

Alaska Tribal Environmental Justice on Solid Waste Guidance Toolbox

“Our Voice Counts and Matters”



Zender Environmental Health & Research Group

www.zendergroup.org

A project funded by US Environmental Protection Agency Grant #JSG-11-R10-15-ZEHR

Inside the “Our Voice Counts and Matters” Toolbox

The *Our Voice Counts and Matters* environmental justice guidance toolbox provides supplemental resources and information for Alaskan Tribal Communities and their partners for the incorporation and implementation of environmental justice in their efforts to address solid waste in rural Alaska.

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I. What is Environmental Justice?



"Environmental Justice for All"

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons across this Nation. It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.

The concept of environmental justice started in the 1980s when people who lived in poorer areas voiced out about what they believe to be environmental discrimination. It seemed that environmental regulations were not benefiting these areas as much as the richer areas. This was due to a lack of political and economic power plus a lack of awareness of environmental issues.

The origins of the environmental justice movement can be traced back to Shocco Township, North Carolina. In 1982, the state selected this town to have a landfill for containing PCB-contaminated soil. Shocco Township has the third lowest per-capita income in the state, and is 69 percent non-white. It was at this incident that advocacy groups began claiming environmental racism, and the environmental justice movement was born.

Since then, there has been legislation passed that *mandates* efforts to try to keep citizens informed. In 1986, the Community Right-to-Know Act was passed, which required industry to disclose information to the public on what chemicals are stored, used, and released in the area. In 1992, the Bush Administration established the Office of Environmental Justice within the EPA.

In 1994, the Clinton Administration directed federal agencies to consider how their activities would negatively impact the environment of minority communities, including Tribal Communities.

ALASKA TRIBES ATTEND ENVIRONMENTAL JUSTICE SESSIONS

At the 2011 Alaska Forum on the Environment (AFE) two environmental justice sessions were held. In the first session, the Federal Interagency Working Group on Environmental Justice (IWG EJ) presented their current activities on coordination efforts on environmental justice and what strategies they are working on to address environmental justice issues in Tribal communities and other low-income minority communities across the nation. Specifically, how they will solicit increased public and Tribal input into their action plan(s). The multiple federal agency presence at the AFE was one step towards meeting this goal; a goal which was set at the first ever [White House Forum on Environmental Justice](#) held this past December in Washington D.C.



The second session was set up for the IWG EJ to listen to the environmental concerns from Tribal communities in Alaska. Elders, Tribal Leaders and Tribal Environmental Staff did take this opportunity to voice their environmental justice concerns, issues and recommendations. Also present at this session was Winona Wilson of the EPA who was tasked to bring Alaska's concerns directly to Lisa Jackson, the EPA Administrator.

ALASKA TRIBES SPEAK UP FOR ENVIRONMENTAL JUSTICE ON 4 MAJOR ISSUES

1. Children's Health:

- ☉ Children are more vulnerable to environmental exposures, as they are still developing.
- ☉ Children experience more frequent exposure to environmental contaminants.
- ☉ Need to consider social and economic impacts on individual families.



Young people walking on beach in Hooper Bay.
We need to protect our beaches and waterways for all generations to come...doing this *is* Environmental Justice.

2. Subsistence:



- ✿ Alaska Tribes need to be at the table where decisions are made in regards to subsistence.
- ✿ Need contaminant source identification as it relates to potential health effects.
- ✿ Need to coordinate better on consultation efforts.
- ✿ System for monitoring fish to better identify and resolve location of problem.

- ✿ Accept traditional knowledge as a more valid source of information

3. Contaminants:

- 🌍 Need technical assistance to understand documents/data.
- 🌍 Communication should be translated into action/accountability.
- 🌍 Bring people to the table early and often.
- 🌍 Need better diagnosis and treatment for environmental health effects (regardless of the source of contamination).

Clean up known contamination with consideration of health and community welfare (cultural traditions) in assessing and cleaning up the site.



Hazardous wastes should be covered and stored off the ground. Showing a funding agency that you have to store your oil and antifreeze drums on the school playground could be a good way to receive funding for a hazardous waste storage shed.

4. Resource Extraction:

- ✦ Clean water - consider that water also provides a spawning habitat
- ✦ Resource extraction threatens traditions.



- ✦ Need to consider catastrophic effects on subsistence, culture, and way of life.
- ✦ If development occurs, Tribes need to be in a position to conduct monitoring.

RECOMMENDATIONS MADE BY AK TRIBES TO MEET THESE ISSUES:

- ✦ Environmental studies/testing are needed, and these studies should incorporate traditional knowledge, be culturally relevant, focus on vulnerable populations and age groups, and specifically explore health effects as they relate to contaminants, subsistence foods, and climate change.
- ✦ For new developments and resource extraction, environmental and public health baseline studies are needed, as well as ongoing human and environmental health surveillance.
- ✦ When creating policies, programs, or research studies, consider social, economic, human health, and cultural factors and, in particular, cumulative impacts.
- ✦ Communities need to see action as a result of their participation; meaningful involvement should be followed by tangible government accountability.
- ✦ Capacity building resources are needed. For example, data needs to be made accessible at local level, resources should be allocated to Tribes to do their own monitoring, and technical assistance should be provided to communities to understand and use data, tools, and policies.
- ✦ Ensure that all communities have clean air, water, food, and adequate sanitation systems.



- ✦ Protect subsistence food systems by including indigenous communities in decision-making and considering the potential disproportionate impacts of policies, programs, and developments on Alaska Native Villages.
- ✦ Government agencies need to better streamline their processes and coordinate services internally and externally.

II. Alaska Tribal Environmental Justice Case Studies

2009 Organization: Inupiat Community of the Arctic Slope (ICAS) (Barrow, AK)

Ensuring that local people have a voice in the decision making on oil and gas development projects in their village and the offshore area adjacent to it, upon which they depend. To be achieved by identifying and documenting subsistence practices of local indigenous people, identifying the marine resources upon which they depend, and incorporating that information into the development planning process, at a stage early enough that the information can be effectively utilized to avoid detrimental impacts.



2008 Organization: Alaska Community Action for Toxics (Anchorage, AK)

ACAT research team partnering with the community to sample the water of the Suqi River to test for contaminants to identify the existing toxics to be remediated. ACAT will work together with community and partners to plan the restoration of the Suqi River.

2002 Empowering Alaska Native Communities of Cook Inlet to Address Oil and Gas Impacts on Cook Inlet's Natural Resources

Enhancing communication strategies to address expanding oil and gas development, as well as the training necessary to understand all the issues associated with industrial development in the Lower Inlet.

Goals:

- ✦ Improve communications among native peoples and communities on oil and gas issues.
- ✦ Enhance native community capacity to identify and address environmental justice issues related to oil and gas development.
- ✦ Promote and enhance the native communities' understanding of information needed to address oil and gas issues.

Methods:

- ✦ Developed and implemented a strategic communications plan to improve the frequency and substance of oil and gas discussions.
- ✦ Facilitated meetings, teleconferences, and Internet listservs.
- ✦ Identified liaisons from each tribe to actively communicate oil and gas issues to their respective Village Councils and to participate in meetings, teleconferences, and training.
- ✦ Hosted information clinics using lawyers, marine scientists, engineers, and other tribal and non-tribal experts to train the tribal liaisons in the complexities of oil and gas development.

Products/Results:

Seven Cook Inlet tribes participated in implementing this environmental justice grant. The team developed a strategic communications plan that included setting up a toll-free teleconference line, establishing a regular teleconference line, establishing a regular teleconference meeting schedule, holding monthly meetings, and setting up and managing a Tribal Coalition for Cook Inlet e-mail listserv. Each tribe identified two liaisons to implement the strategic communications plan. The liaisons also participated in two information sessions and researched additional funding to continue to build tribal capacity to enhance their awareness of oil and gas issues in Cook Inlet.

Successes/Strengths:

As a result of this project, seven of the 10 Cook Inlet tribes participated in a newly developed coalition, "Tribal Coalition for Cook Inlet." This coalition began the collaborative effort to address issues of concern regarding oil and gas development in Cook Inlet. Project Coordinator Eleanor McMullen Port Graham Village Council P.O. Box 5510 Port Graham, AK 99603

1999 Emerging tools for local problem (Mekoryuk, AK)

Target Audience: Native villages and communities relying upon hunting and subsistence fishing in the Yup'ik coastal area along the Bering Sea.

Purpose:

To bring Yup'ik coastal communities together to discuss issues and document observations concerning changes in the regional environment that affect the Yup'ik communities' food sources. This information would then be used to positively impact federal, state, and private efforts affecting the Yup'ik communities.

Goals:

- ✦ To facilitate communication and information exchange, and create partnerships among stakeholders.
- ✦ To build community capacity and ability to identify local environmental justice problems.
- ✦ To involve the community in the design and implementation of activities to address these concerns.

Methods:

- ✦ Develop a workshop that will bring all of the Yup'ik coastal communities together to unite and discuss observations and any concerns they may have.
- ✦ Collect observations and concerns from the coastal communities along the Bering Sea in order to create a workbook that will include all of the observations and concerns.

Products/Results:

A workbook was distributed to the participants of the workshop to gather information. The results and the observations from the villages were compiled and documented.

Success/Strengths:

The participants facilitating communication and information exchanges accomplished the program goals. Furthermore the workbook used to collect information was put into documentation and will be used to actively participate in the research that will be conducted in the Bering Sea in the future.

The Metlakatla Indian Community Master Plan

Purpose:

To clean up contamination of the Annette Island Indian Reserve in southeastern Alaska and plan redevelopment to promote economic growth through tourism and commercial fishing. Federal agencies made a commitment to work in partnership with the Metlakatla to address contamination issues that have resulted from the construction and operation of defense facilities over the past five decades. Extensive soil contamination has occurred around fuel storage sites. In addition, lead, asbestos and oils containing PCBs have been found. Especially pertinent to attempts to properly address the issues of Native Americans and Alaska Natives are issues such as the proper implementation of federal trust responsibilities and the building of tribal capacity to manage and conduct environmental programs. The Metlakatla has also been designated a national Brownfields Showcase Community.

Environmental justice: "embraces the principle that all people and communities are entitled to equal protection of our environment, health, employment, housing, transportation, and civil right laws"
(Robert Bullard, Environmental Justice Law Center, Clark Atlanta)



Source: Alaska Community Action on Toxics <http://www.akaction.org/>

III. Solid Waste Facilities in Rural Alaska

Alaska has 242 municipal landfills of which 174 serve small, rural communities. Municipal landfills are classified based on the average daily intake of waste, and include Class I (greater than 20 tons/day), Class II (five to 20 tons/day), and Class III (less than five tons/day) landfills. In FY 2008, the total number of Alaska municipal landfills included seven Class I, 13 Class II, and 222 Class III landfills.

All municipal landfills are required to have either a permit or other State of Alaska Department of Environmental Conservation (DEC) authorization to ensure that the landfill's design and operational practices comply with regulatory standards. Compliance with the standards is what makes the difference between an approved landfill and an open dump (DEC, 2010).

A Class III landfill is a design standard unique only to the State of Alaska (allowed by federal exemption) that classifies landfills according to the Alaska solid waste regulations as follows: "A Class III landfill is a landfill that is not connected by road to a Class I landfill or, if connected by road, is located more than 50 miles from a Class I landfill and that accepts, for disposal, less than five tons daily of municipal solid waste, based on annual average." (DEC, 2002).

All Class I and II landfills in Alaska have permits to operate. However, only 25% of Class III landfills are currently permitted. The DEC is working to increase the rate of compliance for Class III landfills by simplifying the permitting process, which can be difficult for small communities with limited resources (State of Alaska, 2010).

Currently 167 rural communities have unpermitted Class III landfills, commonly known as "open dumps".

The communities with permitted Class III landfills meet the minimal realistic standards pursuant to the intent of the federal Resource Conservation and Recovery Act (RCRA). The RCRA banned all open dumping of waste, encouraged source reduction and recycling, and promoted the safe disposal of municipal waste. Currently, there are insufficient funds to close open dumps that may present health and environmental risks (Colt, 2003).

An open dump can be defined as a solid waste site that is not maintained, is unlined, contains uncovered wastes, and has no boundaries (Gilbreath, Kass, 2006 p. 134). In many rural Alaskan communities, because of a lack of resources, a lack of sufficient capacity, and a complicated permitting process, open dump sites are the only option for the disposal of household, commercial, and construction waste. A majority of rural communities do not have trash collection services. Community residents walk or use all-terrain vehicles (ATV's) or snow machines to transport their trash to the open dump site, commonly referred to as "self-haul."

Virtually every material generated in, or brought to, the villages including hazardous waste ends up in open dumps sites, including riverbanks. These open dumps create a public health situation that increases human health risks of contamination from hazardous materials and pathogens from human excreta.

Constituents of hazardous waste such as arsenic, barium, chromium, lead, and diesel fuel contaminants appear to be common at open dumps in Alaska. Most of the lead likely comes from batteries. The diesel fuel and used oil most likely come from leaking scrapped snow machines and other vehicles (Central Council of Tlingit and Haida Indian Tribes of Alaska, 2001).

The exposure to pathogens from human excreta is due to the fact some communities lack water and sewer systems and use the open dumps to discard their "honeybuckets" (Sarcone, 2008).



IV. Immediate Health Effects Due to Poor Solid Waste Conditions

With the lack of SWM services, most rural village households are forced to visit their dumps to discard their trash. Yet visiting the dump is fraught with health risks:

- ✦ In the health study, residents who regularly visit the dump were 2 to 3.7 times more likely to experience faintness, fever, vomiting, stomach pain, ear and eye irritation, headache and numbness.
- ✦ At least 20 percent of villages have had dump site accidents in the past 5 years.
- ✦ In approximately 55% of the villages, bears (often grizzlies) frequent the dump.



You don't need to visit the dump to suffer ill effects:

- ✦ In the health study, people living closer than one mile to their dump were 19 times more likely to have eye irritation, and 3 to 4 times more likely to have headaches or faintness.
- ✦ People who were bothered by dump odors or smoke were over 6 times more likely to experience faintness, and over 5 times more likely to have ear irritation.
- ✦ Yet, a full 72% of dumps are within about one mile of homes. At least 30% are within one quarter mile of homes.
- ✦ Because of unrestricted access and proximity to dumps, pet dogs often wander through, and then can transfer disease pathogens through interaction with their owners.

Source: Zender, 2003

http://www.zendergroup.org/docs/swm_health_risk_stats.pdf

An even greater threat to resident health may be burning unseparated wastes at home:

- ✦ To avoid visiting the dump, residents in at least 66% of villages burn wastes just outside of homes. With no or few roads, homes generally are set very close together in native villages, so that breathing the smoke is unavoidable.
- ✦ People who burned their own trash were 5 to 17 times more likely to feel faint, and almost 5 to 10 times more likely to develop numbness, with the risks increasing the more often people burned.
- ✦ Home burners were almost 30 times more likely than other people to have developed rashes. Other symptoms that were found to be significantly higher include fever, sore throat, and cough.

Many village residents have a high exposure to toxic smoke because unseparated wastes are burned at their dump.

- ✦ Dump smoke commonly contains dioxins, carbon monoxide, nitrous oxide, and carbon dioxide. These agents have been associated with respiratory complaints, dizziness, and headaches in the short term, and cancer and heart disease in the long-term.
- ✦ Burn boxes or dump fires are set often, in up to 73% of the villages.
- ✦ Over 61% of residents in the health study were regularly bothered by dump odors or smoke, during the course of everyday activities.



Source: Zender, 2003

http://www.zendergroup.org/docs/swm_health_risk_stats.pdf

V. Environmental Justice Community Involvement Strategies

Key Factors to Community Involvement:

- Education, raising community awareness
- Developing an outreach strategy
- Forming a working group (or community)
- Gaining community buy-in
- Building partnerships, connecting to resources



Some goals of successful outreach plan:

- ⊕ Identify your target groups
- ⊕ Find ways to create partnerships, volunteer opportunities, working groups, and collaborative
- ⊕ Continue to assess community needs and resources
- ⊕ Analyze problems and goals
- ⊕ Develop a framework or model of change

Informing and Educating your community

Education → *Awareness* → *Interest* → *Participation*

- Chose areas of concern to raise awareness
- Prioritize these concerns
- Use visuals wherever possible
- Newsletters, power point presentations, bulletins, and posters are all good outreach actions

For further details to develop a successful outreach plan for your community visit: <http://www.zendergroup.org/community.html> and the PowerPoint Presentation titled: "Community Involvement for Integrated Solid Waste Management Planning"



Example for Group Discussion Questions

<p>1. What does the word "health" mean to you? When answering this question think about the broad sense of health</p>	<p>Answer:</p>
<p>2. What does the word "environment" mean to you? When answering this question think about your surroundings</p>	<p>Answer:</p>
<p>3. What does the words "environmental health" mean to you When answering this question think about how the environment affects your community's health.</p>	<p>Answer:</p>
<p>4. What are the major environmental health issues affecting your community? When answering this question here are several ideas on the types of things to consider:</p> <ul style="list-style-type: none"> a. Issues that may affect what is taken into our bodies such as food, water, air b. Issues that we are exposed to because of where we live, work, or play. c. Issues and areas in the community that may lead to accidents, injuries, illness, disease, or death. d. Issues that affect the quality of life of the community such as noise, smells, trash, etc. 	<p>List the issues affecting your community here.</p> <ol style="list-style-type: none"> 1. 2. 3. 4. 5.
<p>5. Which of the issues listed above needs the most attention? When answering this question here are several things to consider.</p> <ul style="list-style-type: none"> a. The number of people who are being affected by the issues. b. How life threatening is the issue? c. What are the consequences if the problem is not addressed? 	<p>Rank the three most important issues here.</p> <ol style="list-style-type: none"> 1. 2. 3.
<p>6. Is there anything that can be done to address these issues? When answering this question here are several things to consider.</p> <ul style="list-style-type: none"> a. Do these issues involve people's behaviors that could be changed? b. Are there groups that are already working on these types of issues that need additional support? c. What can the community do to help address the issue? d. Partnering with federal/state/other entities? 	<p>List possible strategies and actions that could help to address these issues.</p> <ol style="list-style-type: none"> 1. 2. 3. 4.

Source: Community Environmental Health Assessment Toolbox for New Mexico, 2004

Example Community Environmental Health Concerns - Issues Check List

This survey is part of an effort to develop an environmental health action plan for our community. Your responses on this survey will play a major role in determining which environmental problems are given top priority in the next several years.

1. Which of the following environmental health issues do believe should receive priority attention in your community? Please check up to ten (10).

Air quality indoor/outdoor

- Industry air pollution
- Trash/wood burning
- Dust (roads)
- Pollen
- Cigarettes
- Mold
- Bad smells
- Automobile exhaust

Housing

- Heating
- Cooling
- Plumbing
- Weatherization
- Electrical
- Sewage treatment

Water quality

drinking/ground/surface

- Industry water pollution
- Sewage disposal (septic Systems, honeybucket)
- Chemical spills
- Water treatment
- Gas storage tank leakage
- Natural sources (Fluoride, Arsenic, Salt, etc.)
- Motor vehicle oil

Natural issues

- Cold exposure
- Rodents
- Wind storms
- Flooding
- Fire
- Insects (mosquitoes, flies, bees)

Waste disposal

- Sewage
- Solid waste
- Access to facility

Hazardous materials

- Handling
- Disposal
- Storage

Food safety

- Restaurants
- At home
- Wildlife - fish/game

Other

- Pesticide usage
- Worker safety/health
- Other_____

2. Using the above list please circle the three most important issues that you think need attention.

3. Are there any environmental conditions in your immediate community that you feel may be contributing to any family illness? (Please circle yes or no)

If yes, what? _____

4. Is there anything at your work place that you feel may be harming your health? (Please circle yes or no)

If yes, what? _____

5. Do you feel your home is environmentally safe to live in? (Please circle yes or no)

If no, why not? _____ Source: Community

Environmental Health Assessment Toolbox for New Mexico, 2004

Example of Comprehensive Environmental Health Checklist for Small Rural Communities

Indicate which categories you think are the most important environmental health problems in your community by putting '1' for very important problem, '2' for somewhat important problem, then '3' for small problem.

Then put one or more numbers under each of the categories indicating what type of problem. Note: Only mark numbers for categories for which you feel there is a problem. You do not have to mark each one.

Air Quality & Odor

- Odors from garbage
- Dust (ambient, roads)
- Smoke (local burning)
- Pollen or mold
- Allergies & asthma
- Motor vehicle emissions
- Sewage odors

Water Quality

- Water quality of wells
- Municipal system water quality
- Potential contaminants
- Dumping of contaminants in
Rivers, lakes & on-the-ground
- Traditional water sources

Household Hazards & Safety

- House integrity (air/water leaks)
- Accident & fire hazards
- Electrical hazards
- Poorly stored chemicals, solvents
- Cleanliness & hygiene (roaches)
- In-home smoking/2- hand smoke
- Mold, dust mites,
- Allergies & asthma
- Food preparation/safety
- In-home firearms

Source: Community Environmental Health Assessment
Toolbox for New Mexico, 2004

Neighborhood Safety Hazards

- Motor noise
- Lack of street lighting
- Aggressive dogs, rabies
- Broken board walks
- Electric transmission line hazards
- Violence, crime & gunplay

Industrial Hazards

- Strong odors, eye irritants
- Industrial spills, explosions/fires
- Gas line ruptures & emissions
- Hazardous materials storage, loading/unloading
& transport
- Brownfields, abandoned mines

Natural Hazards

- Frostbite & overexposure
- Dehydration
- Floods
- Land & debris slides
- Storms, wind & rain damage
- Wildlife rabies
- Insects
- Mosquitoes, flies

Roads & harbors & walkways

- Speeding traffic
- Unskilled & drunk drivers
- Dangerous bridges & intersections
- Lack of boardwalks
- Broken boardwalks
- Unsafe boat harbor

One-Stop Internet Browsing Cafe



Environmental Justice in Tribal Communities these websites are a good place to start:

- Ⓢ Alaska Community Action on Toxics <http://www.akaction.org/>
- Ⓢ Tribal Court Clearinghouse: Environmental Resources <http://tribal-institute.org/lists/envIRON.htm>
- Ⓢ Federal Interagency Working Group on Environmental Justice <http://www.epa.gov/compliance/environmentaljustice/interagency/index.html>
- Ⓢ EPA Office of Environmental Justice <http://www.epa.gov/environmentaljustice/>
- Ⓢ American Indian Policy Center: Environmental Justice <http://www.airpi.org/projects/envrjst.html>
- Ⓢ Haskell Indian University: Environmental Justice Research Center <http://www.engg.ksu.edu/CHSR/outreach/tosnac/resources.html>
- Ⓢ EPA's AIEO EPA's American Indian Environmental Office <http://www.epa.gov/indian/>
- Ⓢ Community-based Federal Environmental Justice Resource Guide <http://www.epa.gov/environmentaljustice/resources/publications/interagency/resource-guide.pdf>
- Ⓢ Department of Interior ENVIRONMENTAL JUSTICE STRATEGIC PLAN 2012 - 2017 http://www.doi.gov/oepc/Revised_Clean_Version_102111.pdf
- Ⓢ HUD Environmental Justice website <http://www.hud.gov/offices/cpd/environment/library/subjects/justice/>
- Ⓢ EPA's Environmental Justice Collaborative Problem-Solving Model <http://www.epa.gov/compliance/environmentaljustice/resources/publications/grants/cps-manual-12-27-06.pdf>

Executive Orders and Environmental Laws that relate to Environmental Justice:

Executive Orders

- Ⓢ 1994 Executive Order No.12898 Environmental Justice <http://www.epa.gov/fedrgstr/eo/eo12898.htm>

- ② 1996 Executive Order No.13007 Protection of Indian Sacred Sites
<http://www.achp.gov/EO13007.html>
- ② 2000 Executive Order No. 13175 Government-to-Government Relations
<http://www.nepa.gov/nepa/regs/eos/eo13175.html>

Civil Rights Authorities

- ② Title VI of the Civil Rights Act of 1964
<http://www.epa.gov/civilrights/t6lawrq.htm>
- ② 1966 FOIA Freedom of Information Act
<http://www.epa.gov/lawsregs/laws/foia.html>
- ② 1976 Sunshine Act Government in Sunshine Act
http://en.wikipedia.org/wiki/Government_in_the_Sunshine_Act

Environmental Authorities

- ② 1946 Pesticides/FIFRA Federal Insecticide, Fungicide and Rodenticide Act
<http://www.epa.gov/pesticides/regulating/laws.htm>
- ② 1969 NEPA National Environmental Policy Act
<http://www.nepa.gov/nepa/regs/nepa/nepaeqia.htm>
- ② 1972 CWA Clean Water Act <http://www.epa.gov/lawsregs/laws/cwa.html>
- ② 1972 Ocean Dumping Marine Protection, Research and Sanctuaries Act
<http://www.epa.gov/lawsregs/laws/mprsa.html>
- ② 1973 Endangered Species Act <http://www.epa.gov/lawsregs/laws/esa.html>
- ② 1974 Safe Drinking Water Act
<http://www.epa.gov/safewater/sdwa/index.html>
- ② 1976 TSCA The Toxic Substances Control
<http://www.epa.gov/lawsregs/laws/tsca.html>
- ② 1976 Solid Waste/RCRA Resource Conservation and Recovery Act
<http://www.epa.gov/lawsregs/laws/rcra.html>
- ② 1980 Superfund/CERCLA Comprehensive Environmental Resource Compensation and Liability Act

<http://www.epa.gov/superfund/policy/cercla.htm>

- Ⓢ 1990 CAA Clean Air Act
<http://www.epa.gov/air/caa/>
- Ⓢ 1990 NAGPRA Native American Graves Protection and Repatriation Act, Public Law 101-601 <http://www.nps.gov/nagpra/mandates/25usc3001etseq.htm>
- Ⓢ 1992 Lead Paint Lead-Based Paint Hazard Reduction Act
<http://www.epa.gov/lead/pubs/titleten.html>
- Ⓢ 1996 Right to Know/SARA- Superfund Amendments and Reauthorization Act, includes Emergency Planning and Community Right to Know Act (Title III of SARA)
<http://www.epa.gov/superfund/policy/sara.htm>
- Ⓢ Brownfields- Small Business Liability Relief and Brownfields Revitalization Act
<http://www.epa.gov/brownfields/laws/sblrbra.htm>

“Sound the Drum for Justice”



VII. Trainings, Conferences, and Funding

Trainings:

Date	Description	Location
Dec 12-16, 2011	Water Quality Standards Introductory Course	Washington, DC http://www.glec-online.com/WQSA_sessions/session1/course_info.php
Dec 13-15, 2011	GIS for Air Quality by ITEP	Las Vegas, NV http://www4.nau.edu/itep/air/training_aq_gisaq.asp
Dec 13-15, 2011	EPA Alaska GAP Training	Anchorage, AK
Jan 11-13, 2011	Zender Group's Integrated Solid Waste Management Plan Training	Anchorage, AK www.zendergroup.org
Jan 18-20, 2012	Air Quality System (Level 3) by ITEP	Las Vegas, NV http://www4.nau.edu/itep/air/training_aq_gisaq.asp
Jan 23-28, 2011	Group 1 Hazardous Waste Technician Certificate Program by YRITWC	Fairbanks, AK http://www.yritwc.org/Departments/Backhaul.aspx
Jan 24-27, 2012	Introduction to Tribal Air Quality (Level 1) by ITEP	Flagstaff, AZ http://www4.nau.edu/itep/air/training_aq_itaq.asp

Conferences:

Date	Description	Location
Jan 4-7, 2012	Conference of Young Alaskans	Juneau http://youngalaskans.org/
Jan 16-20, 2012	Alaska Marine Science Symposium	Anchorage http://www.alaskamarinescience.org/
Feb 6-10, 2012	Alaska Forum on the Environment	Anchorage http://akforum.com/
Apr 11-13, 2012	National Training Conference on the Toxics Release Inventory and Environmental Conditions in Communities (EPA)	Washington, DC http://www.chemicalright2know.org/
Apr 30-May 4, 2012	EPA Region 10 Tribal Leaders Summit	Grand Ronde, OR http://www.grandronde.org/tls/?date=2/7/2012

Funding:

Description	"Usual" month due	Contact/Website
Grassroots Communities Mining Mini-grant Program	October	http://www.ienearth.org/minigrants.html
7 th Generation Fund for Indian Development	October	http://7genfund.org/grant_making_guidelines.php
Sustainable Communities Regional Planning grant	October	http://www.dot.gov/tiger/index.html
Honor the Earth: Building Resilience in Indigenous Communities Initiative	October	www07.grants.gov/search/search.do?&mode=VIEW&oppld=120554
EPA Smart Growth Implementation Assistance	Letters of Interest due October	http://www.honorearth.org/grantmaking/guidelines
NOAA Marine Debris Program	November	http://www.epa.gov/smartgrowth/sgia.htm
EPA National Environmental Information Exchange Network Grant Program	November	http://marinedebris.noaa.gov/funding/welcome.html
EPA Environmental Education Sub-grants	November	http://www.epa.gov/exchangenetwork/grants/index.html
Brownfield Revolving Loan Fund, and Cleanup Grants	November	http://www.epa.gov/enviroed/grants.html
FY2013 IGAP Funding	Dec 20, 2011	http://www.epa.gov/brownfields/applicat.htm
USDA Solid Waste Management Grant Program	Dec 31, 2011	http://www.commerce.state.ak.us/dca/grt/blockgrants.htm
Rasmuson Foundation	Proposals accepted throughout the year	http://www.epa.gov/smartgrowth/gov-institute-2011-rfp.htm
AmeriCorps Indian Tribes Planning grants	January 18, 2012	http://yosemite.epa.gov/R10/TRIBAL.NSF/webpage/Tribal+Grants/
K-12 Environmental Projects Grants	Mar 15, 2012	http://www.usda.gov/rus/water/SWIMG.htm

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IX. Environmental Terms and Definitions

Acid: A corrosive (destructive) solution. Vinegar is a common weak acid; battery acid is a stronger acid.

Acid Rain: When emissions of sulfur and nitrogen compounds from power plants burning coal are transformed by chemical processes in the atmosphere and fall as rain, snow, or fog.

Active Ingredient: In any pesticide product, the component that kills or controls pests. Pesticides are regulated primarily on the basis of active ingredients.

Acute Effect: A harmful effect on any living organism in which severe symptoms develop rapidly and may go away after the exposure stops.

Acute Toxicity: Adverse effects that result from a single dose or single exposure of a chemical.

Acceptable Daily Intake (ADI): An estimate of the daily dose that is likely to be without harmful effect even if this amount is consumed every day.

Agency for Toxic Substances and Disease Registry (A TSDR): A U.S. government agency that conducts research focused on toxic substances and their effects on public health. Programs include health studies, substance-specific research, and maintaining various disease registries.

Air Quality Standards: The level of selected pollutants set by law that may not be exceeded in outside air. Used to determine the amount of pollutants that may be emitted by industry. See NAAQS.

Aquifer: An underground layer of rock, gravel or sand that is saturated with water, which can be pumped out.

Asbestos: A mineral fiber used for insulation that can pollute air or water and cause cancer or asbestosis when inhaled. EPA severely restricted the use of asbestos in manufacturing and construction.

Bactericide: A chemical used to control or destroy bacteria, typically in the home, schools, or hospitals.

Biochemicals: Chemicals that are either naturally occurring or identical to naturally occurring substances. Examples include hormones. Biochemicals function as pesticides. Biochemicals tend to be environmentally compatible and are important to Integrated Pest Management programs.

Biodegradable: The ability of a substance to be broken down physically and/or chemically in the environment. For example, many chemicals, food scraps, cotton, wool, and paper are biodegradable; plastics and polyester are not.

Biomarker: Indicators of the presence of a chemical in the body or an indicator of damage to a cell or to DNA.

Bioremediation: The use of living organisms (like bacteria) to clean up oil spills or breakdown other pollutants in soil, water, and wastewater.

By-product: Materials, other than the intended product, generated as a result of an industrial process.

Carcinogenic or Carcinogen: A substance capable of causing cancer in humans or animals.

Chemical Abstracts Service Number (CAS#): A unique number assigned by the Chemical Abstracts Service to identify every single chemical.

Centers for Disease Control (CDC): The agency in charge of promoting health and quality of life by preventing and controlling disease, injury, and disability.

Cancer Effect level (CEL): The lowest dose of chemical in a study or group of studies that produces significant increases in the incidence of cancer (or tumors).

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCUS): A federal database that includes all sites that have been nominated for investigation by the Superfund program and the actions that have been taken at these sites.

Code of Federal Regulations (CFR): Specific federal regulations (accessible at any library).

Chlorination: Adding chlorine to water or wastewater to destroy bacteria, viruses, and other microorganisms.

Chlorofluorocarbons (CFCs): A family of chemicals commonly used in air conditioners and refrigerators as coolants. CFCs can move in to the upper atmosphere and destroy the ozone layer.

Chronic Effect: An adverse effect on any living organism in which symptoms develop slowly over a long period of time or recur frequently.

Clean Air Act (CAA): The comprehensive federal law that regulates air emissions from all sources. This law authorizes the EPA to establish National Ambient Air Quality Standards (NMQS) to protect public health and the environment. **Clean Water Act (CW A):** The federal law regulating discharges of pollutants to surface waters. This law gave the EPA the authority to set effluent standards on an industry-by-industry basis and to set water quality standards for all contaminants in surface waters.

Climate Change: Changes in weather worldwide from the buildup of man-made gases in the atmosphere that trap the sun's heat. Often referred to as global warming or the green house effect.

Carbon Monoxide (CO): A colorless, odorless, poisonous gas from the incomplete burning of fuel. Cars and trucks are the major source of CO.

Compliance: If a facility is in compliance, it is meeting the pollution laws and regulations.

Compost: Organic material that is produced when bacteria in soil break down biodegradable garbage or trash, making organic fertilizer. Gardeners and farmers use compost for soil enrichment.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund): Provides a federal fund to clean up uncontrolled or abandoned hazardous waste sites as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment.

Concentration: The amount of a substance (mass) mixed with another substance (volume). An example is five parts per million of carbon monoxide in air or 1 milligram/liter of iron in water.

Confounder: A factor associated with exposure and with a disease under study. It often distorts the results of a health study. **Corrosive:** A substance that 'eats' or 'wears away' materials by chemical reactions.

Dechlorination: Removal of chlorine from water.

Deep Well Injection: A process by which waste fluids are injected deep below the surface of the earth.

Demographics: Information about a population such as the number of people, education levels, and income levels.

Department of Justice (DOJ): US government agency responsible for enforcing federal laws. The Environment and Natural Resources Division acts as the nation's environmental lawyer.

Detection Limit: The lowest concentration of a chemical that scientific instruments can detect.

Discharge: The release of any waste into the environment from a point source. Usually refers to the release of a liquid waste into a body of water through a pipe, but also refers to air emissions.

Disposal: The discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into the environment (land, surface water, ground water, or air).

Disposal Facility: A landfill, incinerator, or other facility, which receives waste for disposal except wastewater treatment.

Dissolved Oxygen (DO): Oxygen that is freely available in water to sustain the lives of fish and other aquatic organisms.

Dose: The amount of a substance taken into the body over a given period of time.

Dose Response: How an organism's response to a toxic substance changes as overall exposure to the substance changes. For example, a small dose of carbon monoxide may cause drowsiness; large dose can be fatal.

Dump: A land site where wastes are discarded in a disorderly fashion without regard to protecting the environment. Problems associated with dumps include multiplication of disease-carrying organisms and pests, fires, and air and water pollution.

Drinking Water Equivalent level (DWEL): The concentration chemicals in drinking water that does not cause harmful effects over a lifetime of exposure.

Ecology: The study of the relationships between all living organisms and the environment.

Ecosystem: The collection of all living organisms and the physical components (e.g. land and water) in an area.

Effluent: Wastewater discharged from a point source, such as a pipe.

Effluent Limitations: Limits on the amounts of pollutants that may be discharged by a facility. These limits are calculated so that water quality standards will not be violated.

Emergency Planning and Community Right-to-Know Act (EPCRA): Also known as Title III of SARA. Congress enacted EPCRA as the national legislation on community safety. This law was designed to help local communities protect public health, safety, and the environment from chemical hazards.

Emission: The release or discharge of a substance into the environment. Generally refers to the release of gases or particulates into the air.

Emission Standards: Government standards that establish limits on discharges of pollutants into the environment (usually into air).

Endangered Species: Animals, plants or other living organisms in danger of extinction by man-made or natural changes in the environment.

Environmental Assessment (EA): A preliminary, written, environmental analysis to determine whether a federal activity such as building airports or highways would significantly affect the environment. It may require preparation of a more detailed Environmental Impact Statement.

Environmental Audit: An independent assessment (not conducted by EPA) of a facility's compliance policies, practices, and controls. Many pollution prevention initiatives require an audit to determine where wastes may be reduced or eliminated or energy conserved.

Environmental Equity: Equal protection from environmental hazards for individuals, groups or communities regardless of race, ethnicity, or economic status.

Environmental Impact Statement (EIS): A document prepared by or for EPA, which identifies and analyzes, in detail, environmental impacts of a proposed action. It is a tool for decision-making that describes positive and negative effects and lists alternatives.

Environmental Justice: The fair treatment of people of all races, cultures, incomes, and educational levels with respect to the development and enforcement of Environmental laws, regulations, and policies.

Environmental Protection Agency (EPA): The federal agency in charge of enforcing environmental regulations for the protection of human health and the environment.

Epidemiologist: A scientist who studies the various factors involved in the incidence, distribution, and control of disease in a population.

Erosion: The movement of soil by wind or water, intensified by land-clearing practices related to farming, residential or industrial development, road building, or tree farming.

Estuary: A complex ecosystem between a river and near-shore ocean waters where fresh and salt water mix. These areas include bays, mouths of rivers, wetlands, and lagoons and are influenced by tides and currents. Estuaries provide valuable habitat for marine animals, birds, and other wildlife.

Exceedances: Violation of the pollutant levels permitted by environmental protection standards.

Exposure: Chemicals, radiation or pollutants that come into contact with the body and present a potential health threat. The most common routes of exposure are inhalation, ingestion, and absorption.

Extremely Hazardous Substances (EHS): Chemicals or substances identified by the EPA as being very reactive or toxic.

Fecal Coliform Bacteria: Bacteria found in the intestinal tracts of mammals. These bacteria in later are an indicator of fecal pollution and possible contamination by disease-causing microorganisms.

Flammable: Any material that can be caught on fire easily and that will burn rapidly.

Freedom of Information Act (FOIA): The law that allows the public to obtain information from the federal government.

Federal Register: The federal document with the latest regulatory information and important notices from all U.S. government agencies.

Fugitive Emissions: Emissions to air that are not coming from a specific source. They are uncontrolled and difficult to monitor.

Fungicide: A pesticide used to control or destroy fungi on food or grain crops.

Garbage: Food wastes (animal and vegetable) resulting from the handling, storage, packaging, sale, preparation, cooking, and serving of foods.

Genotoxicity: Toxicity that damages genetic material.

Gastrointestinal tract (GO): The gastrointestinal tract refers to the stomach and small intestine of the body.

Ground Water: Water found below the surface of the land, usually in porous rock formations. Ground water is the source of water found in wells and springs and is used frequently for drinking.

Hazardous Air Pollutants (HAP): Air pollutants that are not covered by the NAAQS, but which can cause health problems.

Hazardous Waste: Wastes that pose substantial or potential threats to public health or the environment and is specifically listed as a hazardous waste by EPA. It has one or more of the characteristics of hazardous wastes (ignitability, corrosiveness, reactivity, and toxicity).

Health Assessment: An evaluation of available data on existing or potential risks.

Heavy Metal: A common hazardous waste that can damage organisms at low concentrations and tends to accumulate in the food chain.

Herbicide: A pesticide designed to control or kill plants, weeds, or grasses. Almost 70% of all pesticides used by farmers and ranchers are herbicides.

Department of Health and Human Services (DHHS): The federal agency responsible for protecting the health of all Americans and providing essential human services, especially for those who are least able to help themselves.

Household or Domestic Waste: Solid waste composed of garbage and trash, which normally originates from residential, private households, or apartment buildings. Domestic waste may contain a significant amount of toxic or hazardous waste from improperly discarded pesticides, paints, batteries, and cleaners.

Incidence: The number of new illnesses in a population over a certain period of time, normally one year.

Incineration: The destruction of solid, liquid, or gaseous wastes by controlled burning at high temperatures.

Incinerator: A furnace for the burning of waste materials using controlled flame combustion.

Industrial Waste: Unwanted materials such as liquid wastes, sludge, solid wastes, and hazardous wastes, produced by industries.

Inert ingredients: "Non-active" substances, such as water, petroleum solutions, talc, corn meal, or soaps. When discussing pesticides, inert ingredients do not attack a particular pest, but some are chemically or biologically active, causing health and environmental problems.

Initiation: The first phase of cancer.

Inorganic: Chemical substances of mineral origin.

Insecticide: A pesticide compound specifically used to kill or prevent the growth of insects.

Integrated Pest Management (IPM): A combination of biological, cultural, and genetic pest control methods with use of pesticides as the last resort.

Internal Dose: The actual quantity of a chemical inside the organism, normally measured in the blood.

Inversion: An atmospheric condition caused by increasing temperature with elevation, resulting in a layer of warm air preventing the rise of cooler air trapped beneath. This condition prevents the dispersion of pollutants, increasing their concentration. Trapping pollutants near the ground increases ozone to harmful levels.

Integrated Risk Information System (IRIS): A database with information about the toxic effects of chemicals and safe levels of exposure.

Irradiated Food: Food that has been briefly exposed to radioactivity (usually gamma rays) to kill insects, bacteria, and mold. Irradiated food can be stored without refrigeration or chemical preservatives for a long period of time.

Lagoon: A shallow, artificial treatment pond where sunlight, bacterial action, and oxygen work to purify wastewater. Also called a stabilization pond or aerated lagoon.

Landfill: A method for final disposal of solid waste on land. The waste is compacted and put into the ground and then covered with soil.

Landfill Closure: The procedure an operator must go through when a landfill is filled. No more waste can be accepted and a seal usually is placed over the site. Monitoring is required after the site has been closed.

Leachate: Water that penetrates a landfill and can pick up dissolved, suspended, and/ or microbial contaminants from the waste.

Lead (Pb): A toxic heavy metal affecting the nervous system; it accumulates in the body and is stored in bone.

Lethal Concentration 50 (LC 50): The concentration of a gaseous chemical, which causes 50% of the test organisms to die. It is a common measure of acute toxicity.

Lethal Dose 50 (LD 50): The dose of a chemical that will kill 50% of test organisms within a designated period of time. The lower the LD 50, the more toxic the compound.

Liner: A layer of natural clay or sheet of plastic which serves as a barrier to restrict leachate from reaching or mixing with ground water in landfills or lagoons.

Lowest Observed Adverse Effect Level (LOAEL): The lowest dose used in a study that caused a harmful health effect.

Local Emergency Planning Committee (LEPC): A committee appointed by the State Emergency Response Commission (SERC), which develops comprehensive emergency plans, collects chemical release reports, and provides this information to the public.

Malformations: Permanent structural changes in a fetus or infant that may adversely affect survival, development, or function. **Material Safety Data Sheet (MSDS):** Printed material concerning a hazardous chemical, or Extremely Hazardous Substance, including its physical properties, hazards to personnel, fire and explosion potential, safe handling recommendations, health effects, fire fighting techniques, reactivity, and proper disposal.

Maximum Contaminant Level (MCL): The maximum permissible level of a contaminant in drinking water from a public water system. The MCL's are enforceable standards.

Maximum Contaminant level Goal (MCLG): The concentration of a contaminant in drinking water which would be expected to not cause any harm even if the water is consumed every day for a lifetime.

Medical Waste: All wastes from hospitals, clinics, or other health care facilities that contain or have come into contact with diseased tissues or infectious microorganisms.

Microorganisms: Bacteria, mold, simple fungi, algae, protozoa, and a number of other organisms that are microscopic in size. Most are beneficial but some produce disease. Others are involved in composting and sewage treatment.

Minimization: Measures or techniques that reduce the amount of wastes generated during industrial production processes. This term also is applied to recycling and other efforts to reduce the volume of waste going to landfills. This is the same as waste reduction or waste minimization.

Mitigation: Measures taken to reduce adverse effects on the environment.

Monitoring Well: A well used to take water samples or to measure ground water levels.

Morbidity: Illness.

Mortality: Death.

Minimal Risk levels (MRL): An estimate of daily human exposure to a chemical that is likely to be without risk or adverse effects over a specified duration of exposure.

Mutagenic: The ability of a substance to cause changes in the DNA.

National Ambient Air Quality Standards (NAAQS): (ambient) air standards established by the EPA according to the Clean Air Act.

National Environmental Policy Act of 1969 (NEPA): Federal legislation requiring that all branches of government give proper consideration to the environment before taking any major action.

National Pollutant Discharge Elimination System (NPDES): The primary permitting program under the Clean Water Act, which regulates all discharges to surface water.

National Priorities List (NPL): The EPA's list of the most serious uncontrolled or abandoned hazardous waste sites.

National Emission Standards for Hazardous Air Pollutants (NESHAP): Emission standards set by the EPA for HAPs not covered by NAAQS that may cause an increase in illness or death.

National Institutes of Health (NIH): One of eight health agencies of the U.S. Public Health Service that is the focal point for biomedical research in the United States.

National Institute for Occupational Safety and Health (NIOSH): A research agency for the prevention of work related illnesses.

National Library of Medicine (NLM): The world's largest medical library, where materials in all major areas of the health sciences are collected.

No Observed Adverse Effect level (NOAEL): The highest level of exposure that does not cause observable harm.

No Observed Effect level (NOEL): The highest level of exposure that does not cause any observable effect.

Nitrogen dioxide (NO₂): An irritant and asphyxiate gas that worsens lung diseases and leads to formation of ozone. Motorized vehicles are the largest source of NO₂

Non-Attainment Areas: Areas of the United States that do not meet the National Ambient Air Quality Standards by deadlines set in the Clean Air Act.

Non-point Source: Any source of pollution not associated with a distinct discharge point; includes sources such as runoff from agricultural lands, industrial sites, and parking lots, as well as escaping gases from pipes and fittings.

National Technical Information Service (NTIS): Part of the U.S. Department of Commerce. NTIS is the official resource for government-sponsored scientific, technical, engineering, and business-related information.

National Toxicology Program (NTP): A program that designs, conducts, and interprets animal experiments for toxicity and carcinogenicity.

Ozone (O₃): The principal component of smog, which forms from vehicle emissions in the presence of sunlight.

Occupational Safety and Health Administration (OSHA): An agency that is located in the Department of labor and is responsible for creating and enforcing workplace safety and health regulations.

Odds Ratio (OR): A measure of the increase in the chance of disease for a person who is exposed to a chemical as compared to a person who is not exposed.

Organic: A chemical made with carbon; includes most pesticides and solvents.

Organically Grown: Food, feed crops, and livestock grown without any pesticides or hormones.

Organism: Any living being, plant, mammal, bird, insect, reptile, fish or bacterium.

Oxidant: A chemical that can react chemically with other substances. Ozone is an oxidant that can damage lung tissue if it is breathed, or can destroy microorganisms if it is added to drinking water.

Parameter: A measurable property. Temperature, pressure, and density are parameters of the atmosphere.

Particulates: Liquid or solid particles such as dust, smoke, mist, or smog found in air emissions.

Particulate Matter (PM₁₀): Ash, smoke, soot, dust, fibers, and liquid materials such as droplets and aerosols.

Pathogen: A bacterial organism capable of producing disease.

Permit: A legal document issued by state and/or federal authorities containing a detailed description of the proposed activity and operating procedures as well as appropriate requirements and regulations.

Pesticide: Substances intended to repel, kill, or control 'pests' like weeds, insects, rodents, fungi, bacteria, or other organisms. The family of pesticides includes herbicides, insecticides, rodenticides, fungicides, and bactericides.

Plume: The area which will be polluted by a contaminant after it is released.

Point Source: A stationary location or fixed facility such as an industry or municipality that discharges pollutants into air or surface water through pipes, ditches, lagoons, wells, or stacks a single identifiable source such as a ship or a mine.

Pollution: Any substance in water, soil, or air that degrades the natural quality of the environment, offends the senses of sight, taste, or smell, or causes a health hazard.

Pollution Prevention: Conserving energy, minimizing wastes, material substitutions, alterations, and product improvements to reduce the amount of pollution produced.

Polychlorinated Biphenyl (PCBs): A group of toxic chemicals used in electrical transformers and capacitors. PCBs were banned in 1979.

Potable Water: Water that is considered safe to drink.

Potentially Responsible Party (PRP): Any individual or company that is potentially responsible for or has contributed to a spill or other contamination at a Superfund site. Whenever possible, the EPA requires PRPs to clean up sites they have contaminated.

Prevalence: The current number of people suffering from an illness at a given point in time.

Primary Pollutants: Air pollutants that can affect health. Promotion: The second phase of cancer.

Publicly Owned Treatment Works (POTW): A municipal or public service district wastewater treatment system.

Quality Assurance/Quality Control: A system of procedures, checks, audits, and corrective actions to ensure that all technical, operational, monitoring, and reporting activities are of the highest achievable quality.

Radioactive Waste: Any waste that emits radiation.

Radionuclides: Radioactive particles, man-made or natural.

Radon: A colorless, naturally occurring gas formed by radioactive decay of uranium. Radon accumulating in basements and other areas of buildings without proper ventilation has been identified as an important cause of lung cancer.

Raw Water: Water prior to any treatment or use.

Reactivity: Refers to those hazardous wastes that are unstable and can undergo violent chemical changes, but do not explode.

Receiving Waters: A river, lake, ocean, stream, or other body of water into which wastewater or treated effluent is discharged.

Recycling: Reusing materials and objects rather than discarding them as wastes.

Refine: To remove impurities

Residue: Stuff that is left over after some process, such as the solids left after water is evaporated.

Resource Conservation and Recovery Act (RCRA): A law that gives the EPA authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also sets forth a framework for the management of non-hazardous solid wastes.

Inhalation Reference Concentration (RfC): The concentration of a contaminant in air which is not expected to cause any health effects even if it is breathed continuously over a lifetime.

Oral Reference Dose (RfD): An estimate of a daily oral exposure to the human population that is likely to be without harmful effect during a lifetime (normally used for water).

Risk: A measure of the chance that damage to life, health, property, or the environment will occur in a specified period of time.

Risk Assessment: A study to estimate the level of risk associated with a specific situation or release of a contaminant.

Risk Communication: The process of exchanging information about levels or, significance of health or environmental risks.

Risk Factor: A characteristic (e.g. race, sex, age, and obesity) associated with increased chance of a health problem.

Rodenticide: A pesticide or other agent used to kill rats and other rodents.

Reportable Quantity (RQ): Quantity of a hazardous substance that needs to be reported under CERCLA. If a substance exceeds its RQ, the release must be reported to the National Response Center and community emergency coordinators in areas likely to be affected.

Relative Risk (RR): A measure of the increase in the chance of disease for a person who is exposed to a chemical as compared to, a person who is not exposed.

Scrubbing: A common method of reducing stack air emissions by spraying a liquid that concentrates the impurities into waste.

Safe Drinking Water Act (SDWA): Law establishing and enforcing safe standards for public water systems.

Secondary Pollutants: Air pollutants that may have negative effects other than health, such as damage to buildings.

Sediment: Topsoil, sand, and minerals washed from the land into water, usually after rain or snow melt.

Septic tank: An underground tank to collect wastes from homes that are not connected to a municipal sewer system. Wastes go from the home into the tank and are decomposed by bacteria.

Sewer: A channel or conduit that carries wastewater to a treatment plant. Sanitary sewers carry household, industrial, and commercial wastes.

Standard Industrial Classification (SIC): A classification of industries according to their process or activity.

Siting: Choosing a location for an industrial facility.

Sludge: The residue (solids and some water) produced as a result of water or wastewater treatment.

Smog: Combination of particles and gases causing cause the air to look hazy and can cause breathing problems.

Sulfur Dioxide (SO₂): A gas emitted from electrical power plants. It is the principal component of acid rain and can affect the respiratory system.

Solid Waste: As defined under RCRA, any solid, semi-solid, liquid, or contained gaseous materials discarded from industrial, commercial, mining, or agricultural operations, and from community activities. Solid waste includes garbage, construction debris, commercial trash, sludge from water supply or waste treatment plants, or air pollution control facilities, and other discarded materials.

State Emergency Response Commission (SERC): Appointed by the state to oversee the administration of EPCRA at the state level. This commission designates and appoints members to LEPCs and reviews emergency response plans for cities and counties.

Short Term Exposure Limit (STEL): The maximum concentration to which worker scan be exposed for up to 15 continuous minutes. No more than four exposures c3re allowed per day, and there must be at least 60 minutes between exposure periods.

Surface Water: All water naturally open to the atmosphere (rivers, lakes, reservoirs, ponds, streams, seas, and estuaries).

Suspended Solids: Solids that either float on the surface or are suspended in water, wastewater, or other liquids.

Sustainable Agriculture: Environmentally friendly methods of farming that allow the production of crops or livestock without damage to the farm as an ecosystem, including effects on soil, water supplies, biodiversity, or other surrounding natural resources.

Teratogen: A substance capable of causing birth defects.

Threshold Limit Value (TLV): The concentration of an airborne substance that a healthy person can be exposed to for a 40-hour workweek without adverse effect.

Tolerance: Permissible residue level for pesticides in raw agricultural produce and processed foods. Whenever a pesticide is registered for use on a food or feed crop, a tolerance must be established. The EPA establishes the tolerance levels, which are enforced by the Food and Drug Administration and the Department of Agriculture.

Toxic Chemical: Substances that can cause severe illness, poisoning, birth defects, disease, or death when ingested, inhaled, or absorbed by living organisms.

Toxic Release Inventory (TRJ): A database with information about toxic chemicals that are being released into the environment. Industries are required to report their emissions annually.

Toxic Substances Control Act (TSCA): A law enacted by Congress to test, regulate, and screen all chemicals produced or imported into the U.S. Many thousands of chemicals and their compounds are developed each year with unknown toxic or dangerous characteristics. TSCA requires that any chemical that reaches the consumer market place be tested for possible toxic effects prior to commercial manufacture.

Toxic: The ability to damage an organ or system.

Toxicant: Man-made substance that damages an organ or a system.

Toxin: Plant or animal derived substance that damages an organ or a system.

Trade Secret: Any confidential formula, pattern, process, device, information, or set of data that is used in a business to give the owner a competitive advantage. Such information may be excluded from public review.

Turbidity: The amount of clouds in water due to suspended silt or organic matter.

Ultraviolet Rays: Invisible radiation from the sun. Some UV rays (UV-A) enhance plant life and are useful in certain medical and dental procedures. Other UV rays (UV-B) can cause skin cancer or other tissue damage.

Underground Injection: A mean of disposing of liquid waste by injecting them deep into the ground through a well.

Underground Storage Tank (UST): A tank and any underground piping connected to the tank that has 10% or more of its volume (including pipe volume) beneath the surface of the ground. USTs are designed to hold gasoline, other petroleum products, and hazardous materials.

Vapor: The gas released by solid or liquid substances at ordinary atmospheric pressure and temperature.

Vapor Dispersion: The movement of vapor clouds or plumes in the air due to wind, gravity, spreading, and mixing.

Virus: Extremely simple microorganisms, some of which can cause diseases in humans.

Volatile: Any substance that evaporates or catalyzes rapidly.

Volatile Organic Compounds (VOC): Any organic compound that evaporates readily to the atmosphere. VOCs contribute significantly to smog production and certain health problems.

Water Table: The top of an aquifer, the level where the ground is saturated with water.

Wetlands: land areas that are very wet, immersed by surface or ground water frequently enough or for sufficient duration to support plants, birds, animals, and aquatic life. Wetlands generally include swamps, estuaries, and other areas and are federally protected.

Wildlife Refuge: An area designated for the protection of wild animals, within which hunting and fishing are either prohibited or strictly controlled.

Xenobiotic: A term for man-made substances found in the environment (i.e., synthetics, plastics).