Subsystem (EF AIRS/AFS), Brownfields Management System (BMS), Biennial Reporting (BR), Comprehensive Environmental Response, Compensation & Liability Information System (CERCLIS), Facility Registry System (FRS), RadNet, Grants Information & Control System (GICS), Information Collection Rule (ICR) data, Locational Reference Tables (LRT), Permit Compliance System (PCS), Resource Conservation and Recovery Act Information (RCRAInfo), Safe Drinking Water Information System (SDWIS), Toxics Release Inventory (TRI)	Each database updated separately
Envirofacts Master Chemical Integrator (EMCI) www.epa.gov/enviro/html/emci	Identifies chemicals in the toxic release inventory (TRI), Aerometric Information Retrieval System (AIRS), Permit Compliance System (PCS), and Resource Conservation and Recovery Act Information (RCRAInfo)	Databases updated monthly to annually
Toxic Release Inventory (TRI) http://www.epa.gov/tri	Waste management activities reported by industry groups and federal facilities	Annually
Integrated Risk Information System (IRIS) www.epa.gov/iris	Toxicity data on chemical substances and pollutants	Annually
ECOTOX www.epa.gov/ecotox	Chemical toxicity data for aquatic life, terrestrial plants, wildlife	N/A
Air Pollutants		
National-Scale Air Toxics Assessment (NATA) www.epa.gov/ttn/atw/nata	Risk Assessment of 177 toxic air pollutants nationwide, includes estimates of ambient concentrations and exposure, as well as risk characterization	1996; 1999
National Emissions Inventory (NEI) (formerly known as National Toxics Inventory NTI) www.epa.gov/ttn/chieff/net	Information about sources that emit hazardous air pollutants and criteria air pollutants and their precursors	Every three years
Air Quality System (AQS) www.epa.gov/air/data	EPA repository of ambient air quality data from 5000 air monitors with data collected by state, local and tribal agencies	Quarterly
AIRS/AFS: Aerometric Information Retrieval System/AIRS Facility Subsystem http://earth1.epa.gov/enviro/html/airs	Computer-based repository for information about air pollution from stationary sources	Monthly
Clean Air Markets Data http://camddataandmaps.epa.gov/gdm	Web-based interface to view unit, facility, emissions, and allowance data collected as part of EPA emissions trading programs	Hourly
CASTNET www.epa.gov/castnet	Atmospheric data on the dry deposition component of total acid deposition, ground-level ozone and other forms of atmospheric pollution; 80 monitoring stations nationwide measure weekly average concentrations of acid deposition, hourly concentrations of ambient ozone levels, and meteorological conditions required for calculating dry deposition rates	Hourly
Radiation		
Environmental Radiation Data (RadNet) www.epa.gov/enviro/html/erams	National radiation data from air, precipitation, drinking water, and milk samples from a national network of more than 200 monitoring stations	N/A

UV Index http://epa.gov/sunwise/uvindex.html	Solar ultraviolet radiation data from the UV Net database (21 monitoring sites nationally)	N/A
Water		
Safe Drinking Water Information System (SDWIS) www.epa.gov/enviro/html/sdwis	Reports submitted by states and regions in conformance with the Safe Drinking Water Act	Quarterly
PCS: Permit Compliance System www.epa.gov/enviro/html/pcs	Information on companies which have been issued permits to discharge waste water into rivers	Monthly
National Pollutant Discharge Elimination System (NPDES) http://cfpub.epa.gov/npdes	Facilities that are point sources of water pollution	
STORET Data Warehouse www.epa.gov/storet	Biological, chemical, and physical measurements of surface and ground water traits from sites monitored by federal, state and local agencies, tribes, volunteer groups, academics, and others	Monthly
Hazardous Waste		
Brownfields Management System (BMS) www.epa.gov/enviro/html/bms	Data on contaminated properties under the EPA Office of Solid Waste Emergency Response Brownfields program	Monthly
RCRAInfo www.epa.gov/enviro/html/rcris	Information about regulated hazardous waste treatment, storage, and disposal facilities, which replaces the National Biennial Hazardous Waste Report (BR) and the Resource Conservation and Recovery Information System (RCRIS)	Monthly extracts
Comprehensive Environmental Response, Compensation & Liability Information System (CIRCLIS Database) www.epa.gov/superfund/sites/cursites	Envirofacts database of Superfund site names, locations, and remedial actions	Monthly
Compliance Data		
Integrated Data for Enforcement Analysis (IDEA) IDEA search engine has two different Web interfaces available to users: OTIS (for government access) and ECHO (for public access)	Environmental performance data on EPA-regulated facilities that maintains copies of EPA air, water, hazardous waste and enforcement source data systems	Monthly
Enforcement & Compliance History Online (ECHO) www.epa-echo.gov/echo	Compliance and violation records for air, water, and hazardous waste facilities	Monthly
Locational Reference Tables (LRT) www.epa.gov/enviro/html/locational/lrt	Locational information for EPA-regulated facilities in Envirofacts	Monthly
Facility Registry System (FRS) www.epa.gov/frs	Internet access to an integrated source of comprehensive (air, water, and waste) environmental information about facilities, sites or places, that includes information from the EPA Central Data Exchange registrations and data management personnel, state master records, and EPA databases	Nightly
Integrated Compliance Information System (ICIS) www.epa.gov/compliance/data/systems/modernization/index.html	Integrated enforcement and compliance information on facilities from all EPA Enforcement Cases and EPA Supplemental Environmental Projects (SEPs) covering all environmental media	Real-time data entry & retrieval
Other		

Environmental Information Management System (EIMS) www.epa.gov/eims	Library of projects, data sets, models, and documents related to the Regional Vulnerability Assessment (ReVA) program	
Grants Information and Control System (GICS) www.epa.gov/enviro/html/gics	Contains information about EPA-awarded grants	Bi-weekly
VendInfo http://es.epa.gov/vendors/	Listings of pollution prevention equipment, products and services from company and technology listings	User-Driven

Table 5. EPA-developed exposure models

Model	Objective	Inputs	Outputs	Availability
Total Risk Integrated Methodology (Exposure-event module)/Air Pollutants Exposure Model (TRIM.Expo-APEX)	Inhalation exposure for census tract or larger area	Hourly air pollution concentrations at location, max daily temp	Air pollutant exposure	http://www.epa.gov/ttnmain1/fera/human_apex.html
Human Exposure Model-3 (HEM-3)	Inhalation exposure for census tract or larger area	Emission rates, emission source configurations and locations	Outdoor air concentration, air pollutant exposure, cancer risk (inhalation), Target Organ Specific Hazard Index (inhalation)	http://www.epa.gov/ttn/fera/hem_download.html
Human Exposure Model – Screening Level Analysis (HEM-Screen)	Screening-level exposure for census block or larger area	Emission rates, emission source locations, pollutant unit risk factors	Outdoor air concentration, air pollutant exposure, cancer risk (inhalation), Target Organ Specific Hazard Index (inhalation)	http://www.epa.gov/ttn/fera/hem_download.html
Hazardous Air Pollutant Exposure Model (HAPEM)	Inhalation exposure for census block or larger area	Annual, seasonal & monthly air pollutant concentrations at census tract or block level	Human exposure concentrations	http://www.epa.gov/ttn/fera/human_hapem.html
Chemical Screening Tool For Exposures & Environmental Releases (ChemSTEER)	Occupational exposure (inhalation and dermal) and environmental releases during industrial and commercial uses	Information on the worker activities and default parameters	Release amount in Kg/day and exposure dose rate in mg/day	http://www.epa.gov/oppt/exposure/pubs/chemsteer.htm
Exposure Analysis Modeling System (EXAMS)	Exposure to synthetic organic chemicals in a water body	Pollutant chemical properties and reaction rates	Surface water concentrations	http://www.epa.gov/ceampub1/swater/exams/exams2980406.htm
Exposure and Fate Assessment Screening Tool (E-FAST)	Consumer products exposure assessment	Media of release, days per year of release	Potential inhalation, dermal, and ingestion dose rates resulting from chemicals released from consumer products	http://www.epa.gov/oppt/exposure/pubs/efast.htm
Multi-Chamber Concentration and Exposure Model (MCCEM)	Inhalation exposure to chemicals released from residential products or materials in rooms within a residence, school or office	Type of residence, zone volumes, interzonal air flow rates, and air exchange rates	Air concentrations and inhalation exposure for one chemical in up to four zones (rooms) of a residence	http://www.epa.gov/oppt/exposure/pubs/mccem.htm
Dietary Exposure Potential Model (DEPM)	Dietary exposure to pesticides and environmental contaminants	Food information; chemicals; population information	Chemical residues found in diet for each cohort group in mg/kg body weight per day	http://www.epa.gov/nerlcww/depm.htm

Stochastic Human Exposure and Dose Simulation Model for Particulate Matter (PM) (SHEDS-PM)	PM exposure assessment that can isolate home, vehicle, building, & outdoor exposure	Population cohort(s); Ambient PM concentrations	Human exposures, intake doses	In development – model has been peer-reviewed – beta version available from Janet Burke (burke.janet@epa.gov)
Stochastic Human Exposure and Dose Simulation Model for Multimedia, Multipathway Chemicals (SHEDS-MM)	Exposure estimates for residential indoors/outdoors & national population estimates for inputs to risk assessments	Population cohort(s); input probability distributions; chemical application scenarios (optional)	Human exposures, intake doses	http://www.epa.gov/scipoly/sap/meetings/2007/081407_mt_g.htm (model located under meeting materials)
Stochastic Human Exposure and Dose Simulation Model for the Wood Preservative Exposure Scenario (SHEDS-Wood)	Chromated Copper Arsenate (CCA) exposure assessment for outdoor playgrounds for an individual & national population estimates	Population cohort(s); input probability distributions	Human exposures, intake doses	http://www.epa.gov/scipoly/sap/meetings/2003/120303_mt_g.htm (model located under meeting materials)
Stochastic Human Exposure and Dose Simulation Model for Air Toxics (AT) (SHEDS-AT)	Human exposure assessment from air toxics that can isolate home, vehicle, building and outdoor exposure	Hourly air concentrations	Human exposures, intake doses	In development – model has been peer-reviewed – beta version available from Janet Burke (burke.janet@epa.gov)

Table 6. Example of screening measurement methods: Example of commercially available test kits (Mention of trade names or commercial products does not constitute endorsement or recommendation of use.)

Analyte(s)	Estimated Price Range	Brand	Source
Indoor Air			
Mold and Bacteria Formaldehyde, Nitrogen Dioxide, Carbon Monoxide and Carbon Dioxide	\$ 69.95 for one; \$109.95 for two	EnviroCheck	http://www.healthgoods.com/Shopping/Home_Test_Kits/EnviroCheck_Indoor_Air_Quality_Test_Kit.asp
Ozone	\$14.95	Eco Badge® Ozone Detector Kit	http://ecobadge.com/Merchant5/merchant.mvc?Screen=SFNT&Store_Code=ecobadge or http://www.negativeiongenerators.com/ozonedetector.html or http://www.airpurifiersbestonline.com/site/1406502/product/Eco%20Badge%20Ozone%20Test%20Kit or http://www.honest-air-online.com/site/948704/product/HA-06-TK-2 or http://www.air-zone.com/detector.html
Toxic black mold, bacteria, and yeast	\$19.95	<i>Enviro-Tester</i>	http://www.envirotester.com/
Mold Spores Bacteria Fungus	\$13.95 per set	Comtech Research	http://www.vgdllc.com/dishes.htm
Water			
Phosphate Chlorine Ammonia Nitrogen Chloride	50 tests, \$71.90 50 tests, \$ 61.20 50 tests, \$48.50 50 for \$39.50	LaMotte	http://www.lamotte.com/pages/common/pdf/instruct/3590-02.pdf or http://www.benmeadows.com/search/LaMotte/9061/ or http://www.benmeadows.com/search/LaMotte/21495/
Bacteria Atrazine & Simazine Nitrate & Nitrite Iron, Chlorine Copper ,Lead	\$ 33.95 to 35.95	PurTest Home Water Analysis Test Kit	http://www.purtest.com/ or http://www.healthgoods.com/Shopping/Home_Test_Kits/PurTest_Home_Water_Analysis_Test_Kit.asp or https://www.freshwatersystems.com/p-455-purtest-complete-home-water-test-kit.aspx?affiliateid=10050&qid=0
Bacteria Free Chlorine Nitrate, Nitrite Total Chlorine Iron Copper Sulfate Chloride Hydrogen Sulfide	\$24.45	ITS Complete Water Analysis Test Kit	http://www.healthgoods.com/Shopping/Home_Test_Kits/Industrial_Test_Systems_Complete_Water_Test_Kit.asp or http://www.testing-kits.com/list-testing-kits.asp?txtsearchParamTxt=alkalinity&txtsearchParamType=ALL&txtsearchParamCat=9&txtsearchParamMan=ALL&txtsearchParamVen=ALL
Bacteria Lead Atrazine & Simazine Nitrate Nitrite Chlorine	\$19.95	Watersafe All- In-One Water Analysis Test Kit	http://www.discovertesting.com/?source=googleCPC&s_cid=299566559&gclid=CPO7pvadppICFQTWsgod7kCRRg or http://www.healthgoods.com/Shopping/Home_Test_Kits/Watersafe_All_In_One_Water_Test_Kit.asp
Lead	\$9.95	Watersafe	http://www.healthgoods.com/Shopping/Home_Test_Kits/Watersafe_Lead_Water_Test_Kit.asp

		Lead Water Analysis Test Kit	Kit.asp
Bacteria Ammonia Nitrate/Nitrite	\$9.45	ITS Water Analysis Test Kit	http://www.healthgoods.com/Shopping/Home_Test_Kits/Industrial_Test_Systems_Bacteria_Nitrate_Nitrite_Water_Test_Kit.asp
Arsenic	\$25.95 for 2 arsenic tests	ITS Arsenic Water Analysis Test Kit	http://www.healthgoods.com/Shopping/Home_Test_Kits/Industrial_Test_Systems_Arsenic_Water_Test_Kit.asp
Drinking/Tap Water			
bacteria, nitrites, and nitrates	\$14.95-\$19.95	PurTest Drinking Water Test Kit	http://www.purtest.com/
Trihalomethanes	\$ 449 for 100 tests	Hach	http://www.hach.com
Bacteria, atrazine & simazine; nitrate, nitrite iron chlorine copper lead	\$29.95*- \$59.95	PurTest Complete Water Test Kit	http://www.purtest.com/ or http://www.air-n-water.com/search.aspx?q=PurTest&Submit1=Search or http://www.healthgoods.com/Shopping/Home_Test_Kits/PurTest_Home_Water_Analysis_Test_Kit.asp
Surfaces			
Mold	5 tests : \$34.95 10 tests: \$44.95 15 tests: \$54.95	MoldCheck™ Mold Test Kits	http://www.moldcheck.com/MoldCheckProveIt.php
Lead	8 tests:\$18.45 16 tests:\$34.95	Lead Check Swab Tests	http://www.leadcheck.com/ or http://www.healthgoods.com/Shopping/Home_Test_Kits/Lead_Paint_Testing.asp
Lead	\$27.95- 29.95, add \$4.50 for shipping.	Lead Detective Test	http://www.theleaddetective.com/ or http://www.healthgoods.com/Shopping/Home_Test_Kits/Lead_Paint_Testing.asp

Table 7. Example of quantitative screening methods: Instrument or laboratory analysis (Mention of trade names or commercial products does not constitute endorsement or recommendation of use)

Analyte(s)	Estimated Price Range	Brand	Source
Indoor Air			
Ozone	\$ 299- 329.99 + shipping; Monitor for ambient ozone detection. 0.02-0.14 PPM range. LED Readout.	Ambient Ozone Sensor	http://www.ozonesupplies.com/EZ-1X.html?gclid=CJXHwqr9pZICFR_bQAod-zloNQ or http://www.air-zone.com/detector.html
Mold	Test & lab fees price: 5 tests: \$34.95, 10 tests: \$44.95, 15 tests: \$54.95	MoldCheck™ Mold Test Kits	http://www.exit15.com/mold-check-airborne-sampling-kit-wlab-fees-p-1017.html
20 types of mold spores, pollen and dust	2 sets & lab fees- \$149.00	Air Check Home Mold Testing Kit	http://www.homemoldtestkit.com/store/index.php?main_page=product_info&products_id=5
mold and mildew	Test & lab fees: \$ 99.95	Mold screening kit	http://www.moldscreeningkit.com/moldkit.php
Allergens Fungi Formaldehyde	\$375.00 for the evalu-aire® Screen Test Kit	evalu-aire® Test Kits	http://www.pureaircontrols.com/ieqform.html or http://www.airpurifiersforhome.com/products/test_kits.htm
Radon	One test: \$ 9.95 3 tests: \$ 24.99 Includes lab fees	AirCheck test kits	https://securechek.com/DIY/index.html
Mold Spores Test Dander Test Carcinogenic Fibers Pollen Test Bacteria Test	Fee includes lab analysis for each separate test (add ons). Basic Home Quality Kit (dust & dust mites): \$30 Add-mold:\$45 Add-dander: \$45 Add-carcinogenic fibers (fiberglass, asbestos): \$33 Add-pollen: \$ 35 Add-bacteria: \$99	Green Nest Home Air Quality Tests	http://www.greennest.com/air-quality-test-kit.html
Radon	Test & lab fee: \$ 13.95	AccuStar Short-Term	http://www.accustarlabs.com/

		Activated Charcoal (AC) Radon in Air Test Kit	
Water			
Ammonia Nitrogen, Calcium, Magnesium, Free CarbonDioxide, Chloride,ChlorineChromium(Chromate), Copper, Cyanide, Iron, Nitrate, Phosphorus (Phosphate), Sulfide	Several Instrumentation options ranging from \$164.35-\$234.50 and Model AM-22 Water Pollution Field Detection Kit	LaMotte	http://www.lamotte.com/pages/common/pdf/instruct/5905-01.pdf or http://www.benmeadows.com/search/LaMotte/21053/
	\$516		
Option 1: total Coliform and E.Coli bacteria, 17 heavy metals, 5 inorganic chemicals, 5 physical factors, 4 trihalomethanes, and 44 volatile organic chemicals Pesticide Option includes all of the standard tests, plus 20 additional organic chemicals for pesticides, herbicides and PCB's	Watercheck Test Price: \$122.95 Watercheck with Pesticide Option Test -Price: \$152.95 ; (Lab analysis included)	WaterCheck Water Quality Tests	http://www.ntllabs.com/businesses/watertreatment/products.html or http://www.watercheck.biz/ or http://www.healthgoods.com/Shopping/Home_Test_Kits/Watercheck_Water_Quality_Test_Kit.asp
Radon	\$27.95 (lab included)	AccuStar Radon in Water Test	http://www.accustarlabs.com/ or http://www.healthgoods.com/Shopping/Home_Test_Kits/Accustar_Radon_Gas_Water_Test_Kit.asp
Drinking water/Tap water			
Radon	\$27.95 (lab included)	AccuStar Radon in Water Test	http://www.accustarlabs.com/
Trihalomethanes	\$3012 for portable spectrophotometer	Hach	http://www.hach.com
Free & total chlorine	\$352 pocket colorimeter	Hach	http://www.hach.com
Surfaces			

mold	<p>Mold testing lab Price depends on sample & sampling media- Tape= \$50; Air= \$60, Bulk=\$100.00, e.g. 4 sq.in. of drywall, 1 sq.ft. of mold-suspect fiberglass</p>	InspectApedia	HTTP://WWW.INSPECT-NY.COM/SICKHOUSE/BULKSAMP.HTM
Asbestos	<p>\$20- \$37.99, Lab Fees & Shipping Included</p>	<p>Professional Asbestos Testing kit</p>	<p>http://prolabinc.com/instructions/asbestos.html or http://www.kaboodle.com/reviews/professional-asbestos-test-kit-as108</p>

Table 8. EPA and other federal measurement methods tools

Source	Description	Web address
EPA Information		
EPA Method Collections	Forum of Environmental Measurements Provides contact information & methods related to: Air and Radiation; Solid Waste and Emergency Response; Sampling Methods; Water; Prevention, Pesticides, and Toxic Substances; Research and Development; Analytical and Sampling Method Sources	http://www.epa.gov/OSA/fem/methcollectns.htm
Manual of Manuals	Quick cross-reference of EPA methods by analyte	http://www.epa.gov/nerlcwww/methmans.html
EPA Technology Transfer Network, Ambient Monitoring Technology Information Center	Monitoring Programs, Monitoring methods, Documents and articles, Trends & Non-attainment, Regulations	http://www.epa.gov/ttnamti/
EPA Emissions Measurement Center Air	Emission Measurement Center (EMC) provides searchable information on test methods for measuring pollutants from smokestacks and other industrial sources. This site compiles the test methods available for emission measurement, and EMC staff provides technical assistance in the use and application of the methods.	http://www.epa.gov/ttn/emc/
Air EPA Technology Transfer Network: Ambient Monitoring Technology Information Center	Operated by EPA's Ambient Air Monitoring Group (AAMG). Information on ambient air quality monitoring programs, monitoring methods, relevant documents, air quality trends and nonattainment areas, and federal regulations related to ambient air quality monitoring	http://www.epa.gov/ttn/amtic/
EPA Clean Water Act Analytical Test Methods	Analytical methods that are approved not promulgated methods, alternative methods, updated methods.	http://www.epa.gov/waterscience/methods/
Safe Drinking Water Act Analytical Methods and Laboratory Certification	Information on approved analytical methods, drinking water programs and laboratory certification.	http://www.epa.gov/safewater/methods/
EPA Microbiology Home page	EPA methods and information related to bacteria, viruses and protozoans.	http://www.epa.gov/nerlcwww/
ORD methods for water	Drinking and Marine water methods	http://www.epa.gov/nerlcwww/ordmeth.htm#marine

Whole Effluent Toxicity (WET) Page	Methods for measuring acute toxicity and short term chronic toxicity to freshwater and marine organisms, guidance documents and regulatory actions	http://www.epa.gov/waterscience/methods/wet/
Analytical Methods Developed by the Office of Ground Water and Drinking Water	Chemical methods for the determination of organic chemicals in drinking water.	http://www.epa.gov/safewater/methods/analyticalmethods_ogwdw.html
EPA Office of Solid Waste Test Methods	Information and guidance on analytical chemistry, testing methodologies, environmental sampling and monitoring, and quality assurance in support RCRA. SW-846 methods.	http://www.epa.gov/epaoswer/hazwaste/test/
New Test Methods On-line	new SW-846 methods are intended to be guidance methods which contain general information on how to perform an analytical procedure or technique which a laboratory can use as a basic starting point for generating its own detailed Standard Operating Procedure (SOP)	http://www.epa.gov/epaoswer/hazwaste/test/new-meth.htm
Superfund Analytical Services / Contract Laboratory Program	Provides information on EPA's Superfund Analytical Services/Contract Laboratory Program (CLP). Provides guidance, analyses, cost for the analyses, tools, and contacts.	http://www.epa.gov/oerrpage/superfund/programs/clp/index.htm
EPA Corrective Action Guidance Page	Guidance related to RCRA (e.g. regulated hazardous waste). Provides monitoring methods for groundwater & soil screening	http://www.epa.gov/epaoswer/hazwaste/ca/guidance.htm
Other Federal Information		
National Environmental Methods Index (NEMI) (includes EPA, USGS, NOAA and other partners)	Searchable methods database for regulatory and non-regulatory monitoring of water, sediment, air and tissues. User can compare the capabilities and relative costs of the methods.	http://www.nemi.gov/
NIOSH Manual of Analytical Methods (NMAM)	Searchable database provides methods for sampling and analysis of contaminants in workplace air, and blood and urine of exposed workers. Can search by chemical, CAS number, or method number	http://www.cdc.gov/niosh/nmam/
Agency for Toxic Substances and Disease Registry (ASTDR)	Toxicological Profiles of specific chemicals which includes a link to the analytical method.	http://www.atsdr.cdc.gov/toxpro2.html

US Department of
Labor, Occupational
Safety & Health
Administration

Searchable database for Sampling and
Analytical Methods by analyte

<http://www.osha.gov/dts/sltc/methods/toc.html>