**Environmental Laws and Regulations - Notes**

**Effects of chemical use were recognized and documented.**

Rachel Carson, Silent Spring

* Advocacy Groups Very Important
  + Environmental Defense Fund
  + Friends of the Earth
  + Natural Resource Defense Council
  + Nature Conservancy
  + Southern Utah Wilderness Alliance (SUWA)
  + Greenpeace
  + Sierra Club
* Needed laws to protect our resources
* Sustainability – use of resources so they are available to future generations
* Protect resources from contamination (prevention) and cleanup resources that have been polluted (Don’t crap in your own nest)

**Awareness and Disasters lead to Laws (CERCLA and RCRA, Oil Pollution, EPCRA)**

* National Environmental Protection Act (NEPA) 1969 (First main environmental law)
* EPA – 1970- Nixon
* Goal: **Protect Human Health and the Environment**
* Clean Air Act, Clean Water Act, Safe Drinking Water Act, Atomic Energy Act, RCRA, CERCLA
* EPA created specific regulations to meet intent of Congressional laws/acts. Sometimes long and complex – **Science process is used.**
* Over time states adopted the regulations and became “authorized” to manage the EPA programs
* Allows local control, but EPA monitors state actions

**Main Environmental Regulatory Activities**

* Permitting (not one size fits all)
* Compliance and Inspection
* Tracking
* Cleanup (abandoned sites) also called corrective action
* Public Participation and Environmental Justice

**Permitting**

* Utah DEQ issues permits for certain activities such as hazardous waste landfills, releases of chemicals to the air, management of sewage or other waste that may impact groundwater etc.
* Rules are general and permits are specific to a certain industry
* Builders must obtain permits for management of storm water before excavation and grading starts. Site specific approach. Ivory recently cited by EPA.

**Compliance and Enforcement**

* Utah DEQ and EPA periodically inspect permitted and non-permitted facilities and sites to verify compliance with environmental requirements.
* Violations result in fines and penalties. Knowing and willful violations can result in criminal penalties

**Corrective Action and Cleanup**

* Past disposal practices lead to pollution of soil and groundwater. CERCLA
* Military, Industry, Mining, Underground petroleum and dry cleaning tanks
* Building excavations and “surprises” for property owners

**Public Participation and Environmental Justice**

* Before issuing a permit, a public notice is published and public meetings are held
* Notice is 30-60 days
* Permit modifications
* Notice of Violation and Orders for Compliance (NOV/CO)

**Main Environmental Laws Prevent Contamination of Environmental Media (Air, Land, Water)**

**Clean Air Act**

* Law passed in 1970, modified in77 and 90. carbon dioxide added
* six common "[criteria pollutants](http://www.epa.gov/air/urbanair/)": particulate matter (also known as particle pollution), ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, and lead. EPA
* Ozone and particle pollution main threats
* “Ground level or "bad" ozone is not emitted directly into the air, but is created by chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight. EPA
* Emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents are some of the major sources of NOx and VOC.” EPA
* Particulate matter," also known as PM, is a complex mixture of extremely small particles and liquid droplets. EPA
* Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil particles.
* The size of particles is directly linked to their potential for causing health problems.
* EPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs.
* Once inhaled, these particles can affect the heart and lungs and cause serious health effects. EPA
* About 10-15 PM particles per width of one human hair (very fine, breathable)

**Clean Water Act**

* Protect our Surface water, streams, lakes, rivers and ocean
* Protect Groundwater
* PREVENTION!!!
* 1948 and 1972
* The CWA made it unlawful to discharge any pollutant from a point source into water, unless a permit was obtained.
* Point sources are discrete conveyances such as pipes or man-made ditches. Industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.
* Groundwater Protection
* Discharge permits: agriculture (hog farms, beef processors, mines)
* 2008 Kingston Disaster
* Construction activities for sites larger than one acre must receive a storm water run-off permit before grading and other earthwork starts.
* A permit is based on general rules and applies those rules to a specific site or situation or location.
* Designed to ***prevent*** large amounts of sediment, concrete etc., from entering the storm water system:

**Safe Drinking Water Act**

* Under the Safe Drinking Water Act (SDWA), EPA sets legal limits on the levels of certain contaminants in drinking water.
* The legal limits reflect both the level that protects human health and the level that water systems can achieve using the best available technology.
* EPA rules set water-testing schedules and methods that water systems must follow.
* The rules also list acceptable techniques for treating contaminated water.
* **Public Water System** means any source(s) or combination of sources owned or controlled by a person, that provides drinking water through pipes or other constructed conveyances to the public and that has at least fifteen (15) service connections or serves an average of at least twenty five (25) individuals daily for at least sixty (60) days out of the year.

**Atomic Energy Act (Radiation Control)**

* Use of nuclear materials (x-rays in dental offices materials in equipment etc..
* Management of radioactive waste
* Low Level Landfill in Utah west desert (Energy Solutions Corp)
* Depleted Uranium
* Goshutes (high level)
* Radiation penetrates cells – mutation and damage – causes cancer

**Resource Conservation and Recovery Act (RCRA)**

* Prevent releases and exposures of hazardous waste..
* “Cradle to Grave” tracking and management
* Containerization and Disposal
* Storage, Treatment and Disposal (TSD) facilities permitted hazardous waste landfills and incinerator in Utah’s west desert
* Encourages recycling

Hazardous Waste Includes

* Toxic Metals (As, Ba, Cr, Cd, Hg, Pb, Se)
* Acids and Bases (corrosives)
* Reacts with water
* Ignites at low temperature
* Listed (solvents)
* Management depends on how much you generate
* **Typical Construction and Debris (C&D) waste not hazardous**
* Paint, acids, solvents, glue, light tubes
* Used oil

**Comprehensive Environmental Response, Compensation, Liability Act (CERCLA)**

* Federal Gov’t cleanup of abandoned hazardous waste disposal sites at federal and private sites
* Money allocated in “Superfund”
* Gov’t cleans it up and send the responsible parties the bill

**Emergency Planning and Community Right-to-Know Act (EPCRA) – Environmental Justice**

**(EPCRA)** was passed by Congress in response to concerns regarding the environmental and safety hazards posed by the storage and handling of toxic chemicals. These concerns were triggered by the 1984 disaster in Bhopal, India, caused by an accidental release of methylisocyanate. The release killed or severely injured more than 2000 people

* To reduce the likelihood of such a disaster in the United States, Congress imposed requirements for federal, state and local governments, tribes, and industry. These requirements covered emergency planning and "Community Right-to-Know" reporting on hazardous and toxic chemicals.
* The Community Right-to-Know provisions help increase the public's knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. States and communities, working with facilities, can use the information to improve chemical safety and protect public health and the environment.

**The Toxic Substances Control Act of 1976**

**TSCA** provides EPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures

* Production, use and disposal of
* PCBs
* Lead Paint
* Asbestos
* Radon
* Management of polychlorinated biphenyls or PCBs
* PCBs cause cancer and immune system problems
* Formerly Used in transformers, electrical oil etc., banned in 1979
* Bioaccumulation in fish

Lead Paints

* Ingestion of lead in contaminated soil, water from lead pipe, toys, paint chips or dust from paint can cause developmental problems in children. Loss of IQ (no safe level for children under 2).
* To remove lead based paint you must be certified, and manage the waste properly (usually hazardous)
* <http://www.airquality.utah.gov/HAPs/lead/UtahRRPPamphlet.pdf>
* Lead Paint Disclosure: <http://realestate.utah.gov/forms/leadpaintdisclosure.pdf>

Asbestos

* “Asbestos is the name given to a number of naturally occurring fibrous silicate minerals with high tensile strength and resistance to heat and most chemicals.”
* Causes breathing problems, lung cancer and a rare cancer called mesothelioma
* Sources: old tile, old piping, “popcorn” ceiling before 1978 (banned), electrical and building insulation etc…
* Must be EPA or State of Utah certified to remove and manage asbestos waste. Also OSHA regulated activity.

Radon

* **Radon** is the number one cause of lung cancer among non-smokers.  Overall, radon is the second leading cause of lung cancer.  Radon is responsible for about 21,000 lung cancer deaths every year (EPA).
* Radon is an odorless, tasteless and invisible gas produced by decay of naturally occurring uranium in soil and water. Radon is a form of ionizing radiation and a proven carcinogen.
* Radon is found in outdoor air and in the indoor air of buildings. EPA recommends homes be fixed if the radon level is 4 pCi/L (picocuries per liter) or more. Because there is no known safe level of exposure to radon, EPA also recommends that people consider fixing their home for radon levels between 2 pCi/L and 4 pCi/L.
* <http://www.radon.utah.gov/> videos
* Radon disclosure and remediation
* [http://www.radon.utah.gov/buildings/builder.htm#foundation](http://www.radon.utah.gov/buildings/builder.htm)