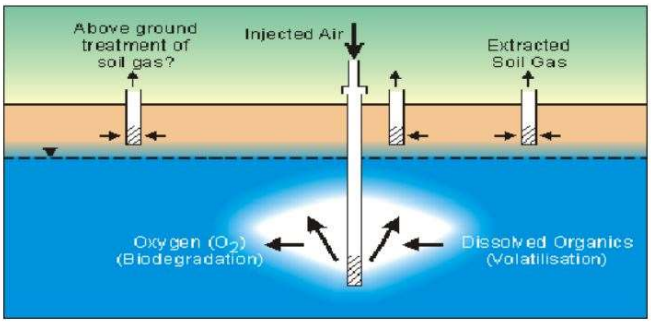
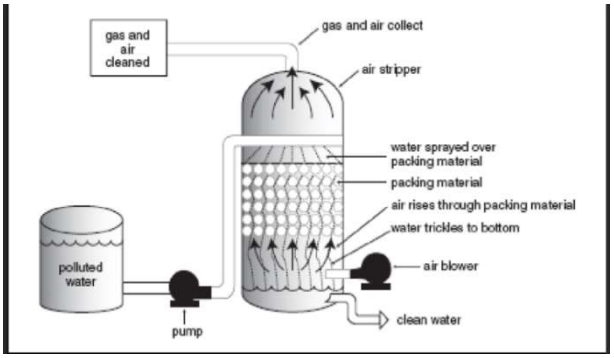
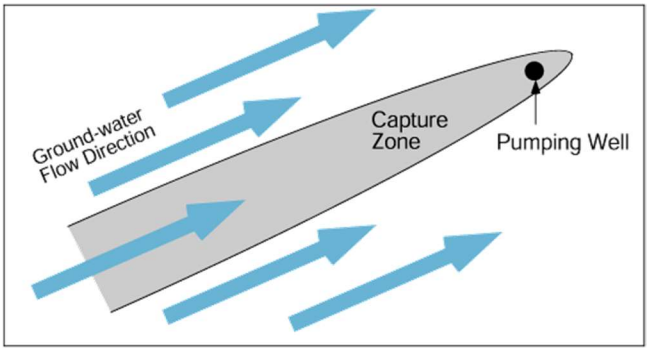
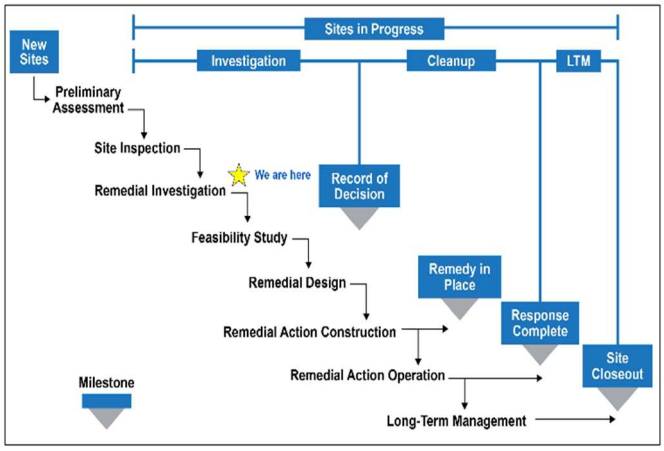
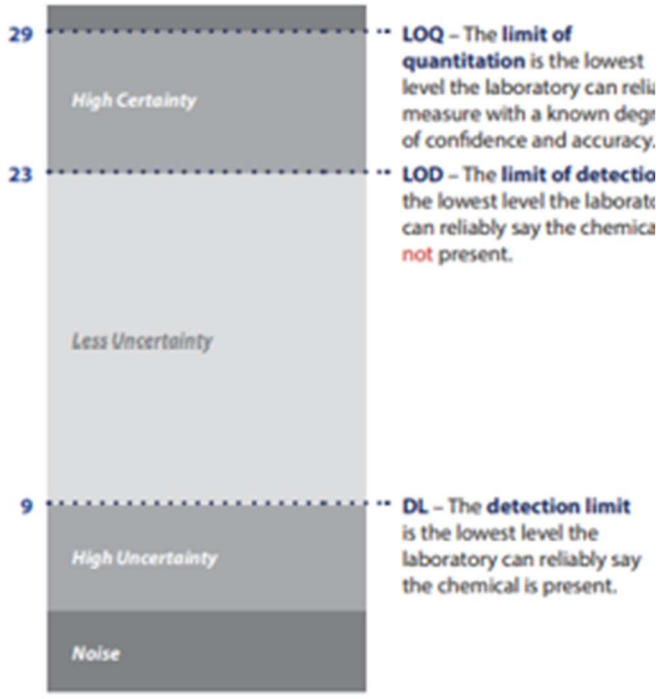
Definitions Sheet

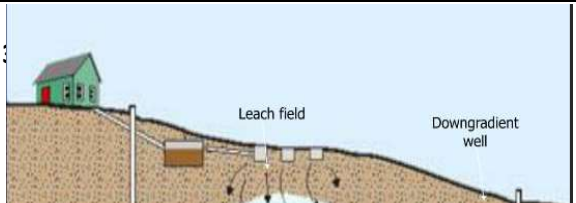
1,4- dioxane • Organic compound, colorless liquid with a faint sweet odor • Used in inks, adhesives and well as consumer products	
Air Sparge: • Groundwater remediation technique that pumps air into groundwater through wells to circulate and aerate the water • Speeds up the removal of VOCs by increasing oxygen levels for biodegradation.	 A schematic diagram illustrating method of air sparging.
Air Stripper • Process of moving air through impacted water to remove volatile chemicals from the water. This process is a remedy for VOC contamination in groundwater	
ARAR • CERCLA cleanups must attain all Applicable or Relevant and Appropriate Requirements (ARARs) of ○ Other Federal environmental laws, ○ More stringent State laws, and ○ State facility-sitting laws	

Definitions Sheet

Biosparge System • Uses microorganisms to naturally break down (or biodegrade) organic chemicals in impacted water	
Capture Zone • The underground area around a well that may contribute water to the well when it is pumped • Capture zones take into consideration well pumping rates and underground geology (sand, clay, etc)	
CERCLA • Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), enacted in 1980 by Congress • Responds directly to releases or threatened releases of hazardous substances that may endanger public health or the environment • Also known as Superfund, is a federal law that gives the government the authority to respond to hazardous substance releases and clean up contaminated sites	
Degradation • Process of breaking down a substance over a period of time • Can be natural or assisted with external forces such as a chemical or antibiotics	

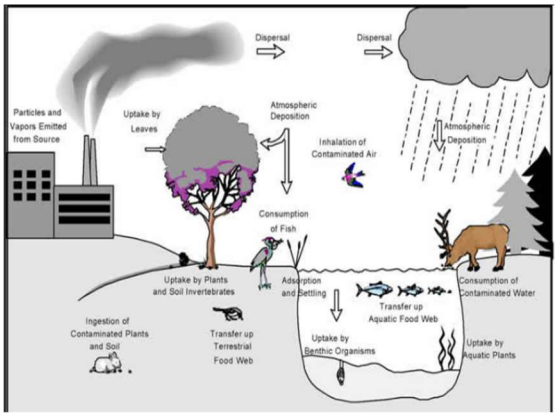
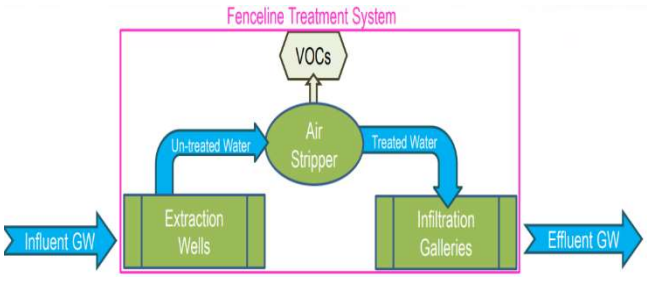
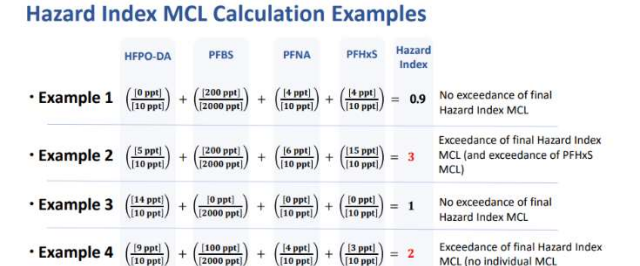
Definitions Sheet

Department of Environmental Conservation (DEC) • Department of New York State government that guides and regulates the conservation, improvement, and protection of New York's natural resources	
Department of Health (DOH) • State department responsible for public health	
Detection Limit (DL) • Lowest concentration of an analyte in a sample that the lab can say is present **Limit of Detection (LoD)** • Smallest concentration of an analyte in a test sample that the lab can easily distinguish from zero **Limit of Quantitation (LoQ)** • Smallest concentration of an analyte in a test sample that the lab can determine with acceptable accuracy • Usually higher than LoD and requires more precise measurements and greater degree of accuracy	
Downgradient	



Definitions Sheet

• Wells located downgradient detects impacts from the contaminants.
  ○ Groundwater flows at different rates and directions, when something is downgradient, it is located within the groundwater's traveling direction.
  ○ Similar to downwind in air	

Fate and Transport • Refers to how the nature of contaminants might change or break down and where they go as they move through the environment	
Feasibility Study • A comparative process that uses information gathered and analyzed during the RI phase to find the most effective option that eliminates or reduces contamination	
Fence Line Treatment System • Designed to catch and treat VOC impacted groundwater from Site 6A before it enters the Peconic River	
Hazard Index	

Definitions Sheet

• The Hazard Index (HI) maximum contaminant level (MCL) is calculated using the data for certain PFAS.	
JP-4 • Jet fuel • Developed in 1952, known as "AVTAG" • Used by the U.S military from 1951-1995	
JP-5 • Jet fuel. • Developed in 1952, known as "AVCAT" • Developed for aircraft stationed aboard aircraft carriers	
Leachability • Natural process of transfer a chemical from a solid material into water that contact it • An example is a chemical in soil leaching to groundwater	
Maximum Contaminant Level • Legal threshold limit on amount of a substance that is allowed in public water systems • Applicable to water providers/purveyors (RWD, SCWA, etc) • Standards set by the EPA or states for different chemicals	

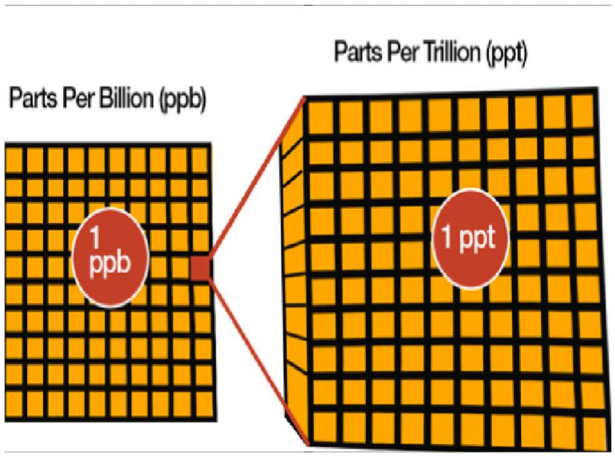
Definitions Sheet

Parts Per Trillion (ppt)

- A part of set of units to describe small values of dimensionless quantities
- Equivalent to nanogram per kilogram
- Number of units of a given substance that exists as a portion of a greater substance comprised of one trillion parts

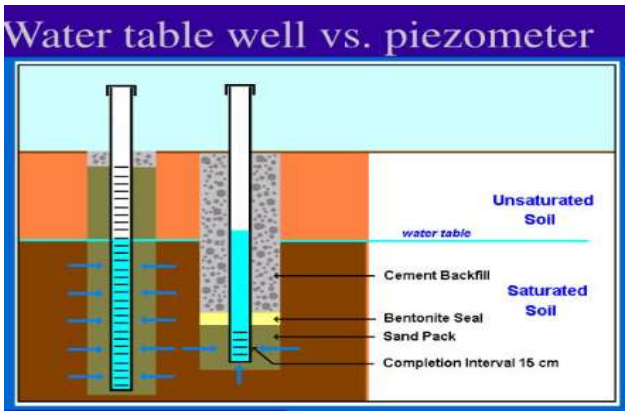
Parts Per Billion (ppb)

- Number of units of a given substance that exist as a portion of a greater substance comprised of one billion parts



Piezometer Well

- A well that is designed and installed for the purpose of monitoring water levels within a specific depth interval based on water pressure

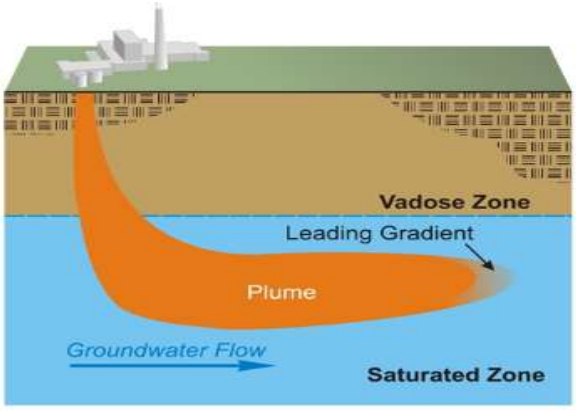
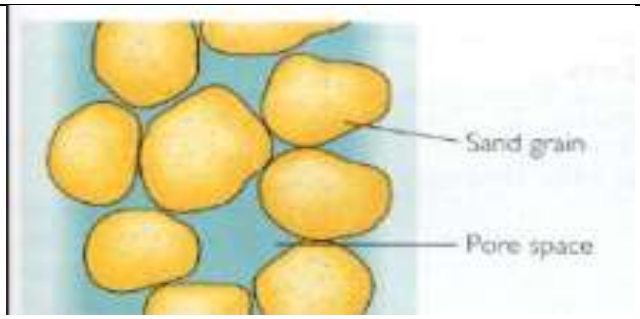


PFAS

- Synthetic manufactured chemicals found in many household items
- Found in the environment in air, soil, rain, animals, plants, as well as in people
- Widely used since 1950s in many products

Plume

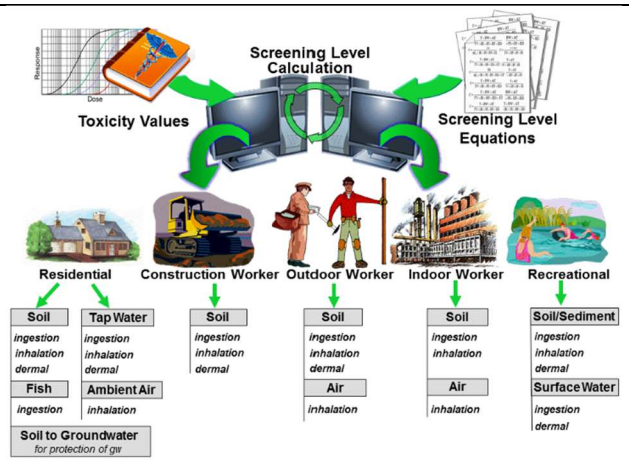
Definitions Sheet

• Body of water within a groundwater aquifer that has been impacted with chemicals	
Porewater • Water that is contained in pores of soil or in between small rocks • Very small quantities	
Preliminary Assessment (PA) • First step in a CERCLA investigation • Conducted to identify and evaluate additional areas of potential releases on each installation	
Record Of Decision (ROD) • A document that provides recommendation on remedial action and clarification on roles and responsibilities in decision documents • Explains how to address changes made to proposed and selected remedies	

Definitions Sheet

Regional Screening Level

- Screening tool used in investigations to determine where further evaluation is needed
- Derived from combining exposure information from EPA toxicity database
- Not cleanup standards



Remedial Investigation (RI)

- Comes after the SI in the CERCLA process if releases are confirmed.
- A detailed on-site investigation to fully characterize:
  - The Nature and extent of the release- how wide, how deep, and where contamination may be.
  - The fate and transport- how a contaminant may move within the environment.
  - The potential risks to human and environmental health.

Site Inspection (SI)

- Comes after the PA in the CERCLA process.
- An on-site sampling event to determine if there was a release.
- This initial phase starts the characterization of a release and identifies potential threats to human health and the environment associated with the release.

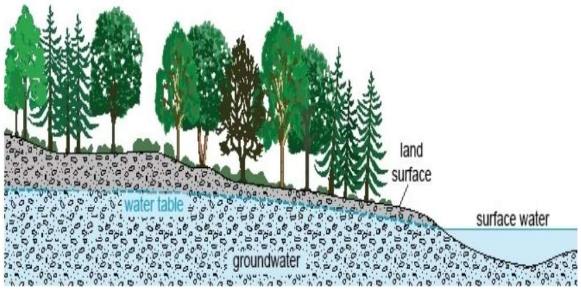
Definitions Sheet

Surface Water

- Water that collects on the surface of the ground.

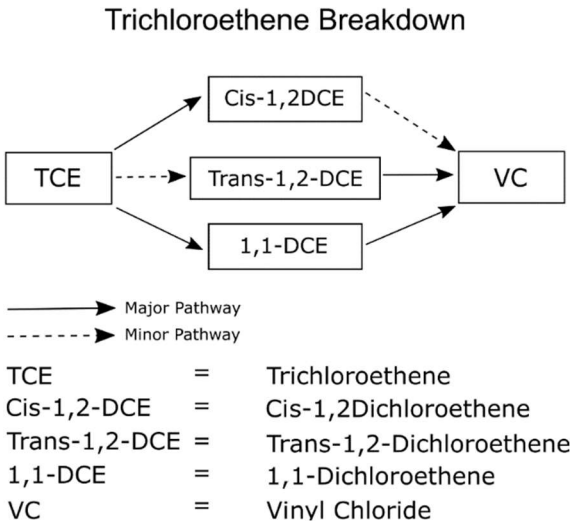
Ground Water

- Water that is held underneath surface in soil pores and rock.



TCE

- Chemical used as an industrial degreasing solvent
- Colorless, non-flammable with chloroform like mild smell.
- TCE, when exposed to the environment breaks down into predictable daughter products
- These daughter products are VOCs as shown on the figure



Turbidity

The quality of being cloudy, opaque with suspended matter in water.

United States Geological Survey (USGS)

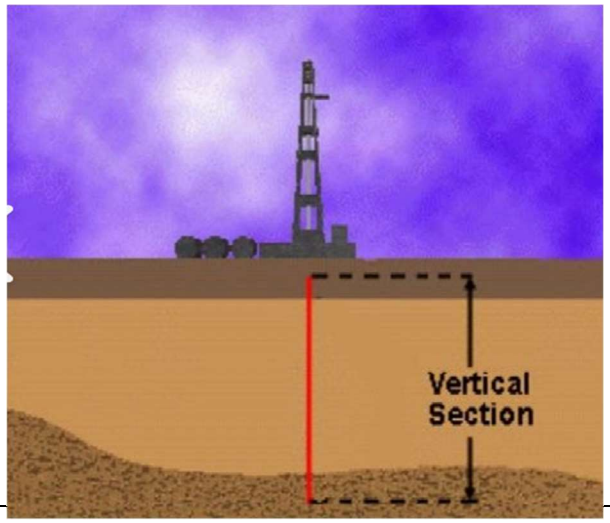
- A government agency that provides scientific information about natural resources, hazards, and physical features of the earth (topography).

USGS science for a changing world

Upgradient

Definitions Sheet

• Upgradient wells reflect natural groundwater conditions not affected by the contaminants.
  ○ Groundwater flows at different rates and directions, when something is upgradient, it is located before the plume.
  ○ Similar to upwind in air	

Vertical Profile Borings (VPBs) • Drilling method used to collect various samples such as soil and water • Causes minimal disturbances to the ground surface and provides detailed information regarding the local geology • Can be used to better understand underground plume fate and transport	
VOCs • Volatile organic compounds • Transitions into gases or vapors very easily • Also common in household items.	
Well Development	

Definitions Sheet

• Process which removes well drilling fluids, mud, cutting, from a newly installed well. • Completed by pumping or surging compressed air to get the material from the well out.