Establishment of OSHA

Safety Management Services

Objectives

- Early establishment of OSHA
- How OSHA structured their standards
- Comparing different industry standards
- OSHA's use of the General Duty Clause
- Structuring a safety program

Historical Context

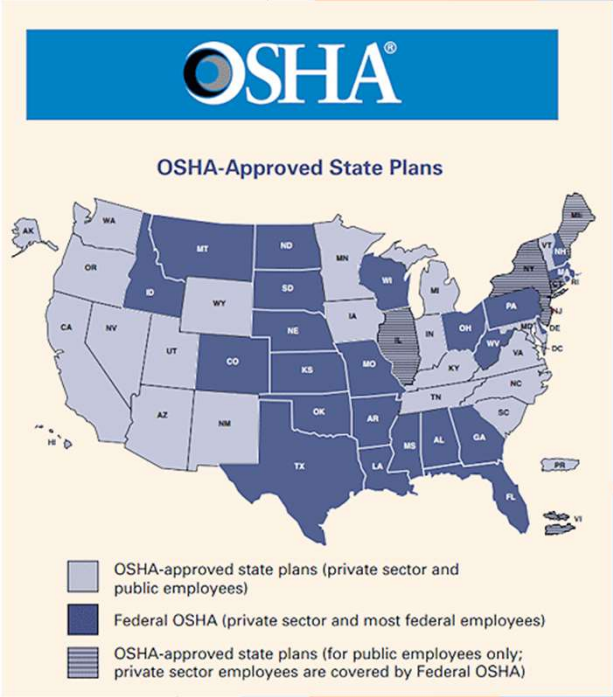
- Prior to OSHA, unions played an important role in safety
- Economic expansion of 1960s caused injury rates to increase
- Richard Nixon and Congress passed OSH Act in December of 1970
- It went into effect in April of 1971
- There was resistance from big business and even Congress

Historical Context

- First original standard limited worker exposure to asbestos, a known carcinogen
- Followed up by other chemical exposure limitations and hearing exposure
- Initially started with voluntary compliance
  - Except for catastrophic and severely dangerous
- Transitioned to a “get tough” stance
- Lead to 95% focus on industries with the most serious problems

Historical Context

- Due to some states operating an effective Occupational Safety and Health program Congress allowed for state ran programs
- State programs must be approved by OSHA and meet or exceed the federal standards
- 1972 South Carolina, Montana, and Oregon were approved for a state ran program
- Today 24 states and 2 territories operate a state ran programs



Industries Covered

- Private sector and some public
- Not all companies are covered
  - Self-employed
  - Immediate family members of farm employers
  - Already regulated programs (Mine Safety and Health, Department of Energy, Coast Guard)
- Federal agencies must have a program and can be inspected, but only issue “virtual citations”
  - USPS is covered under the OSH Act

Origin of OSHA Standards

- Consensus standards
- Proprietary standards
- Federal laws already in effect

Origin of OSHA Standards

Consensus Standards:

- Developed by industry-wide standard developing organizations
- American National Standard Institute (ANSI)
- National Fire Protection Association (NFPA)

- The International Organization for Standards (ISO)
  - Over 19,500 standards published in lifetime (1947)
- The American Society of Mechanical Engineers (ASME)
  - Established in 1880
  - ASME B30 for Cranes, Hoists, and Slings

Origin of OSHA Standards

Proprietary Standards:

- Prepared by professional experts within specific industries, professional societies, and associations
- Compressed Gas Association (CGA)
  - Pamphlet P-1, Safe Handling of Compressed Gases
  - Covers the requirements for safe handling, storage, and use of compressed gas cylinders
- American Conference of Governmental Industrial Hygienists (ACGIH) (1938)
  - Several different committees
  - Threshold Limit Values
    - Chemicals Substances
    - Physical Agents

CGA®
Compressed Gas Association
The Standard For Safety Since 1913

est. 1938
ACGIH®
Defining Science for OEHS Experts

Origin of OSHA Standards

Federal Laws:

- Were pre-existing federal laws prior to OSH Act
- Federal/Public Supply Contracts Act (PCA)
  - Minimum wage and max hours
- Federal Service Contracts Acts
  - Increase in wages
- Contract Work Hours and Safety Standards
  - Helped establish overtime pay
- National Foundation on Arts and Humanities Act
  - Helped establish support for humanities and the arts
    - Museums, libraries, and arts


EMPLOYEE RIGHTS
ON GOVERNMENT CONTRACTS
SERVICE CONTRACT ACT (SCA)
PUBLIC CONTRACTS ACT (PCA)
MINIMUM WAGES
FRINGE BENEFITS
OVERTIME PAY
CHILD LABOR
SAFETY & HEALTH
ENFORCEMENT

Horizontal vs Vertical Standards

Horizontal:

- General
- Across the board
- Could apply to any employer in any industry
  - Hazcom
  - Walking and Working Surfaces

HAZARD COMMUNICATIONS

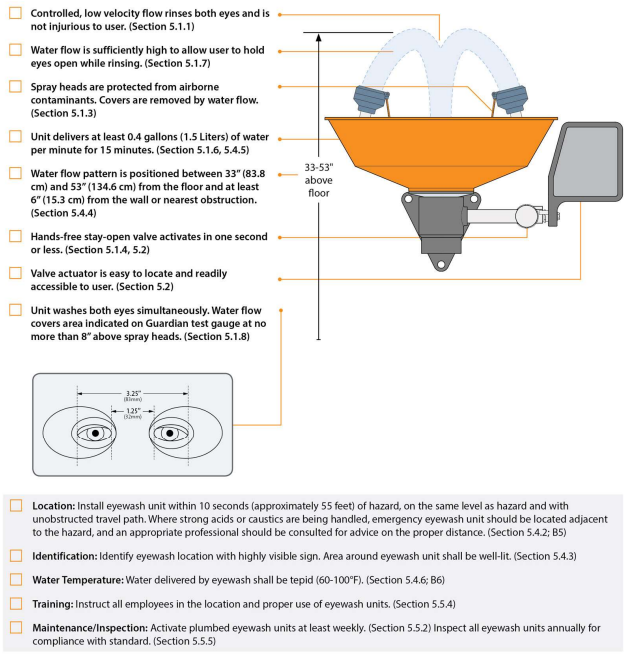
Vertical:

- Specific industries
  - Pulp, paper, and paperboard mills (1910.261)
  - Textiles (1910.262)
  - Sawmills (1910.265)

ANSI

American National Standard Institute:

- First aid kits
- Racking systems
- Eyewash stations
- PPE
- Ladders
- Hoists
- Machine guarding
- Playground equipment
- Helmets
- Rock climbing



NFPA

National Fire Protection Association:

- Works together with OSHA
- OSHA leaned into NFPA to develop electrical standards
  - Long history in place already
- OSHA would struggle keeping up with electrical trends
- NFPA 70E – Developed at OSHA's request
  - Assist with complying with OSHA 1910 Subpart S
  - And OSHA 1926 Subpart K

Overlapping Standards

OSHA vs NFPA:

Category/Class is based on flash point AND boiling point

OSHA

- Category 1
- Category 2
- Category 3
- Category 4

NFPA (National fire Protection Agency)

- Class IA
- Class IB
- Class IC
- Class II
- Class IIIA
- Class IIIB

Overlapping Standards

Flammability vs Category:

- NFPA, GHS, HMIS all have a rating systems for how flammable an item is
- This rating is different its classification and category

Let's use **Acetone** as an example:

Flammability is a 3, which is high.

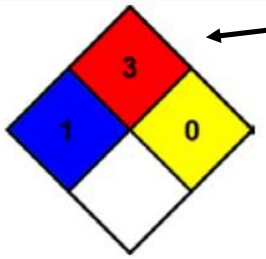
Overlapping Standards

SDS of Acetone

Flammability is a 3, which is high.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

NFPA health hazard	:	1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA fire hazard	:	3 - Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.
NFPA reactivity	:	0 - Material that in themselves are normally stable, even under fire conditions.



NFPA Class is IB or IC

Hazard Rating		
Health	:	1 Slight Hazard - Irritation or minor reversible injury possible
Flammability	:	3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above 100 F. as well as liquids with flash points between 73 F and 100 F. (Classes IB & IC)
Physical	:	0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
Personal protection	:	C C - Safety glasses, Gloves, Synthetic apron

Overlapping Standards

SDS of Acetone:

Acetone is a Category 2, which limits its storage to 120 gallons outside of a flammable cabinet.

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable liquids Category 2	H225	Highly flammable liquid and vapour
Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Specific target organ toxicity (single exposure) Category 3	H336	May cause drowsiness or dizziness

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :

GHS02 GHS07

Overlapping Standards

Limitation of Storage:

OSHA limits the quantity of liquids that can be stored outside of a storage cabinet or inside storage room.

- 25 gallons of Category 1 liquids in containers
- 120 gallons of Category 2, 3, or 4 liquids in containers
- 660 gallons of Category 2, 3, or 4 liquids in a single portable tank

OSHA also limits the number of flammable cabinets in area to 3 or less.

Overlapping Standards

Ammonia Exposure Levels

- OSHA – 50 ppm TWA
  - Time weighted average
  - 100 ppm for four-hour TWA
- NIOSH – 25 ppm REL
  - National Institute for Occupational Safety & Health
  - Recommended exposure limit
- ACGIH 25 ppm TLV
  - American Conference of Governmental Industrial Hygienists
  - Threshold Limit Value
- CAL/OSHA – 25 ppm TWA

OSHA's Impact

- By 1973 OSHA had already helped reduce injury rates by 16 percent
- Fatalities have been cut by 60 percent
- Injury rates have been cut by 40 percent
- Annual death rates rose to 16,000 in 1960s
- Annual death rates average 5,000 currently
- Moral increase

General Duty Clause

Section 5(a)(1):

- "Each employer shall furnish to each of his/her employees' employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his/her employees."

- Employers have the responsibility to provide a safe and healthful workplace that is free from serious recognized hazards.

General Duty Clause

Purpose:

- Ensure companies are keeping employees safe of recognized hazards
- Allow for accountability while rulemaking is established and finalized
  - Walking and Working Surfaces started in 1990 and was completed in 2016
  - Flowchart shows 5-12 ½ years for rulemaking
- Impossible to have standards that would cover all existing hazards

General Duty Clause

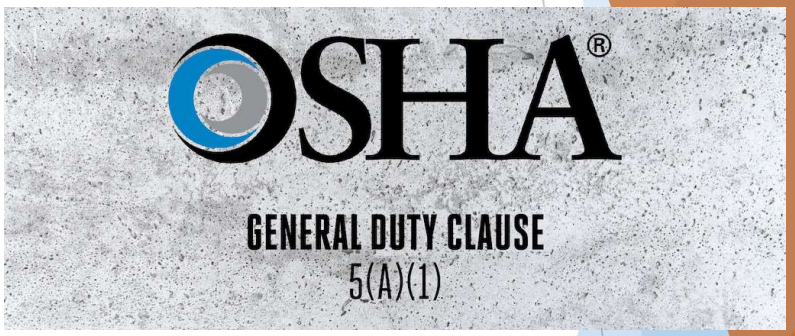
OSHA must prove:

1. The employer failed to keep the workplace free of a hazard to which its employees were exposed.
2. The hazard was recognized.
3. The hazard was causing or was likely to cause death or serious physical harm.
4. A feasible and useful method to correct the hazard was available.

General Duty Clause

Failed to keep workplace free of hazards:

- Prove employees were affected
- Tough on multi-employer worksites
- Establish who is in control
- Who has the responsibility for fixing it?
- Employee interviews



General Duty Clause

Hazard was recognized:

- Injury/illness logs
- Employee complaints
- Workplace rules or procedures
- Near miss reports
- OSHA inspection reports
- Written safety program/safety manual
- Common sense

General Duty Clause

Likely to cause death or serious physical harm:

- Heat stress or stroke
- Still must prove or demonstrate that it put workers at harm
- Field Operations Manual used example of an employee standing at the edge of unguarded floor 25 feet off the ground

General Duty Clause

A feasible or useful method to correct the hazard was available:

- Must identify the existence of a measure(s) that is feasible, available, and likely to correct the hazard
  - Included technical and economic concerns
- Cannot cite threshold limit value or industry guideline
  - Guideline – Safety and Health Program Management Guidelines, Voluntary Protection Program, best work practices
  - Threshold Limit Value – Not used solely
    - Not based on “recommended occupational exposure limit”, such as TLV

General Duty Clause

Challenges:

- Difficult to use when hazard isn't easily defined
  - Hazard threshold for lifting activities
- Most challenged citation due to subjectiveness
- Claimed to be a "work around" for not having an existing standard
  - Such as heat stress

General Duty Clause

Examples: Lift Truck

- Lift trucks had an aluminum accessory that was added to extend the steel lifting arm
  - Alters the center of gravity and load capacity
- Daily and periodic maintenance inspections are not being conducted
- OSHA cited ANSI and Automotive Lift Operation, Installation and Maintenance (ALOIM)
- OSHA also cited the owner's manual and written policy they have in place

General Duty Clause

Examples: Heat

- Employees were exposed to excessive heat when delivering mail to residential and commercial facilities

- OSHA referenced the OSHA-NIOSH info-sheet "Protecting Workers from Heat Illness"
- OSHA suggested:
  - Having a program
  - Training
  - Designate a knowledgeable person onsite
  - Monitoring

General Duty Clause

Common Uses:

- Cell phone use
- Combustible dust hazards
- Ergonomic hazards
- Warehouse racking
  - Posted capacity
  - Not secured
  - Significant damage
- Workplace violence (unmitigated)
- Safety latch on crane
- Risk of lightning strikes

Safety Program

Four Main Components:

- Safety Training
- Audits/Inspections
- Written Programs
- Recordkeeping

Safety Program

Safety Training:

- General Training
  - EAP, PPE, machine guarding, walking and working surfaces, etc.
- Specific Topics
  - LO/TO, Powered Industrial Trucks, Cranes, Fall Protection, Fit Testing
- Job Specific
  - Standard operating procedures, JHA/JSA
- Evaluations
  - Material handling equipment, LO/TO, Fall Harnesses

Safety Program

Audits/Inspections:

- Fire extinguishers
- Sprinkler systems
- Cranes and hoists
- Site inspections
- Facility inspections
  - Department led
  - Running record
  - Safety team

Safety Program

Written Programs:

- General Programs (Horizontal)
  - Emergency Action Plan
  - Accident Reporting
  - Walking and Working Surfaces
  - Corporate Safety Policy
    - Disciplinary Policy
- Job Specific (Vertical)
  - Powered Industrial Truck (forklift)
  - Lockout/Tagout
  - Compressed Gases
  - Overhead Crane
  - Fall Protection

Safety Program

Recordkeeping:

- Training records
- Evaluations
- Noise level results
- Safety Data Sheets
- Chemical exposure testing (PEL)
- OSHA 300 Logs
  - 300 Log
  - 300A
  - 301 (incident report)

OSHA Top 10

Top Violations:

10. Machine Guarding
9. PPE – Eye and Face Protection
8. Fall Protection – Training Requirements
7. Powered Industrial Trucks
6. Lockout/Tagout
5. Scaffolding
4. Respiratory Protection
3. Ladders
2. HazCom
1. Fall Protection – General Requirements
    - Walking and Working Surface/Protection

OSHA Citation Fines

OSHA Fines:

- Increase annually mid January
- 2023 increase is 7.7% (cost of living adjustment)
- Increase in inspectors by 19%
- Fines go to general fund, not back to OSHA

Penalty Type	2022 Max Penalty	2023 Max Penalty
Serious violation	$14,502	$15,625
Other-than-serious	$14,502	$15,625
Willful	$145,027	$156,259
Failure to abate	$14,502/per day	$15,625/per day
Posting requirement	$14,502	$15,625

Environmental 101

BCA ENVIRONMENTAL CONSULTANTS

MARCH 28, 2023

Agenda

1. **Environmental Regulatory History**
2. Air – Permitting, Compliance and Stratospheric Ozone
3. Water – Wastewater and Stormwater
4. Land/Waste – Non-hazardous, RCRA, Used Oil, Universal Waste
5. DOT
6. SPCC and Oil Management
7. EPCRA – Tier II and Form R
8. Spills and Releases

Historical Events

- 1840s – 1850s: Thames River Cleanup
- 1948: Pennsylvania release of SO2 killing 20 people
- 1953, 1962 and 1966: New York Smog Incidents killing over 250 people
- 1960s: Identification of Acid Rain North Hubbard, New Hampshire
- 1966: Pacific Gas and Electric dumping Chromium-6 (Erin Brockovich)
- 1969: Cuyahoga River Fire
- 1972: US banning the use of DDT
- 1976: Seveso, Italy Trichlorphenol (dioxin) release
- 1976: Love Canal on Hooker Chemical Company waste disposal site
- 1979: Three Mile Island
- 1984: Bhopal, India Union Carbide Methyl Isocyanate leak
- 1989: Exxon Valdez oil spill

Recent Events

- 2012: Deepwater Horizon oil spill (Gulf of Mexico)
- 2014: Flint, Michigan drinking water supply
- 2014: Elk River Chemical Spill (West Virginia)
- 2015: Gold King Mine spill (Colorado)
- 2019: Toledo, OH algae blooms
- 2020s: Regulating PFOA and PFAS (accumulation known since 1960s)

Todays Events

- 2023: New Palestine, OH Norfolk Southern Train Derailment
- 2023: 5,000 mile wide Sargassum seaweed blob in Atlantic Ocean

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Clean Air Act (CAA)

- Pass in 1963, rewritten in 1980, amended in 1977 and 1990
- The EPA and the States require industries, business and motor vehicles to reduce emissions
- Established different requirements for clean air and dirty air regions (non-attainment)
- Establishing concepts such as minor and major PSD sources
- Establishing National Ambient Air Quality Standards (NAAQS)
  - Lead
  - PM-10
  - PM 2.5
  - Sulfur Dioxide
  - 8-Hour Ozone

Adjusted over time for continual improvement

Clean Air Act (CAA)

- Establishing “regulated pollutants” by addressing them through:
  - National Ambient Air Quality Standards
  - National Emissions Standards for Hazardous Air Pollutants (NESHAP)
  - Other Lists of air pollutants (HAPs)
    - 1990 CAA amendments - 189 HAPs (Now 187)
  - New Source Performance Standards (NSPS)
  - Other state requirements (IAC 8-1-6, IAC 8-2-9)
  - Protect the ozone layer (40 CFR Part 82)

KENTUCKY

Boone County
8-Hour Ozone (2015)

Bullitt County
8-Hour Ozone (2015)

Campbell County
8-Hour Ozone (2015)

Henderson County
Sulfur Dioxide (2010)

Jefferson County
8-Hour Ozone (2015)

Kenton County
8-Hour Ozone (2015)

Oldham County
8-Hour Ozone (2015)

Webster County
Sulfur Dioxide (2010)

OHIO

Cuyahoga County
8-Hour Ozone (2015)

Geauga County
8-Hour Ozone (2015)

Lake County
8-Hour Ozone (2015)

Lorain County
8-Hour Ozone (2015)

Medina County
8-Hour Ozone (2015)

Morgan County
Sulfur Dioxide (2010)

Portage County
8-Hour Ozone (2015)

Summit County
8-Hour Ozone (2015)

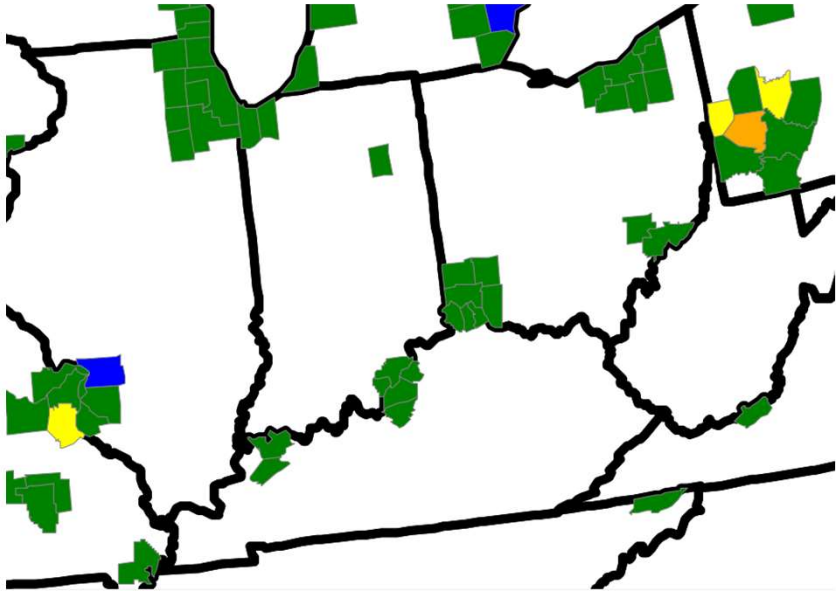
Washington County
Sulfur Dioxide (2010)

INDIANA

Huntington County
Sulfur Dioxide (2010)

Lake County
8-Hour Ozone (2015)

Porter County
8-Hour Ozone (2015)



Nonattainment Areas

Air Permit Classifications

Ohio	Indiana	Kentucky
Title V – PTI/PTO	Title V	Major/Title V
Synthetic Minor – FEPTIO	Fed Enforceable State Op Permit	Conditional Major
Tue Minor – PTIO	Minor Source Operating Permit	Minor/State-Origin
Permit Exempt and PBR	Registration	Registration
	Permit Exempt and PBR	Permit Exempt and PBR

Modification Classifications

Administrative Amendment

A) Exemption – 326 IAC 2-1.1-3

- < 5 TPY PM, PM10, or PM2.5
- < 10 TPY SO2
- < 10 TPY NOx
- < 10 TPY VOC
- < 25 TPY CO
- < 0.2 TPY Pb
- < 1 TPY Single HAP; < 2.5 TPY Total HAP

B) Insignificant Activity – 326 IAC 2-7-1(21)

- < 0.6 TPY or 3.29 lb per day Pb
- < 25 lb per day CO
- < 25 lb per day or 5 lb per hour SO2
- < 15 lb per day or 3 lb per hour VOC
- < 15 lb per day or 5 lb per hour Nox
- < 25 lb per day or 5 lb per hour PM10 or PM2.5

C) Trivial Activities – 326 2-7-1(42)

Modification Classifications

Minor Source Modification

- < 25 TPY and ≥ 5 TPY PM, PM10, PM2.5
- < 25 TPY and ≥ 10 TPY SO2, Nox and VOC
- < 25 TPY and ≥ 5 TPY VOC (using control device to comply with 326 IAC 8)
- < 100 TPY and ≥ 25 TPY CO
- < 1 TPY and ≥ 0.2 TPY Pb

Minor Permit Modification

- Do not violate any applicable requirement
- No significant change to monitoring, reporting or record keeping
- Do not require a change to emission limitation
- Will not establish or change:
  - An emission cap
  - An alternative emission limit
- Are not modifications under Title I of CAA
- Are not otherwise required to be processed as Significant Modification 2-7-1(42)

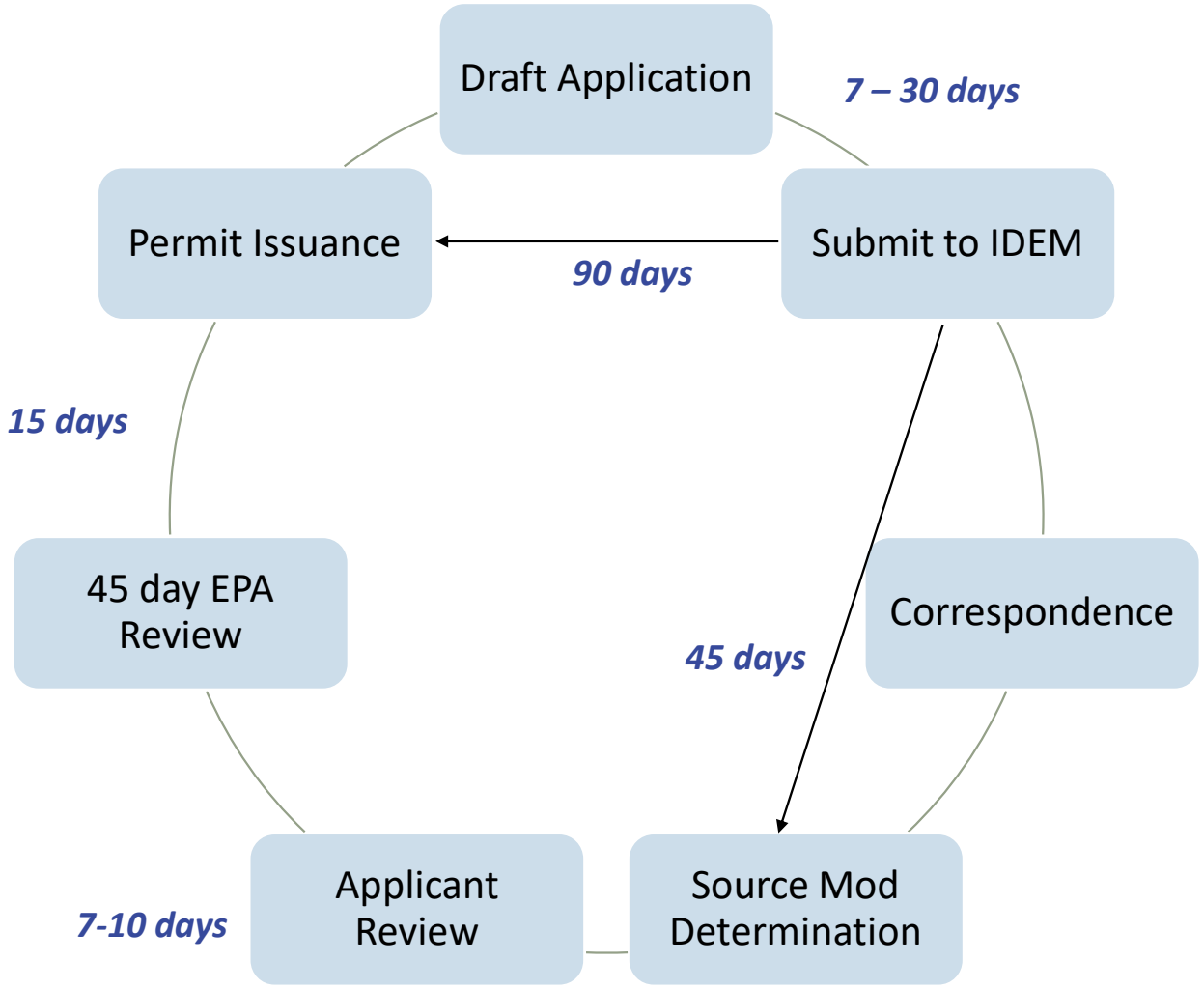
Modification Classifications

Significant Source Modification

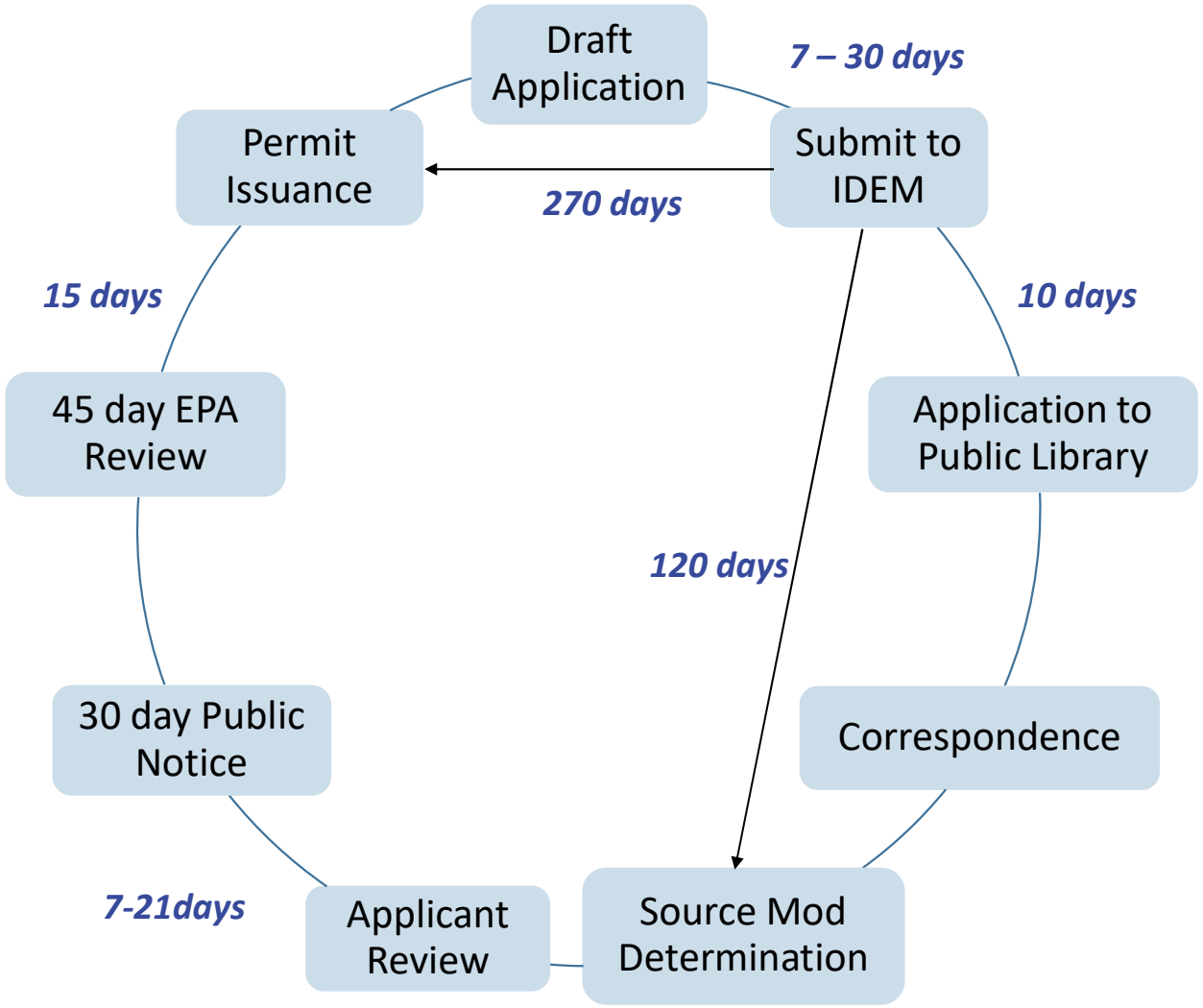
- > 25 TPY PM, PM10, PM2.5
- > 25 TPY SO2, Nox and VOC
- > 25 TPY VOC (using control device to comply with 326 IAC 8)
- > 100 TPY CO
- > 1 TPY Pb

Significant Permit Modification

- Anything that does not quality as an AA or a Minor Permit Modification



Permitting Timelines – TV Minor Modification (IN)



Permitting Timelines – TV Significant Modification (IN)

Mini Case Study
8-1-6 (Coating Plastic Parts)

Key Takeaway:

Evaluate projected growth against existing limits – Run the numbers.

Scenario:

Company A produces a “luxury good”. Incomes are rising (or less threat of decline), economy is growing, and employment rates are down, so production is expected to continue to rise.

Latest quarterly report shows 24.7 tons over the last 12-months at a facility with an 8-1-6 limit of 25 tons per 12 months.

Limited cash and financial philosophy is to keep debt to a minimum

Outcome:

Render 8-1-6 applicable and take a daily weighted average of lb/gal VOC content of materials used, rather than a control device.

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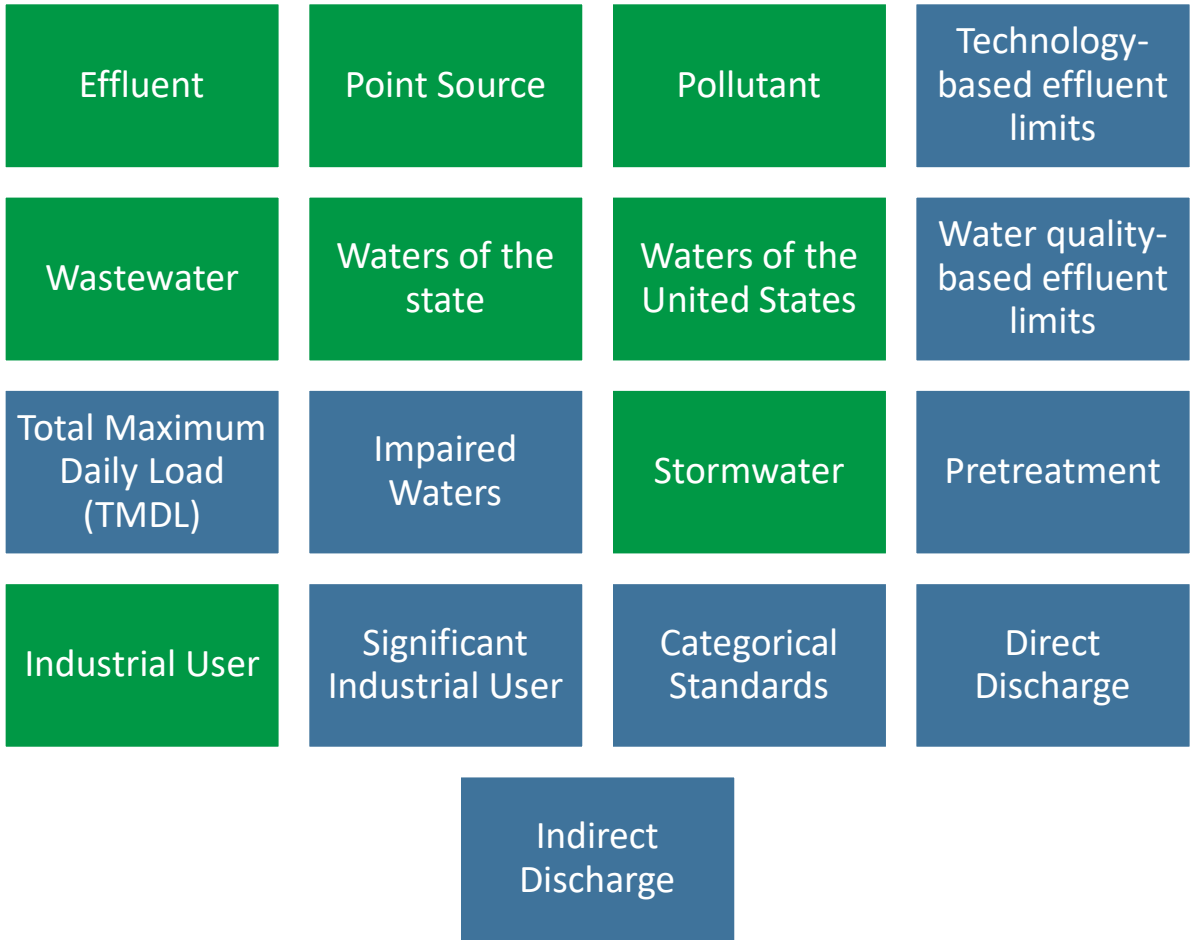
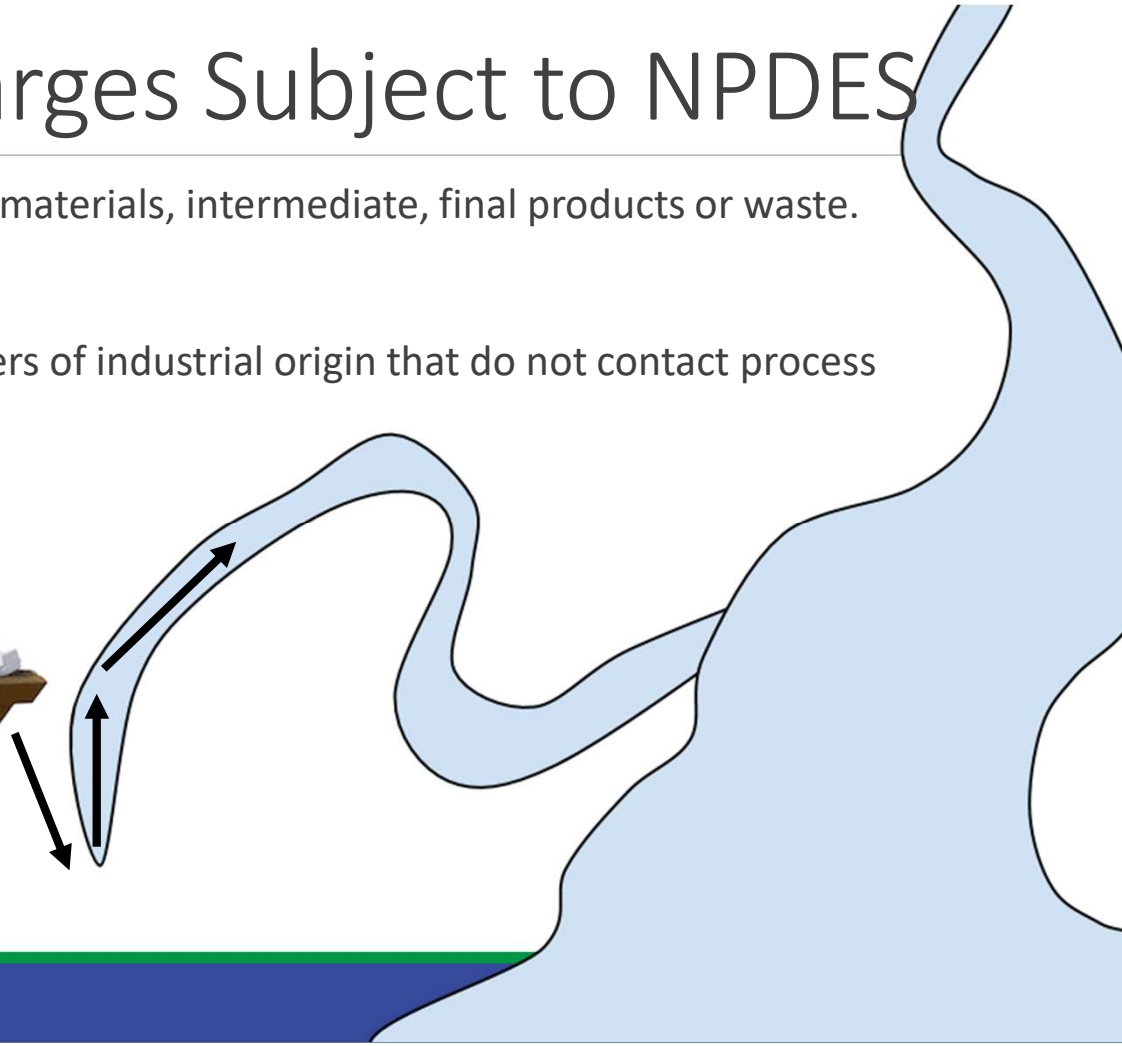
National Pollutant Discharge Elimination System



Examples of Discharges Subject to NPDES

1. Water that comes into contact with raw materials, intermediate, final products or waste.
2. Industrial process water
3. Non-contact cooling water or other waters of industrial origin that do not contact process operations, materials or products
4. Sanitary wastewater
5. Stormwater



Type of TBL	Sources Subject to the TBL	Type of Pollutants Covered
Best Practicable Control Technology Currently Available*	Existing sources which are not POTWs	All pollutants
Best Conventional Pollutant Control Technology (BCT)	Existing sources which are not POTWs	Conventional Pollutants (BOD5, TSS, pH and coliform)
Best Available Technology Economically Achievable (BAT)	Existing sources which are not POTWs	Toxic Pollutants and Nonconventional Pollutants**
Best Demonstrated Control Technology	New Sources, which are not POTWs	All pollutants

*BPT was the initial technology-based requirement for non-POTW sources under the CWA. Over time BCT and BAT have superseded BPT to make the NPDES limits we know today.

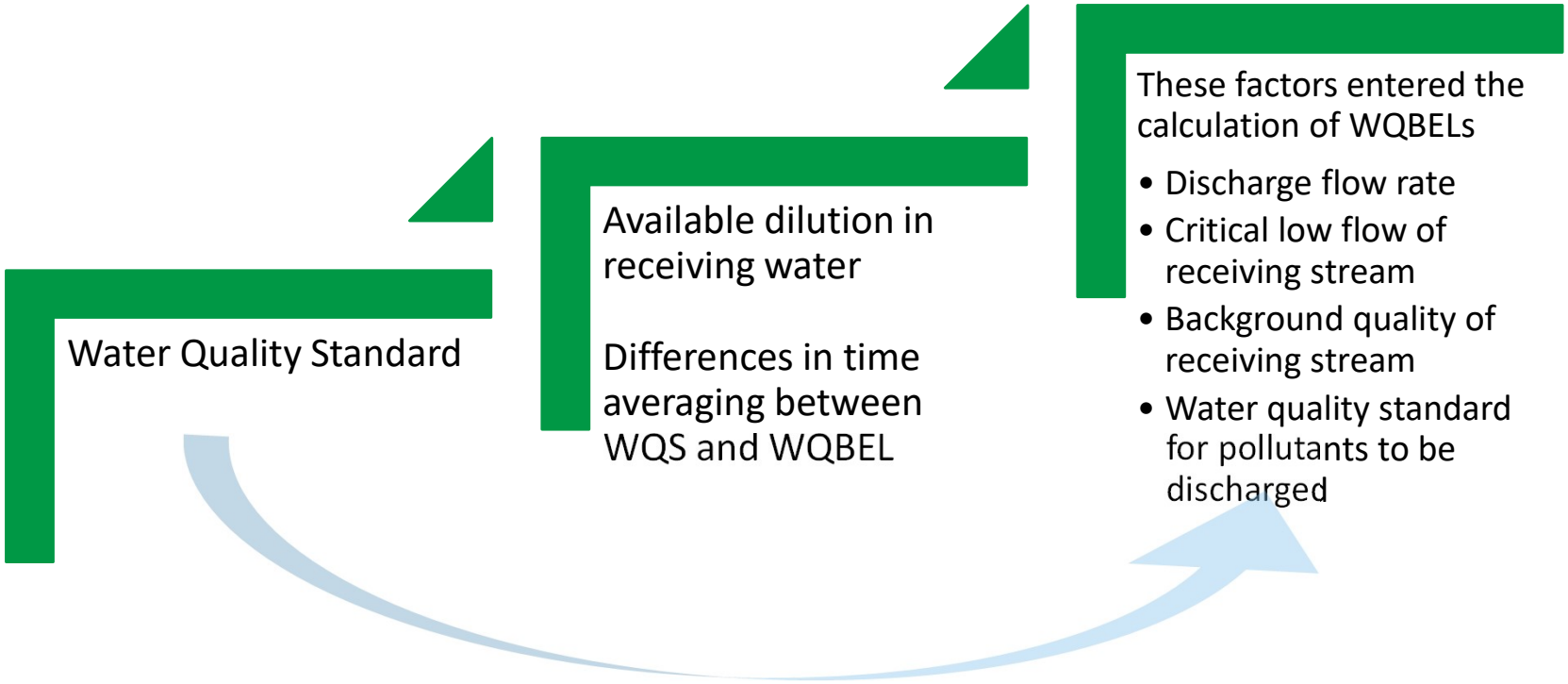
**Toxic pollutants are listed under Section 307 of the CWA. There are over 120 pollutants.

Since the 1970s the EPA has been updating and establishing guidelines to allow states develop more localized technology-based effluent limitations for over 50 industrial categories. These can be found at 40 CFR, Parts 405 and 471

Technology-Based Effluent Limitations – The CWA Minimum

WQBEL effluent limitations are intended to implement and achieve compliance with Water Quality Standards (WQS) of the state….Lots of math and analysis to establish these limit.

COMPLEX!!



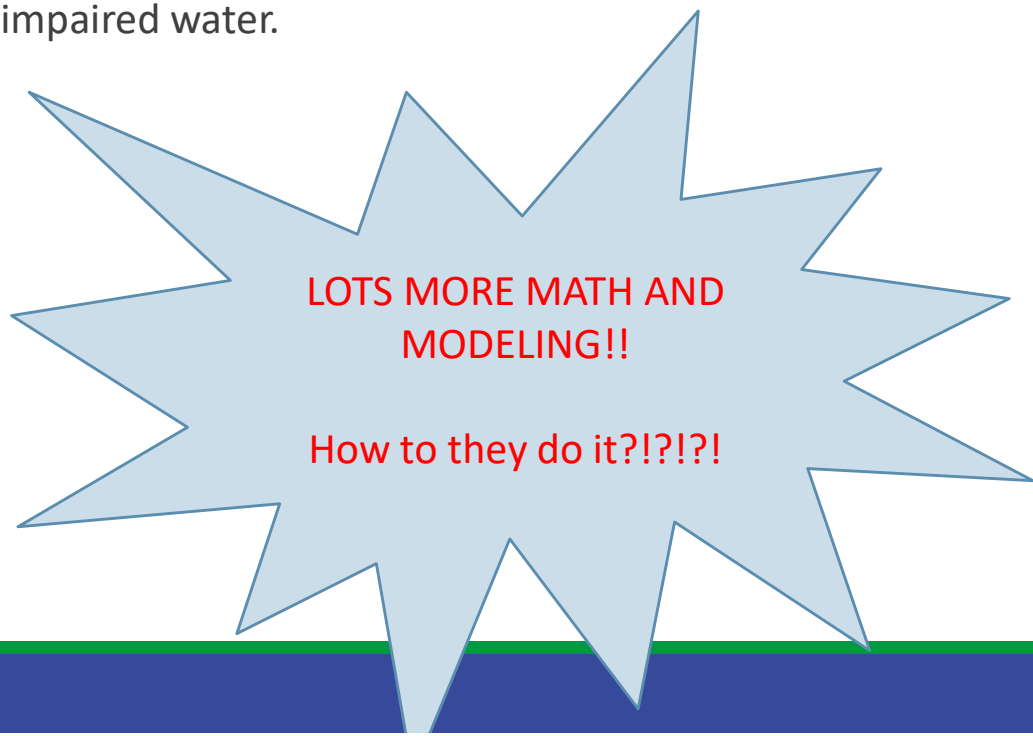
Water Quality-Based Effluent Limitations

Total Maximum Daily Loads

Rivers and streams failing to meet WQS are referred to impaired waters – Section 303(d) of CWA.

States implement plans to allocate allowed pollutant discharges (wasteload allocations) considering non-point discharges to the receiving impaired water.

These resulting limits are referred to as TMDLs.



NPDES Permit Types

1. Individual
2. General Permit
   - Stormwater from Construction
   - Stormwater from Industrial Activity
   - Coal Mining
   - Noncontact Cooling Water
   - Petroleum Products Terminals
   - Sand, Gravel and Dimension or Crushed Stone Operations
   - Several others….

Discharges to POTW

Prohibited Discharges (differ by state and local authority)
Pollutants that create fire or explosion hazards
Corrosive pollutants, particularly those with pH less than 5
Solid or viscous pollutants that may obstruct sewer flows or POTW operation
Any pollutant, even those compatible with POTW, in slug amounts that may overload the POTW
Heat in amounts that might inhibit biological activity at the POTW – temperatures greater than 104° F

Significant Industrial User

1. Any industrial user that discharges an average of 25,000 or more gallons per day
2. Any industrial user subject to Categorical Pretreatment regulations

National Categorical Pretreatment Standards

The intention of the Categorical Standards is to require a level of treatment by the source that is like that required to meet BAT effluent limitations for direct dischargers.

- Aluminum forming
- Coil coating
- Copper forming
- Electroplating
- Glass manufacturing
- Metal finishing
- Ink formulating
- Inorganic chemical manufacturing
- Organic chemicals, plastics and synthetic fibers
- Paint formulating
- Pharmaceutical manufacturing
- Rubber manufacturing

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Hazardous Waste Generator Improvement Rule Process and Schedule

- Rule Signed on October 28, 2016
- Publication in Federal Register – November 28, 2016
- Effective Date – May 30, 2017
- Authorized states go through adoptions and authorization process for more stringent
- Authorized states may choose to pick up less stringent

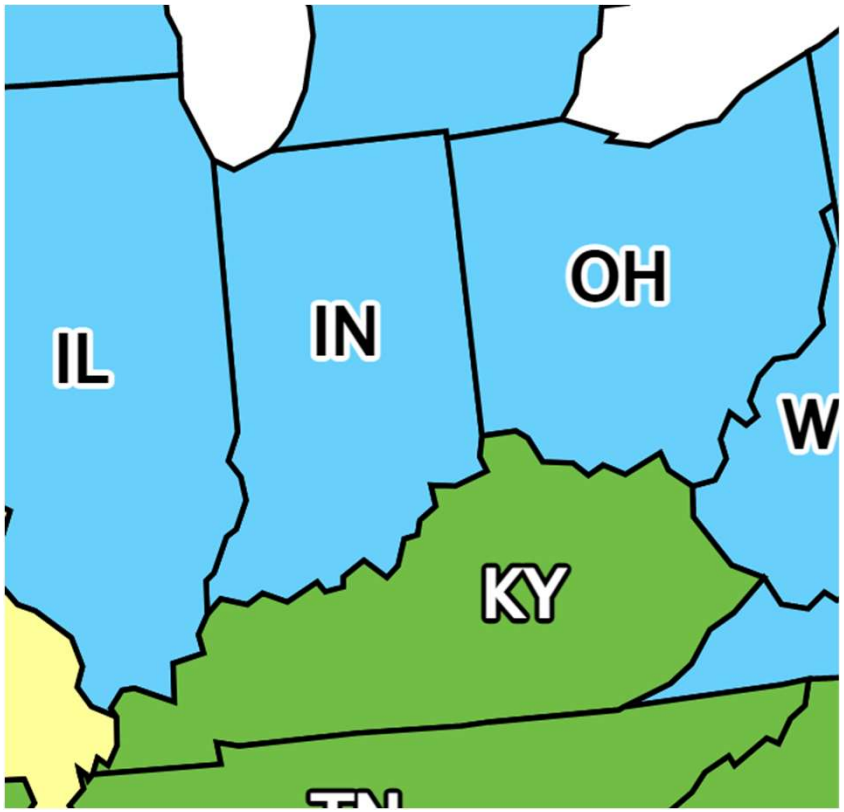
HWGIR Summary

- **Rule Provisions**
  - Reorganization
  - Waste Determinations
  - Waste Counting
  - Consolidation of waste at LQG
  - Episodic Event
  - Marking and Labeling
  - Satellite Accumulation Areas
  - SQG Re-notification
  - Emergency Planning and Preparedness
  - 50 – foot waiver
  - Reporting and Recordkeeping
  - Closure

Goals of the Rule Change

Over 60 changes were made to the HW rule that:

1. Reorganize the regulations to make them more user friendly
2. Provide greater flexibility – cost effective management
    1. Episodic events
    2. VSQG → LQG consolidation
3. Filling in gaps to strengthen environmental protection
4. Clarify certain components and address ambiguities

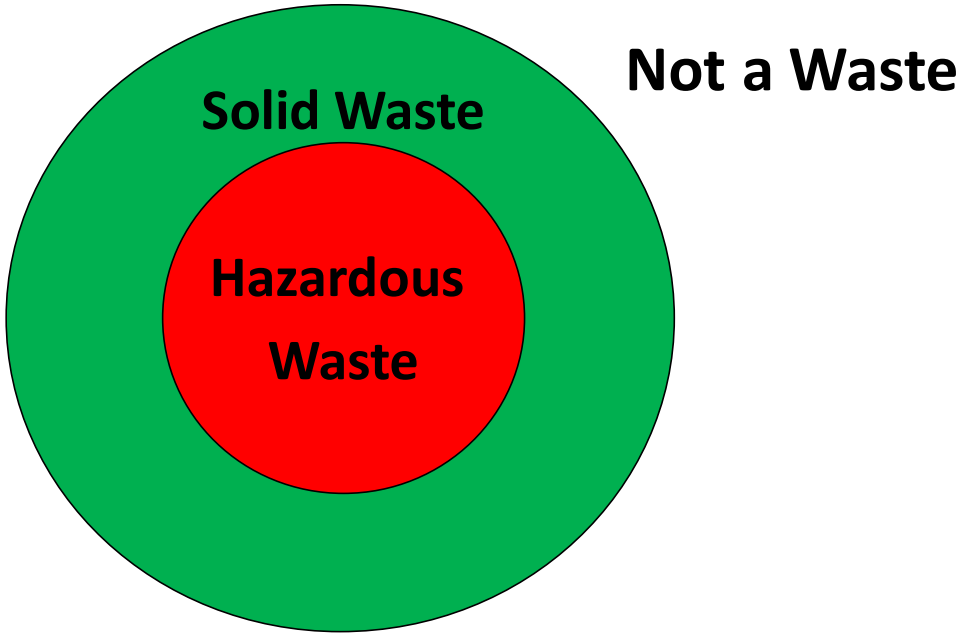


- Authorized
- Adopted
- Administered by EPA Region
- Neither Adopted nor Authorized

#1 Where and what waste is generated?

Definition of a Solid Waste

- Abandoned
- Recycled
- Inherently Waste Like



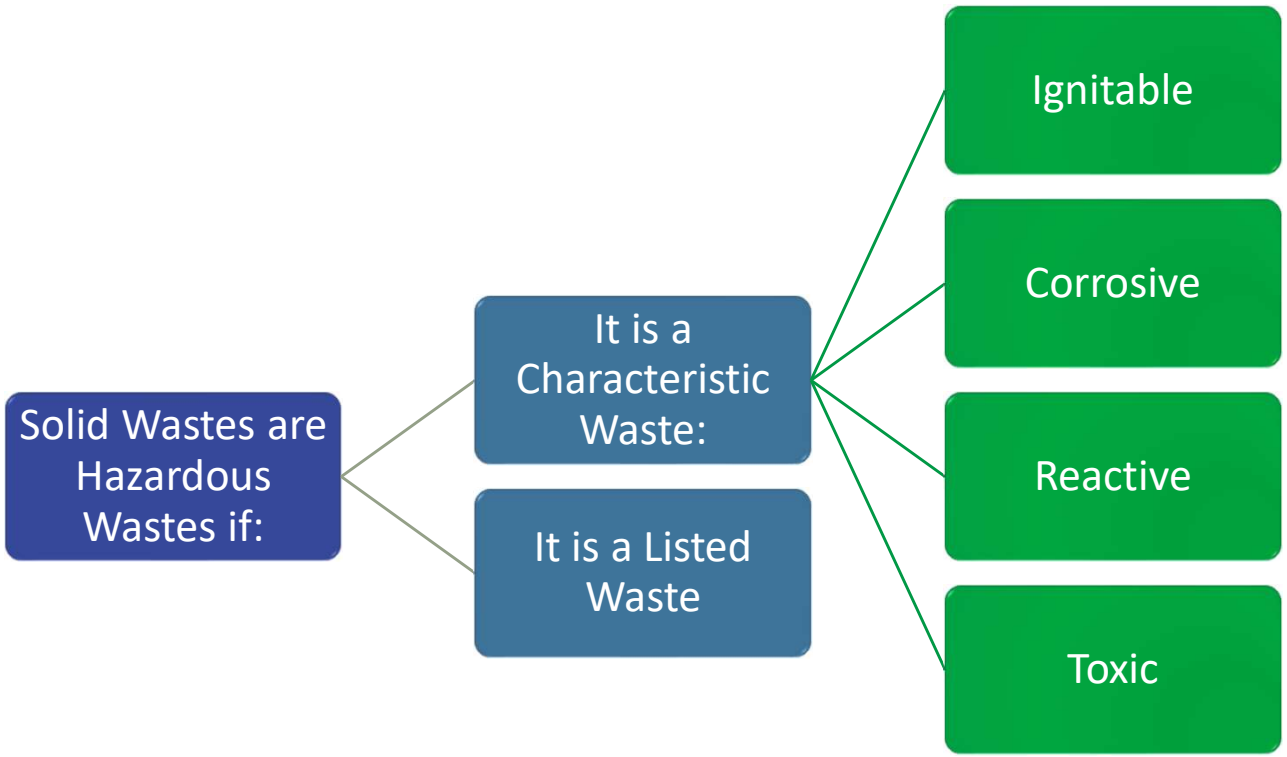
The Universe of Waste

Types of RCRA Generators

Generator Status	Thresholds (per month)	Total HW Generated (tons) *	Percent of Total Waste Generated
VSQGs	<220 lbs	46,000 – 148,000	<1%
SQGs	220 – 2,200 lbs	66,000 – 141,000	<1%
LQGs	<2,200 lbs	35.2 Million	99%

#2 Is the waste hazardous?

Definition of Hazardous Waste



Hazardous Waste Determination 262.11(a)

The hazardous waste determination for each solid waste must be made at the point of waste generation…

RCRA Statute is clear – the term "hazardous waste generation" means the act or process of producing hazardous waste.

Why at the point of generation?

To ensure:

- Proper waste identification
- Proper handling and management from "cradle to grave"

Hazardous Waste Determination 262.11(a)

The hazardous waste determination for each solid waste must be made at the **point of waste generation**, before any dilution, mixing or other alteration of the waste occurs…

- EPA added this language to state their *existing interpretation* that you must characterize your waste before dilution, mixing or alteration
- Alteration of waste: May change waste properties and subsequent handling
  - Example: allow volatile organics volatilize from an uncovered container

Hazardous Waste Determination 262.11(a)

The hazardous waste determination for each solid waste must be made at the **point of waste generation**, before any dilution, mixing or other alteration of the waste occurs, and at any time in the course of its management that it has, or may have, changed its properties as a result of exposure to the environment or other factors that may change the properties of the waste such that the RCRA classification of the waste may change

- Generators must understand chemistry of their wastes
- A SW determined to be non-hazardous at the POG may change while being managed on site through exposure to environment
- Note: the opposite may be true

Does this mean you need to monitor your waste 24/7?

Point of Generation:

Sludge

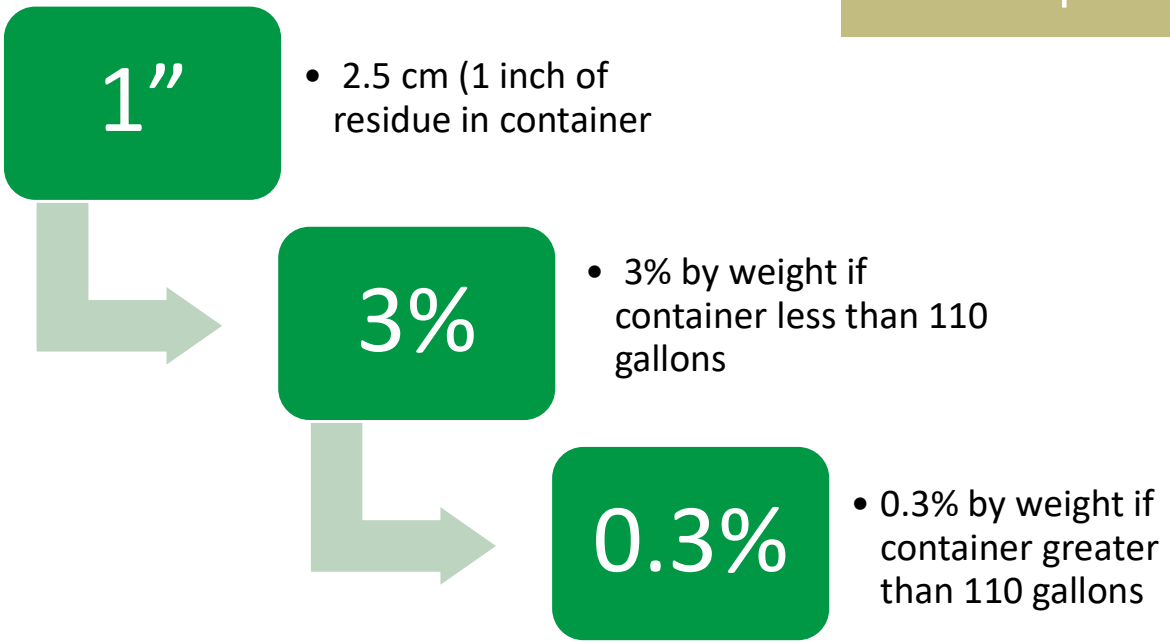
Point of Generation:

Waste Paint

#3 Do we have other non-process wastes?

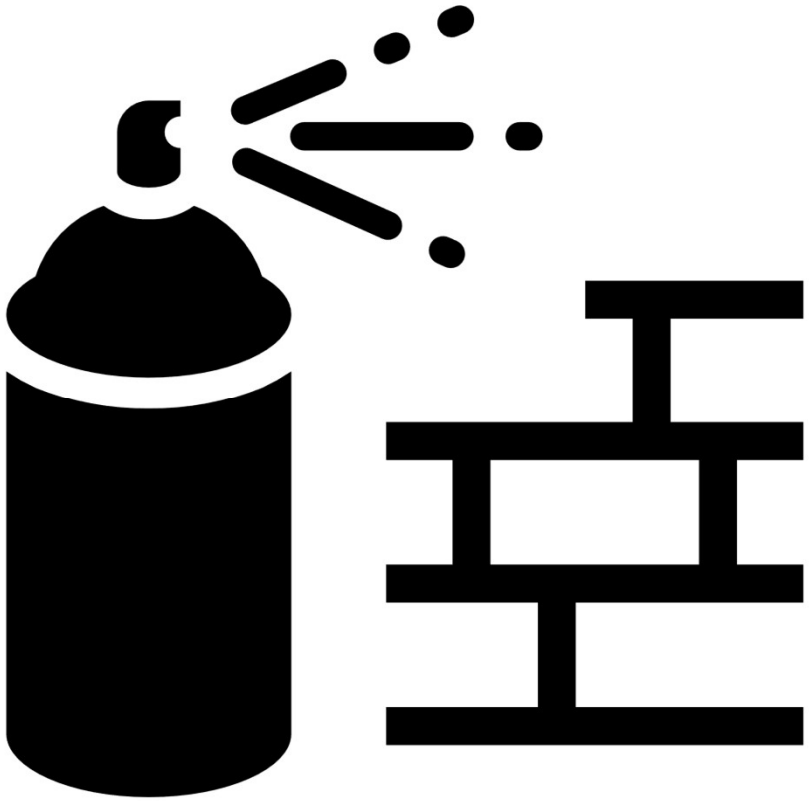
Empty Means

All wastes have been removed that can be removed using common practices



Contaminated Rags

Rags contaminated with a flammable waste must be handled appropriately since the rag may be flammable



Aerosols

A container that has held a hazardous waste that is a **compressed gas** is empty when the pressure is released from the can.

Mixing vs Dilution

Generators can't dilute their hazardous wastes unless it provides a useful and effective contribution (i.e., possess a unique property to remove the hazardous characteristic from the hazardous waste instead of merely diluting it).

#4 How do we handle and manage our hazardous waste and where does it go?

Satellite Accumulation Areas

- Areas near the point of generation and under the control of the operator where waste is accumulated
- This area is before the waste is placed in the central storage area

55 gallons

- Can accumulate up to 55 gallons of waste

Labeling

- Must label with contents and hazards

3 days

- If more than 55 gallons – must move in 3 days

Closed

- All containers closed when not in use


HAZARDOUS
WASTE
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY
[redacted]
ACCUMULATION START DATE 3/22/19
HANDLE WITH CARE!
Only Date Start Accumulation Date When Placed in Central Waste Storage Area

Central Storage Area

- Hazardous Waste **Only**
- Must Be Marked with Words “Hazardous Waste”
- Must comply with Subpart CC “Air Emission Standards”
  - Containers must be managed in a DOT approved container equipped with a tight-fitting cover with no visible gaps, spaces, holes or other openings
- Inspected Weekly
- Incompatible Waste/Containers not stored together
- Adequate aisle space – 18”

Central Storage Area

Must Have Date of Start of Accumulation marked on the drum

Must not be stored more than:

- 90 days for Large Quantity Generators
- 180 days for SQGs

Central Storage Area

#5 How do we get rid of our hazardous waste?

Sign and date manifest (press hard)

Have transporter sign and date manifest

Remove “Generator Copy”

Give the remaining copies to the transporter

Wait for “Generator TSD Copy” to be returned

Check for “Discrepancies

Manifest Distribution and Tracking

What if a Manifest is not Returned?

1

If generator TSD copy is not received within 35 days, find out why and document findings.

2

If a LQG TSD copy is not received in 45 days, send notice with copy of manifest to IDEM and US EPA

Retention Times:

Non HWMs	HWMs
• Shipper – two years • Carrier – one year	• Shipper – three years • Carrier – three years

Shipping Papers

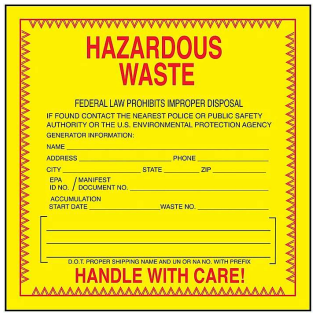
#5 How do what has hazardous waste in it?

Marking and Labeling

Areas affected

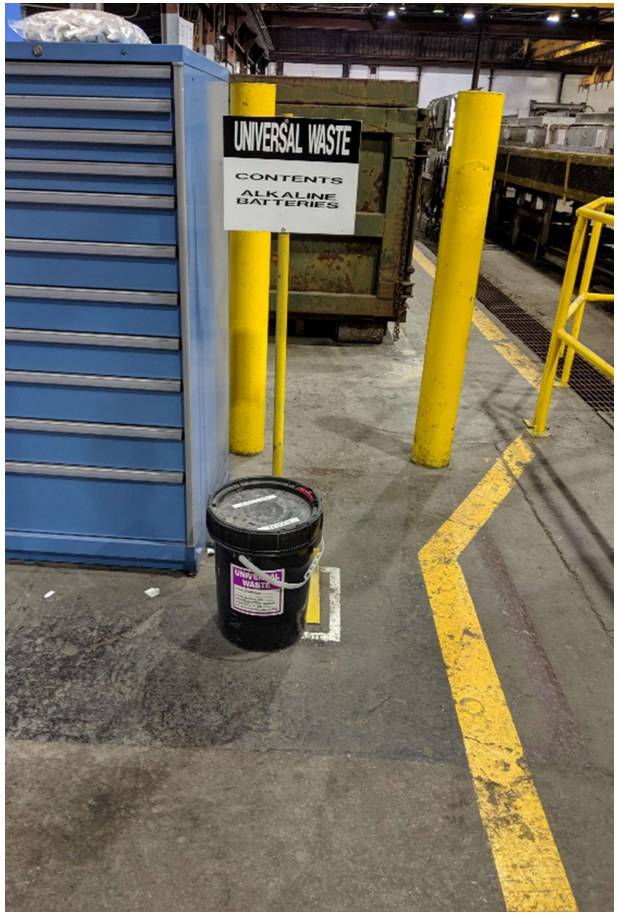
- **Point of Generation**
- Satellite Accumulation Areas
- Central Accumulation Areas
- Transfer facilities consolidating hazardous wastes
- Generator container and tanks storage areas at TSDF

Marking and Labeling



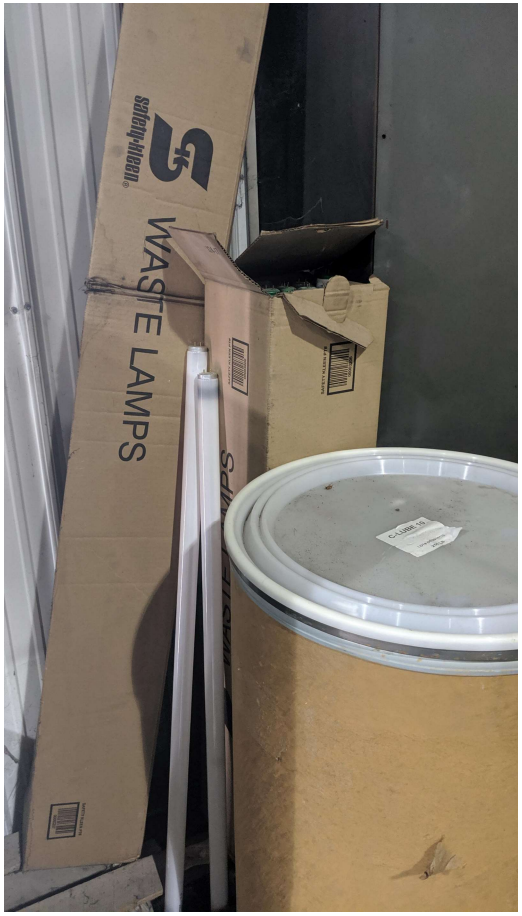
Final Rule

- Containers and tanks must indicate the hazards of the contents
- May use a number of methods
  - DOT HazComm
  - OSHA hazard statement or pictogram
  - NFPA chemical hazards label
  - RCRA characteristic
  - Note: the labels are not required to include the identify of the contents (as proposed)



Universal Wastes

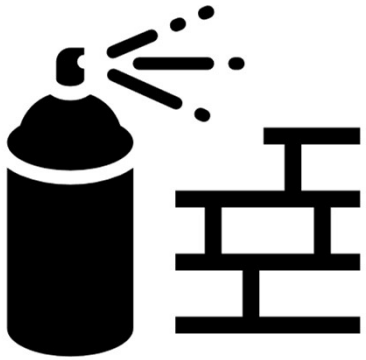
- Waste Batteries that contain cadmium, lead or mercury
- Selected waste pesticides
- Waste mercury-containing lamps (fluorescent light bulbs)
- Aerosol Cans



Universal Wastes

- Management (minimize breakage)
- Labeling/Marking (marked with “Waste Mercury Containing Lamps)
- Storage (no more than one year) - must document storage time by marking start date on box or use other records
- Ship to a facility licensed to process universal wastes

What to do with Aerosols?



1. **Handle as Universal Waste**
   - Use can until no contents remain
   - Store “empty” aerosol cans together in a container marked “Used Aerosol Cans”
   - Follow Universal Waste storage and labeling requirements

2. **Puncture and Manage Hazardous Waste**
   - Puncture and drain the flammable contents from the can.
   - Collect flammable liquids in a closed hazardous waste container
   - Dispose of empty aerosol cans in metal recycling

Agenda

1. Environmental Regulatory History
2. Air – Permitting, Compliance and Stratospheric Ozone
3. Water – Wastewater and Stormwater
4. Land/Waste – Non-hazardous, RCRA, Used Oil, Universal Waste
5. **DOT**
6. SPCC and Oil Management
7. EPCRA – Tier II and Form R
8. Spills and Releases
9. Other
10. Resources

Hazardous Material Table

Objectives:

- Identify information about hazardous material
  - Hazard class
  - ID number
  - Packaging group
  - Level codes
  - Other provisions
- Identify proper shipping name
- Define a hazardous substance and reportable quantity

Hazardous Material Regulations

Hazardous Substance is:

- Listed in the HMT
- It is in a quantity (single package) that exceeds the RQ

Material Name	Reportable Quantity (lb)
Toluene	1000
Xylene	100

40 CFR 172.101 Table 1 of Appendix A Hazardous Materials

Or the List of Lists

Hazardous Material Table

Columns 1-5 contain basic information that is required on the shipping paper document or the hazardous waste manifest, if required

Packaging Groups:

- I = Great Danger (PG I)
- II = Medium Danger (PG II)
- III = Minor Danger (PG III)

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	PG (5)
	Toluene	3	UN1294	II
A, W	Rags, oily	4.2	UN1856	III
G	Flammable Liquids, n.o.s	3	UN1993	I
	Paint or Paint Related Materials	8	UN3066	II
D, G	Hazardous waste, liquid n.o.s	9	NA3077	III
	Aerosols, flammable, (each not exceed 1L capacity)	2.1	UN1950	

40 CFR 172.101 Hazardous Materials Table

Pre-Transport Requirements

Packaging

Must use DOT approved drums and totes

Labeling

Must apply DOT approved label corresponding to contents

RQ, UN1263, Waste Paint Related Material, 3, PGII, RQ (D001)

Marking

Must have a completed "Hazardous Waste" marking with

- generator information
- manifest number
- DOT shipping information
- Accumulation start date

Placards

Must have available a DOT placard for the material being shipped

Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	PG (5)	**Label Codes (6)**
Toluene	3	UN1294	II	**3**
Rags, oily	4.2	UN1856	III	**4.2**
Flammable Liquids, n.o.s	3	UN1993	I	**3**
Paint or Paint Related Materials	8	UN3066	II	**8**
Hazardous waste, liquid n.o.s	8	NA3077	III	**8**
Aerosols, flammable, (each not exceed 1L capacity)	2.1	UN1950		**2.1**

Hazardous Material Table

COLUMNS 6 IDENTIFIES HAZARD WARNING LABELS

Marking and Labeling

HazComm is more general

Hazard Label
General Requirements:

- Durable, *in English*, and printed or affixed to the surface of a package or a label, tag or sign
- Displayed on a background sharply contrasting color
- Unobscured by labels or attachments
- Located away from any other marking, such as advertising, that could substantially reduce the hazardous materials marking's effectiveness


KEEP FROM FREEZING
11035002 Gardobond Additive H 7302
GARDACID P 4432

Shipping Papers

Symbols (1)	Hazardous materials descriptions and proper shipping names (2)	Hazard class or Division (3)	Identification Numbers (4)	PG (5)
	Toluene	3	UN1294	II
A, W	Rags, oily	4.2	UN1856	III
G	Flammable Liquids, n.o.s	3	UN1993	I
	Paint or Paint Related Materials	8		
D, G	Hazardous waste, liquid n.o.s	9		
	Aerosols, flammable, (each not exceed 1L capacity)	2.1		

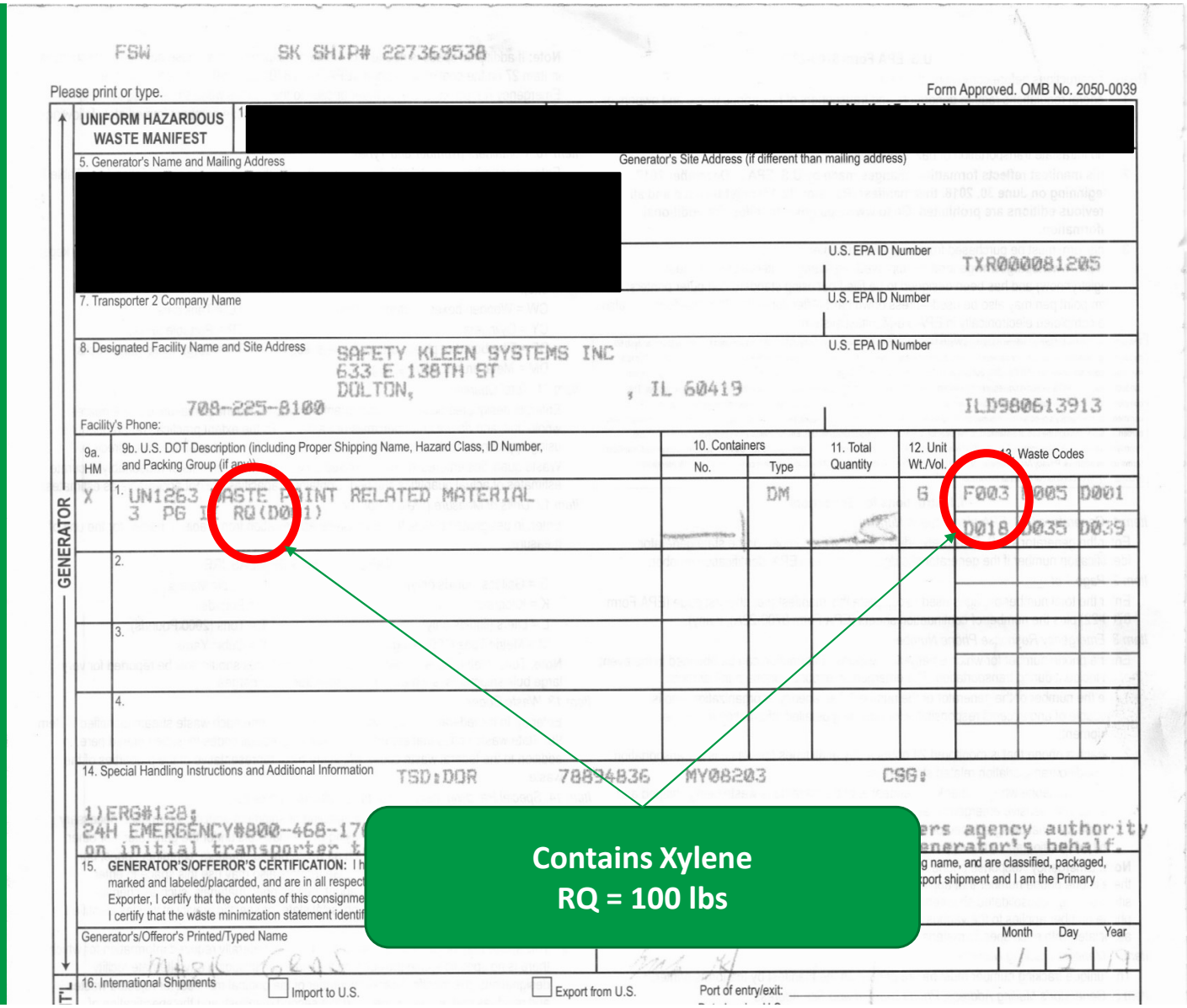
[40 CFR 172.101 Hazardous Materials Table]

Columns 1-5 contain information for the shipping paper

All Descriptions **must** include:

- Basic Infomration (ISHP, HMT 2-5)
  - **I**dentification Number
  - Proper **S**hipping Name
  - **H**azard Class
  - **P**ackaging Group
- Total Quantity
- Number of types of packages

Waste Manifest - Outbound



FSW SK SHIP# 227369538

Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

[redacted]

5. Generator's Name and Mailing Address [redacted]

Generator's Site Address (if different than mailing address)

U.S. EPA ID Number TXR000081205

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address SAFETY KLEEN SYSTEMS INC
633 E 138TH ST
DOLTON, , IL 60419

U.S. EPA ID Number ILD980613913

Facility's Phone: 708-225-8100

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. UN1263 WASTE PAINT RELATED MATERIAL 3 PG II RQ(D001)		DM		G	F003 D005 D001 D018 D035 D039
	2.					
	3.					
	4.					

GENERATOR

14. Special Handling Instructions and Additional Information TSD:DOR 78834836 MY08203 CSG:

1)ERG#128;
24H EMERGENCY#800--468--17
on initial transporter t

ers agency authority
enerator's behalf.

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I h
marked and labeled/placarded, and are in all respec
Exporter, I certify that the contents of this consignme
I certify that the waste minimization statement identif

g name, and are classified, packaged,
port shipment and I am the Primary

Generator's/Offeror's Printed/Typed Name Month Day Year 1 2 17

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

T'L

Contains Xylene
RQ = 100 lbs

Agenda

1. Environmental Regulatory History
2. Air – Permitting, Compliance and Stratospheric Ozone
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4. Land/Waste – Non-hazardous, RCRA, Used Oil, Universal Waste
5. DOT
6. **SPCC and Oil Management**
7. EPCRA – Tier II and Form R
8. Spills and Releases

SPCC and it's Purpose

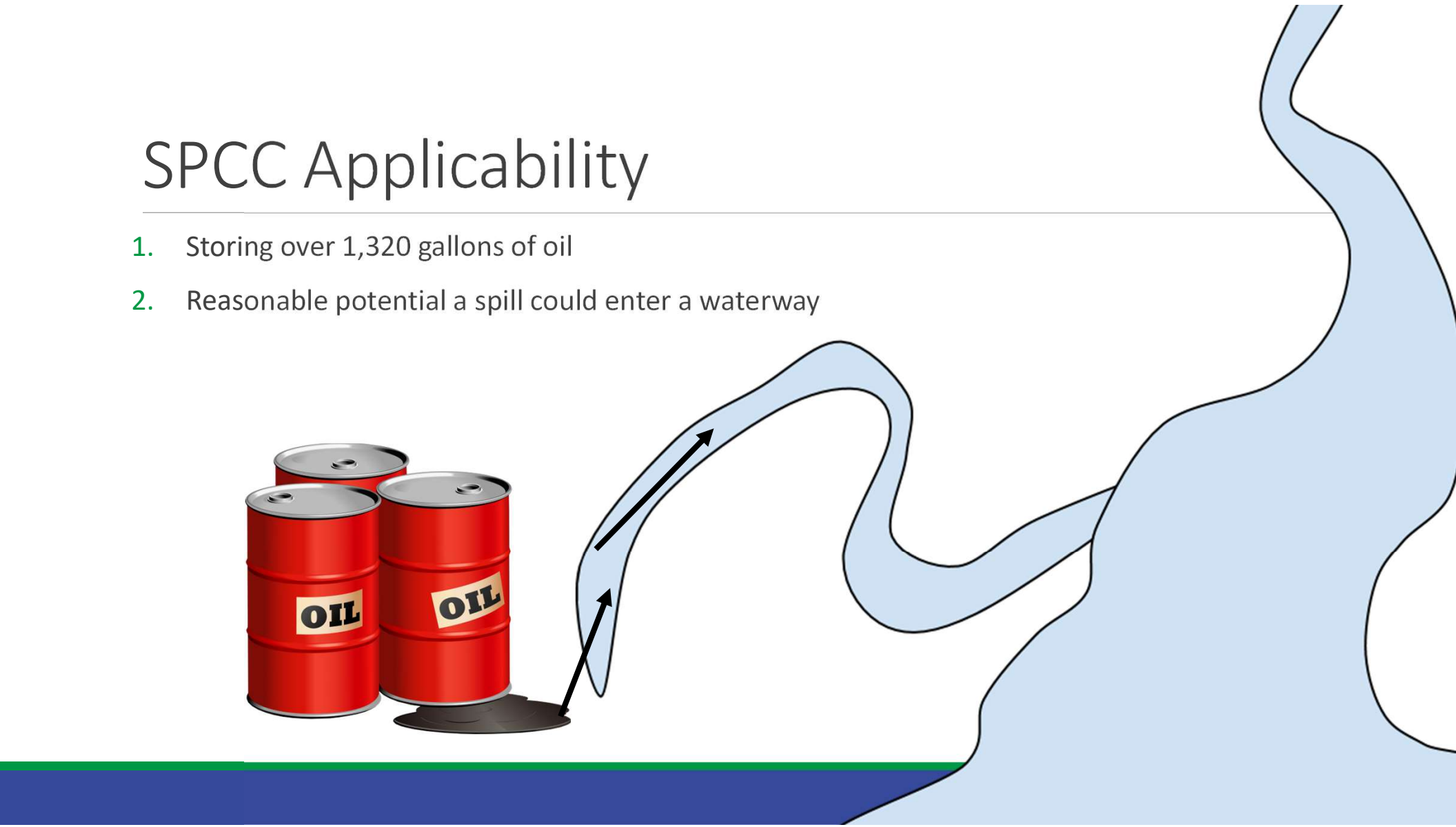
Provide oil spill prevention measures

Prepare facility to respond safely, effectively, and timely to mitigate impacts of a spill

Applies to *oil and oil related material*

SPCC Applicability

1. Storing over 1,320 gallons of oil
2. Reasonable potential a spill could enter a waterway



SPCC Requirements

- Routine Inspections
- Annual Technical Inspections for applicable Aboveground Storage Tanks (ASTs)
- Annual training on SPCC and spill response
- Integrity Testing for Above Ground Storage Tanks (ASTs) (SP001 or API 653)
  - Exclusions for oil filled equipment such as hydraulics and transformers

Inspection Applicability

- Shop-Built/Fabricated AST – Horizontal or Vertical, Single or Double Walled
- Steel Diked AST – Open or Closed
- Concrete Exterior AST
- Field-Erected AST – Limited Size
- Portable Containers

- Category 1 = Spill Control and Continuous Release Detection Method
- Category 2 – Spill Control
- Category 3 = No Spill Control

Inspection Matrix AS Type and Size (gal)		Category 1	Category 2	Category 3
Shop/Fabricated AST	0 – 1,100	P	P	P, E and L (10)
	1,101 – 5,000	P	P, E and L (10)	P, E and L (5), I (10) Or P, L (2), E (5)
	5,001 – 30, 000	P, E (20)	P, E (10), I (20) Or P, E (5), L (10)	P, E and L (5), I (10) Or P, L (1), E (5)
	30,0001 – 75,000	P, E (20)	P, E and L (5), I (15)	P, E and L (5), I (10)
Portable Containers		P	P	P

P = Periodic inspections E = Formal External I = Formal Internal L = Leak test

Agenda

1. Environmental Regulatory History
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8. Spills and Releases

Physical	Health
Flammable	Skin corrosion or irritation
Pyrophoric	Acute toxicity
Oxidizer	Respiratory or skin sensitization
Organic peroxide	Eye damage or irritation
Explosive	Simply Asphyxiant
Gas under pressure	Carcinogenicity
Combustible dust	Specific target organ toxicity
Emits flammable gas when in contact with water	Reproductive toxicity
Self-reactive	Germ cell mutagenicity
Self-heating	
Corrosive to metal	
Hazard not otherwise classified	

SARA 312: Tier II

Storage of materials that exhibit Physical and Health Hazards (GHS)

SARA 312 Tier II Thresholds

Rule of Thumb: Storage of materials in excess of 10,000 pounds at any one time and materials exhibit a hazard property or are on the List of Lists

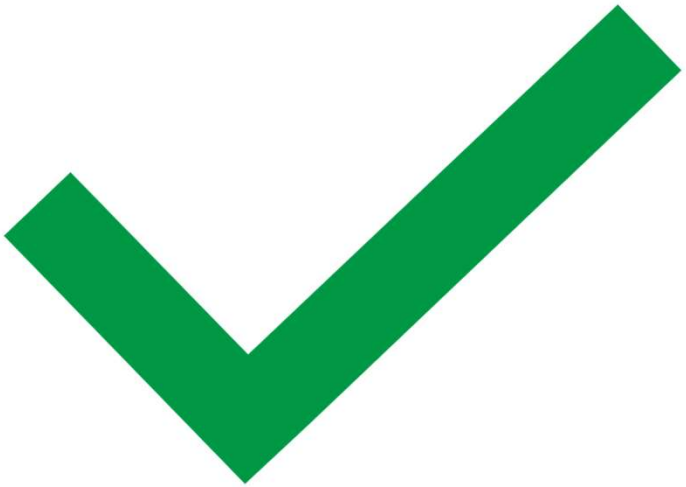
However, some materials identified as an Extremely Hazardous Substance (EHS), such as sulfuric acid, have a reportable quantity of 500 pounds

SARA 313 Form R

To determine if your facility must prepare a Form R report ask:

- Is your SIC code included in the list covered by EPCRA
- Does your facility employ 10 or more employees
- Does your facility manufacture (including importing), process, or otherwise use EPCRA Section 313 chemicals
- Does your facility exceed any applicable thresholds of 313 chemicals
  - 25,000 lbs/year for manufacturing
  - 25,000 lbs/year for processing
  - 10,000 lbs/year for otherwise use

Answering "NO" to any of these means you are not required to evaluate applicability



SARA 313 Article Exemption

Definition of "Article“: An article is a manufactured item

1. Which is formed to a specific shape or design during manufacture;
2. Which has end use functions dependent in whole or in part upon its shape or design during end use; and
3. Which does not release a toxic chemical under normal conditions of processing or use of that item at the facility or establishments.

Agenda

1. Environmental Regulatory History
2. Air – Permitting, Compliance and Stratospheric Ozone
3. Water – Wastewater and Stormwater
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5. DOT
6. SPCC and Oil Management
7. EPCRA – Tier II and Form R
8. **Spills and Releases**

Was a Regulated Substance Released?

Generally include hazardous substances, hazardous materials, hazardous wastes and petroleum

First need to determine if the substance is described in one of these:

1. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
2. Resource Conservation and Recovery Act (RCRA)
3. Emergency Planning and Community Right-To-Know Act (EPCRA)
4. Toxic Substances Control Act (TSCA)
5. Clean Water Act (CWA)
6. Indiana Spill Rule – Oil and Objectionable Substances

Has a Reportable Quantity Been Released?

List of Lists

The Federal Lists include Reportable Quantities (RQ)

Where no RQ is listed – default is one (1) pound

Any release equal to or greater than the RQ must be reported

The quantity released is measured over a 24-hour period, but once the RQ is reached – it must be reported immediately

STATUTE	RELEASES TO AIR	SPILLS TO LAND	SPILLS TO WATER	TRIGGER QUANTITY	TYPE OF SUBSTANCE	TIMING FOR VERBAL	TIMING FOR WRITTEN
CAA	Yes			Threshold Quantity	Toxic Substance 40 CFR 68.130	Emergency Response Program	Emergency Response Program
				Permit Conditions	Permit Conditions	Promptly	Semi-annual Report
CERCLA	Yes	Yes	Yes	RQ in 40 CFR 302.4	Hazardous Substance 40 CFR 302.4	Immediately – 15 minutes	
CWA			Yes	• Oil sheen • Sludge • Violation of water quality standard • 40 CFR 355	Oil	Immediately	
				Permit Conidtions	Hazardous Substance 40 CFR 117.3	Within 24 hours	

Statute	Releases to Air	Spills to Land	Spills to Water	Trigger Quantity	Type of Substance	Timing for Verbal	Timing for Written
EPCRA	Yes	Yes	Yes	RQ in 40 CFR 355 App. A and B	EHS 40 CFR 355.2	Immediately; Within 15 minutes	20 days
				RQ in 40 CFR 302.4	Hazardous Substance 40 CFR 302.4	Immediately; Within 15 minutes	
RCRA	Yes	Yes	Yes	Contingency Plan	Characteristic or Listed HW 40 CFR 261	Immediately	15 days
Indiana Spill Rule		Yes	Yes	• If state waters damaged • Specific reqs. As listed	• Petroleum • Haz Substance • EHS • Objectionable Substance	Within 2 hours	If required by IDEM
TSCA		Yes	Yes	Spill 50 ppm or greater to water	PCBs	Shortest time possible after recovery	Must be submitted
				1 pound or greater		Immediately	

Others Topics

- Green House Gas
  - EPA GHG Reporters
- Protection of Stratospheric Ozone
  - Cornell Law 40 CFR 82
  - EPA Stratospheric Ozone
- Water Withdrawal (10,000 gallons per day)
  - Kentucky
  - Ohio
  - Indiana
- Drinking Water
  - ***Non-Transient Non-Community Water System*** **(NTNCWS)**: A public water system that regularly supplies water to at least 25 of the same people at least six months per year. Some examples are schools, factories, office buildings, and hospitals which have their own water systems.
  - Kentucky
  - Ohio
  - Indiana

Others Topics

- X-rays and Isotopes
  - Source Material registration with Nuclear Regulatory Commission and state Agency (Dept. of Homeland Security)
  - Cabinet x-rays registered with Health Department
- Facility Response Plan
  - EPA FRP
- Toxic Substances Control Act
  - EPA TSCA

Biographical Information

***Facilitator*: Katherine (Kathy) Wiedeman**
Director of Environmental, Health & Safety
ND Paper, 7777 Washington Village Dr., Suite 210, Dayton, OH 45459
937-528-3843 Katherine.Wiedeman@us.ndpaper.com

Kathy has over 25 years of experience in the paper industry and has worked in multiple aspects of the environmental, health and safety field, including safety leadership, wastewater and landfill operations, air compliance and permitting, solid waste management, process improvement and sustainability.

She began her career at the Mead Chillicothe paper mill in 1997 as a Staff Engineer and progressed to Environmental Manager in 2001. In 2006, Kathy was promoted to Director EH&S for Glatfelter's Ohio Operations, taking on expanded responsibilities in the areas of safety and health. She recently became the Director of Environmental, Health and Safety for ND Paper. Established in the U.S. in 2018, ND Paper is a wholly-owned subsidiary of Nine Dragons Paper (Holding) Ltd and has a regional office in Dayton.

She has a Bachelor's Degree in Mechanical Engineering from the University of Dayton and currently lives in the Dayton area.

Josh Schoenenberger, Vice President, Safety Management Services Inc.

Josh is the Vice President of Safety Management Services and has been with the company for 7 years. Beyond helping to manage the company, he takes enjoys and takes pride in writing and providing trainings and written safety programs. He is committed to helping their clients meet OSHA requirements and create a safe and healthful workplace. His focus is to assist companies with safety audits, training, written programs, and recordkeeping.

Tony DeMarco, Vice President of Consulting Services
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Tony DeMarco has served as Vice President of Consulting Services of BCA Consultants since 2016 and prior to that was a Project Manager at BCA since 2010. Tony's background is rooted in EHS compliance; therefore, understands how to roll compliance activities into EHS and Energy management systems for commercial and manufacturing facilities. During his time at BCA, Tony has been involved with a wide range of environmental, health, safety and energy related work. This includes weekly ISO 14001 and 45001 internal audits at a 5,000-employee heavy industry facility and providing Lead Auditor Training since 2018.