

“Where’s the Waste?, and Where are you Storing It?”

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Container Management.



What is a container?

Definition of a Container:

- 40 CFR 260.10 Subpart B:

A container mean any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

Can you show me some examples????

Most Common Container found:



Other Containers Include:



Other Containers Include:



Other Containers Include:



Other Containers Include:



Other Containers Include:

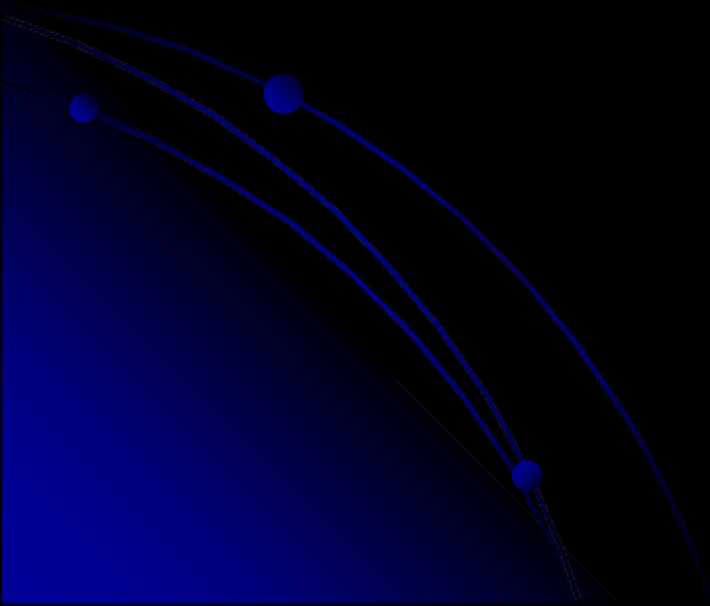


Other Containers Include:



Other Containers Include:

- Boxes (various sizes and materials)
- One cubic yard heavy duty cardboard boxes with a plastic liner (gaylord boxes)



Is this a tanker or container?



Hazardous Waste Storage Area



Why were Container Management / Storage Regulations created?

May 19, 1980 preamble

- to minimize emissions of volatile wastes;
- help protect ignitable or reactive waste(s) from sources of ignition or reaction;
- Help prevent spills; and
- Reduce the potential for mixing of incompatible waste and direct contact of facility personnel with waste(s)

Suggests that containers are closed with lids or some other closure device when adding or removing the waste from the container.

When an inspector visits a hazardous waste storage area, what are we going to look for?

That depends on the type of generator that you are:

- + Large Quantity Generator (LQG)
- + Small Quantity Generator (SQG)
- + Conditionally Exempt Small Quantity Generator (CESQG)

However, ALL Generators MUST
comply with
40 CFR 262.30

Before transporting hazardous waste or offering hazardous waste for transportation offsite, a generator must package the waste in accordance with applicable USDOT regulations, on packaging, under 49 CFR parts 173, 178, and 179.

49 CFR 173 – Covers the General requirements for Shipments & Packaging of Hazardous Materials / Wastes.

49 CFR 178 – Covers the “Specifications for the Packaging” that the hazardous material/waste will be shipped in.

49 CFR 179 – Covers the “Specifications for Tank Cars”

(These to be covered under Transportation Section of the seminar!!)

A Hazardous Waste Storage Area is:

An area where waste accumulation container(s) are of such distance from the process generating the waste, or in such a location, that it is **NOT** routinely within the control and cognizance of the operator of the process.

Examples:

- a) Location of the accumulation container in another room where intervening walls or partitions block it from the view of the process operator for significant periods of time.
- b) Place the container in areas subject to other plant activities not under the control of the process operator where the risks of release or mismanagement may be greater.
- c) Location of the waste storage container outside a building in which the waste is generated may be regarded as placing it beyond the routine attention of the process operator, and therefore not legitimate satellite accumulation.

Accumulation Time Limitations

CESQG's – NONE, as long as Hazardous Waste in storage does not exceed 1,000Kg, and maintain CESQG waste generation rates (<100 Kg/220 lbs/@30 gal. per mo.)

SQG's – must manifest/ship Hazardous Waste offsite within 180-days of being accumulated onsite (40 CFR 262.34(d))

LQG's – must manifest/ship Hazardous Waste offsite within 90-days of being accumulated onsite (40 CFR 262.34(a))

Exceptions to Accumulation Time Limitations:

- 40 CFR 262.34(e) –

If you are a SQG of hazardous waste, who must transport his waste, or offer his waste for transportation, over a distance of 200 miles or more for off-site treatment, storage or disposal may accumulate waste on-site for 270 days or less without a permit or without having interim status provided that he complies with the requirements of paragraph (d) of this section.

NOTE: The quantity of waste accumulated on-site may never exceed 6000 kilograms

Exceptions to Accumulation Time Limitations:

- 40 CFR 262.34(f) –

If you are a SQG of hazardous waste, and has accumulated greater than 6000 Kg of hazardous waste onsite, or has stored hazardous waste onsite for greater than 180-days, the generator is considered an operator of a storage facility and is subject to the requirements of 40 CFR parts 264 & 265 (TSDf), and permit requirements of 40 CFR part 270 (TSDf), UNLESS the generator has been granted an extension to the 180-day period.

NOTE: An extension of up to 30-days may be granted by the Department, on a case-by-case basis.

Exceptions to Accumulation Time Limitations:

- 40 CFR 262.34(b)

If you are a LQG of hazardous waste, and accumulate hazardous waste onsite for more than 90-days, the generator is considered an operator of a storage facility and is subject to the requirements of 40 CFR parts 264 & 265 (TSD), and permit requirements of 40 CFR part 270 (TSD), UNLESS the generator has been granted an extension to the 90-day period.

NOTE: An extension of up to 30-days may be granted by the Department, on a case-by-case basis.

Common Storage Area Requirements:

40 CFR 262.34(a)3 – While being accumulated on-site, each container...must be clearly marked, and/or labeled with the words:

**“HAZARDOUS
WASTE”**

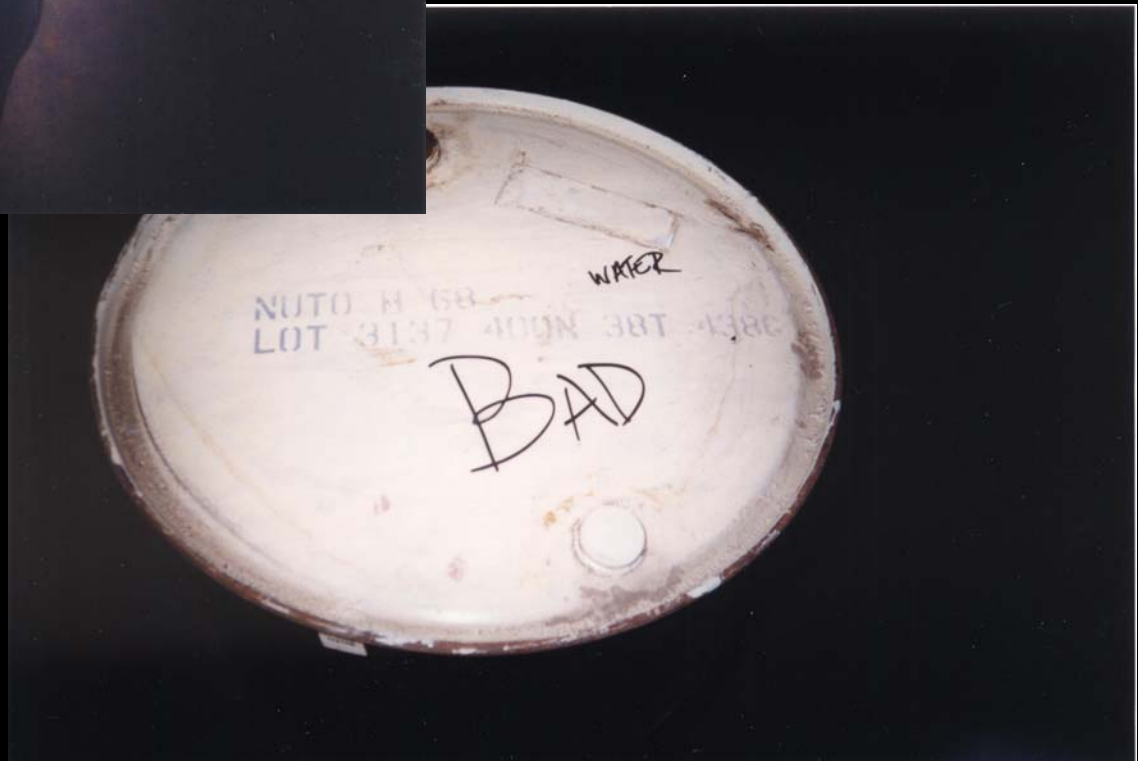
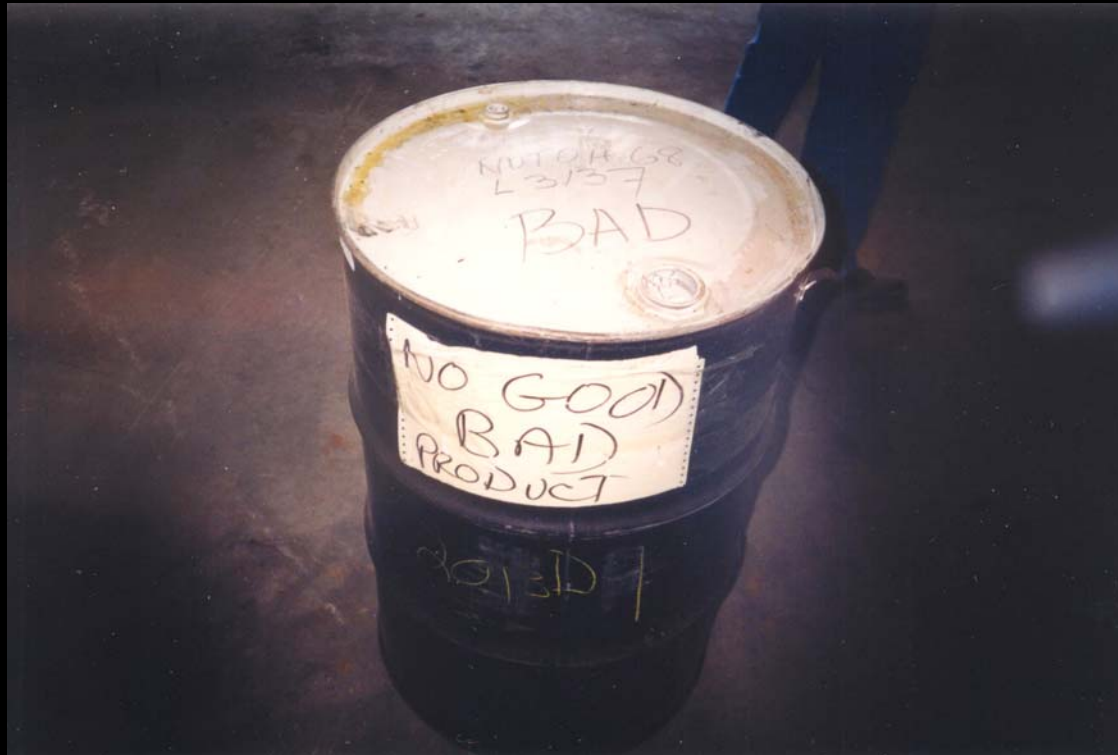
(THERE ARE NO EXCEPTIONS!!!!)

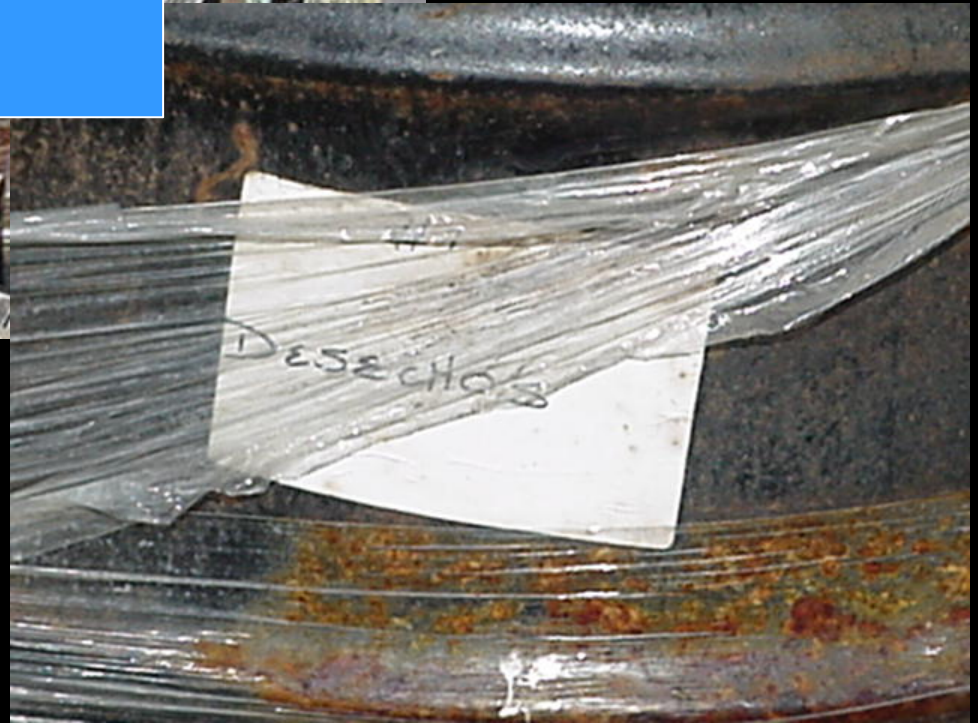
Common problems seen with 40 CFR 262.34(a)3

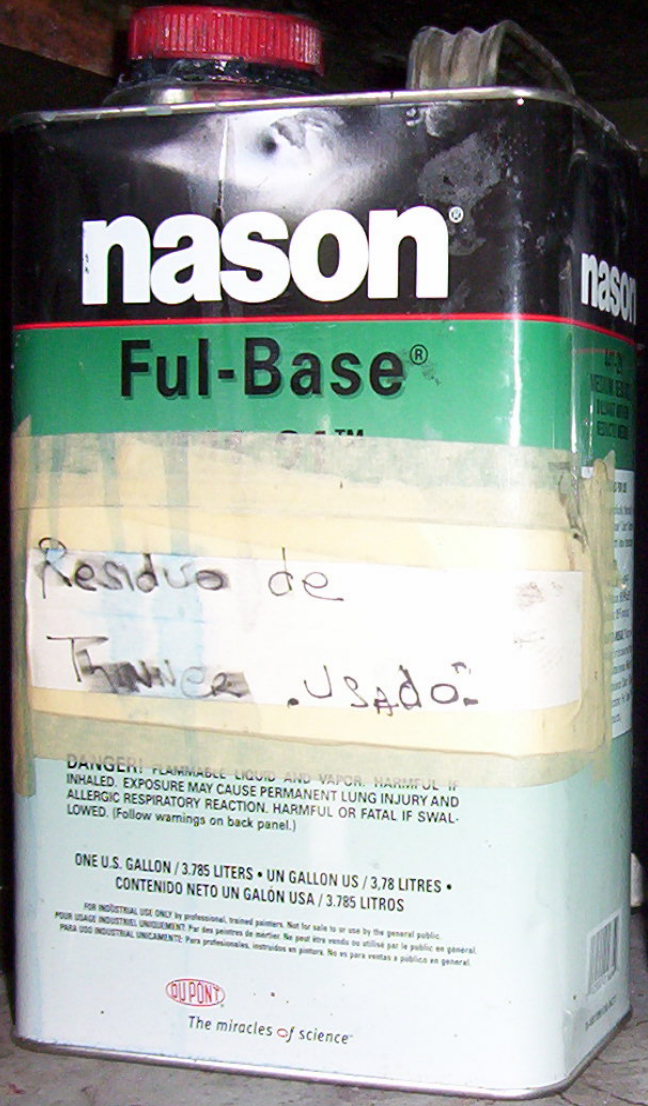


BAS WASH

07/17/2009







07/09/2008



05/05/2010



10/23/2009

How it should/can be done:





HAZARDOUS
WASTE
DATE
5-30-08

HAZARDOUS
WASTE
5-30-08

06/05/2008



09/09/2010



07/06/2007

Common Storage Area Requirements:

- 40 CFR 262.34(a)2 – the date upon which each period of accumulation begins is clearly marked and visible for inspection on each container.

Reason:

+ SQG – has 180-day storage limit (40 CFR 262.34(d))

+ LQG – has 90-day storage limit (40 CFR 262.34(a))

Common problems seen with 40 CFR 262.34(a)2



HAZARDOUS WASTE
FEDERAL AND/OR STATE LAWS PROHIBIT IMPROPER DISPOSAL

IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, THE U.S. ENVIRONMENTAL PROTECTION AGENCY OR THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION 2-5624

GENERATOR INFORMATION:

NAME ZINSSER CO., INC. PHONE 732/652-

ADDRESS 480 FRELINGHUYSEN AVENUE STATE NJ ZIP 07114

CITY NEWARK

EPA ID NO. / MANIFEST DOCUMENT NO. NJD002149789 STATE NJ ZIP 07114

STATE MANIFEST DOCUMENT NO. NJA5109254

ACCUMULATION START DATE / / EPA WASTE NO. D001

RQ , WASTE RESIN SOLUTION, 3, UN1866, PGII, ERG#127.

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX IF APPLICABLE

HAZARDOUS WASTE
HANDLE WITH CARE!

12/19/2005





How it should/can be done:

HAZARDOUS WASTE

FEDERAL AND/OR STATE LAW PROHIBITS IMPROPER DISPOSAL

IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY OR THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION.

NAME _____ PHONE _____

ADDRESS _____ STATE _____

CITY _____ ZIP _____

ACCOUNT NO. _____

DATE _____

STATE MANIFEST TRACKING NO. _____

EPA ID NO. _____

HAZARDOUS WASTE

Handwritten in red: Silver, LYONIDE, 12408

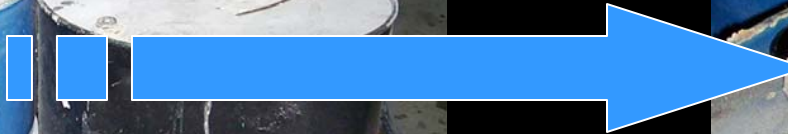


Common Storage Area Requirements:

- 40 CFR 265.173(a) – A container holding hazardous waste must always be securely closed during storage, except when it is necessary to add or remove waste

Reason: To prevent the release of hazardous waste, and/or its vapors. Again, to prevent a spill from occurring, and protect workers from hazardous vapors, fumes, etc...

Common problems seen with 40 CFR 265.173(a)



HAZARDOUS WASTE

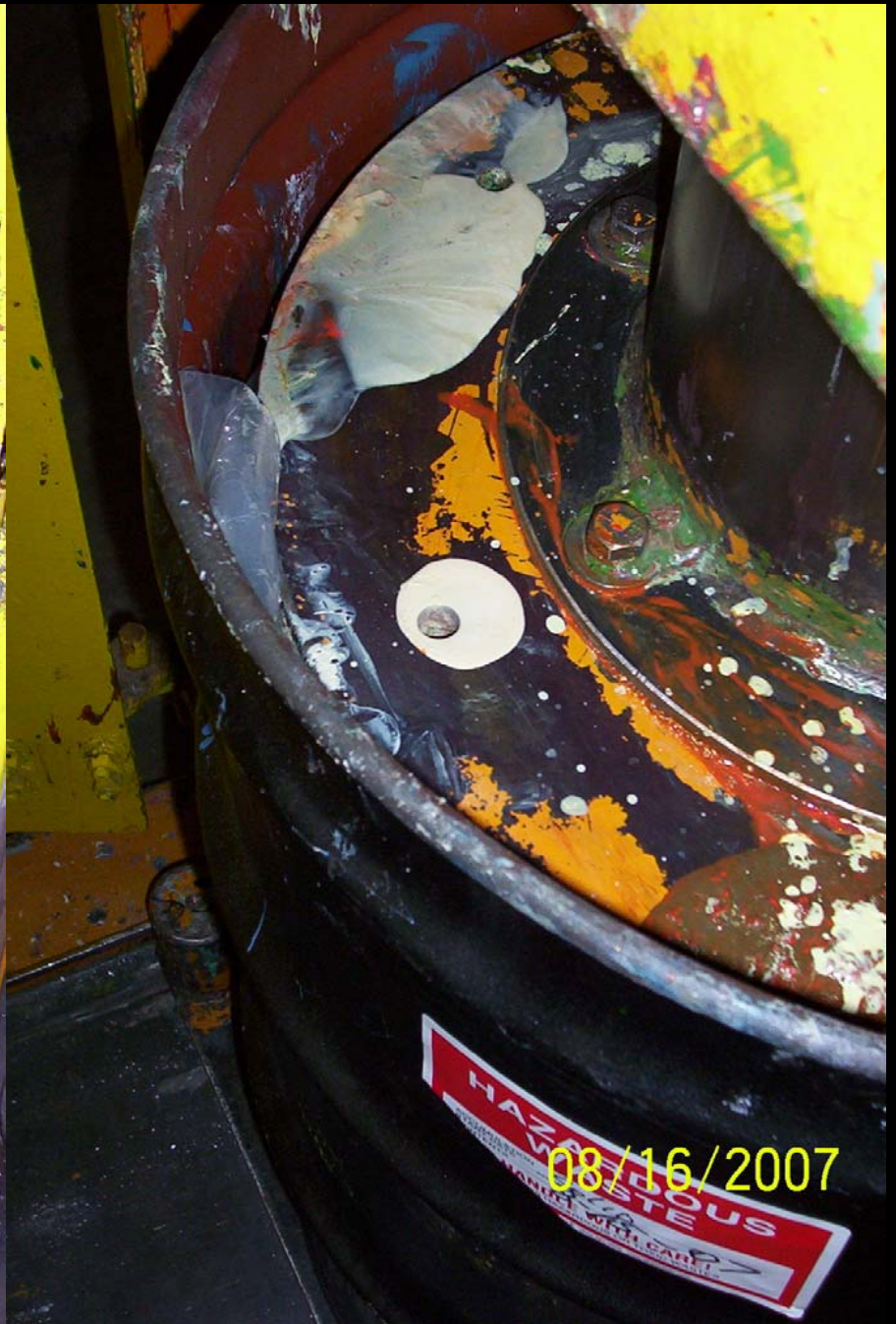
FEDERAL LAWS PROHIBIT IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE OR
PUBLIC SAFETY AUTHORITY OR THE
U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERATOR INFORMATION

NAME: **NICK STADT MUELLER INC**
ADDRESS: **1169 EDGEWATER AVE**
CITY: **MIDDLEFIELD** STATE: **OH** ZIP: **43067**
EPA ID NO: **FOOS, D001**
REGULATORY ID: **121501** MANUFACTURE DATE: **12/15/01**

[**Flammable Waste**]
[**Flammable Liquid**]

HANDLE WITH CARE!





DEC 11 2003



04/



04/24/2007



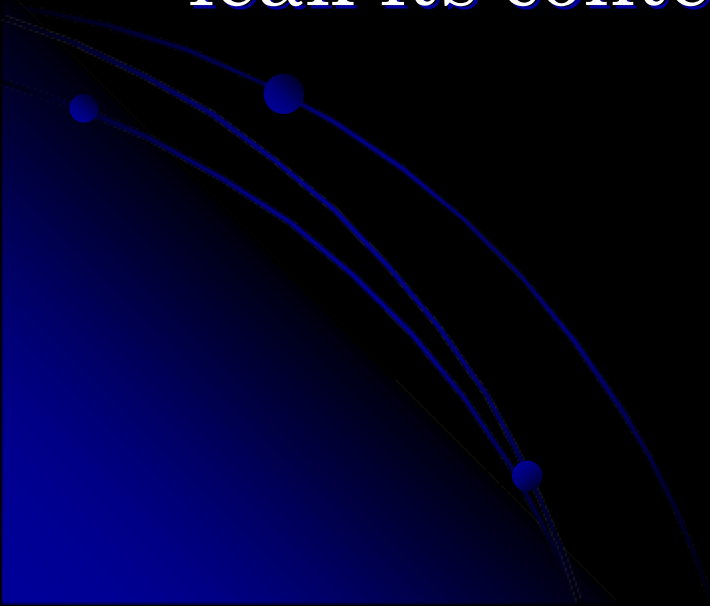
How it should,
and can be
done:

(and maybe not!)



Common Storage Area Requirements:

- 40 CFR 265.173(b) – A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak its contents



Common problems seen with 40 CFR 265.173(b)

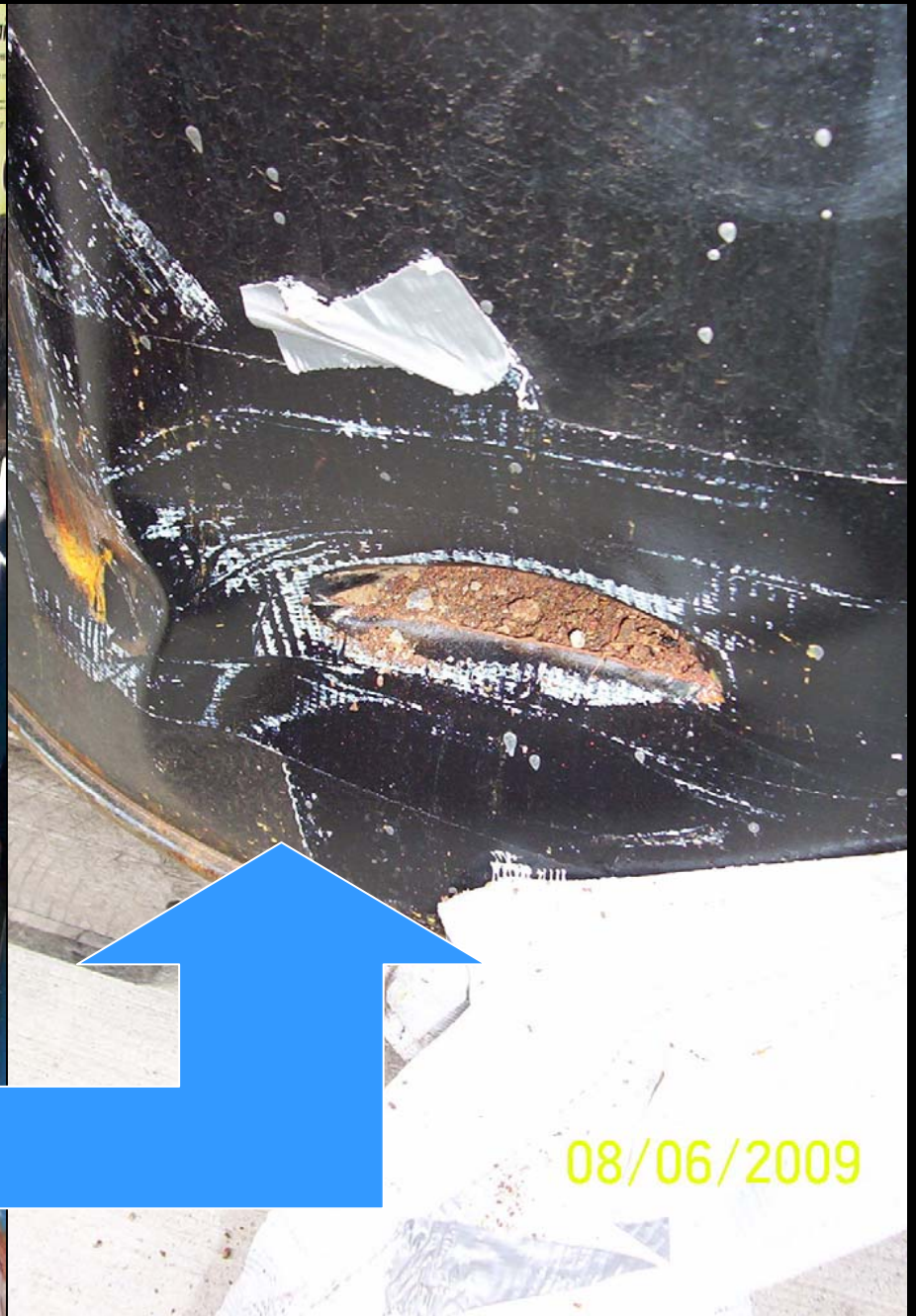




10/15/2008



10/15/2008



In addition to 40 CFR 265.173(b)

40 CFR 265.171 also mandates that if generator's have containers holding hazardous waste that is not in good condition, or if it begins to leak, the owner or operator (generator) must transfer the hazardous waste from this container to container that is in good condition; or manage the waste in some other way that complies with this requirement.

Both 40 CFR 265.173(b) and 40 CFR 265.171 go hand-in-hand with each other.





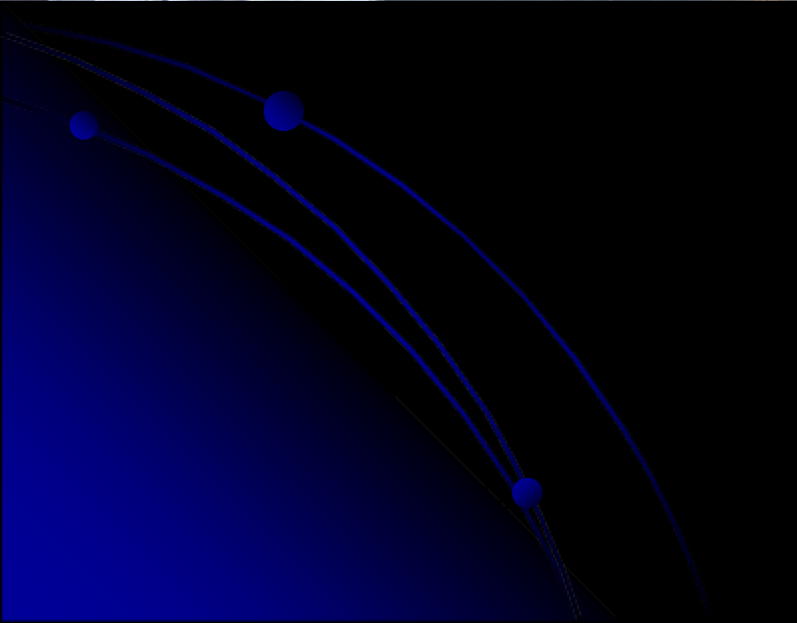
Common Storage Area Requirements:

- 40 CFR 265.35 – Required Aisle Space

An owner or operator (generator) must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency (Example – DEP requires 18” for single-stacked 55-gallon drums)









⚠ DANGER
HAZARDOUS WASTE
STORAGE AREA
UNAUTHORIZED PERSONS
KEEP OUT

05/05/2010



05/05/20



05/05/2010



How it should/can be done:





Common Storage Area Requirements:

- 40 CFR 265.34(a) – Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee.

REMEMBER!!!

Hazardous Waste Storage Area description, is:
An area where waste accumulation container(s)
are of such distance from the process
generating the waste, or in such a location,
that is not routinely within the control and
cognizance of the operator of the process.

Storage areas are usually well removed from the active parts of a facility, and the only means of communications is through some type of communications device – phone, alarm, 2-way radio, etc...



**WASTE
SOLVENT**

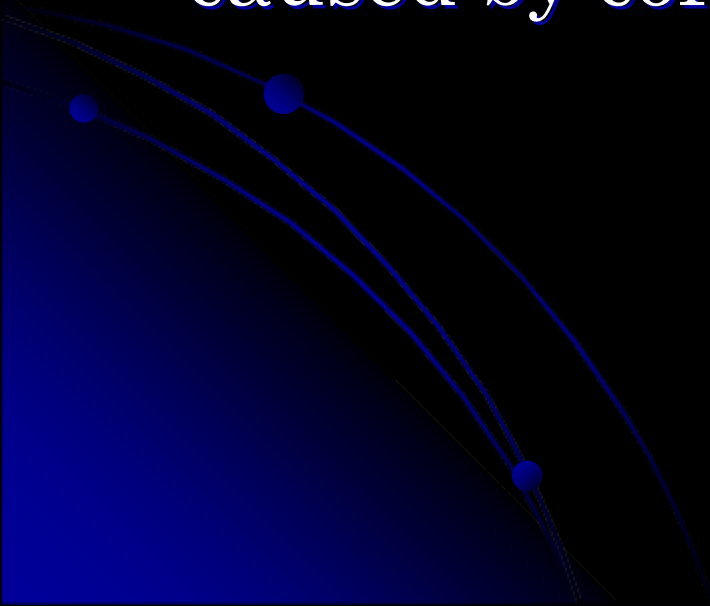
**WASTE
OIL**

ALL DRUMS
MUST BE CAPPED
AT ALL TIMES.



Common Storage Area Requirements:

- 40 CFR 265.174 – the owner or operator (generator) must inspect area where containers are stored, at least weekly, looking for leaks and for deterioration caused by corrosion or other factors.



Things to remember about inspections:

- Container Management and weekly inspections go hand-in-hand.
- Ensures hazardous waste storage containers are being properly managed.
- Ensures any problems that are found, are/can be addressed in a prompt manner before any serious injury or property damage can occur.
- Written inspection log not required for SQG/LQG, but highly recommended to show that the required inspections are being conducted.

WEEKLY CONTAINER STORAGE AREA INSPECTION LOG

ITEM/WEEK	WEEK OF _____	WEEK OF _____	WEEK OF _____	WEEK OF _____	WEEK OF _____
Containers in good condition, not leaking?					
Containers closed when not in use?					
Containers properly marked?					
Container markings visible?					
Containers stored longer than allowed?					
Containers segregated by waste type?					
Ignitable or reactive waste stored >50' from property line?					
Adequate aisle space?					
Spill control, communication, safety, & fire equipment present?					
Name, date, and time of person performing inspection					
Corrective action taken (Use separate sheet as necessary)					

03/30/2011

Great, but where can I get one of those?

**COMPLIANCE ASSISTANCE
PACKET
FOR
HAZARDOUS WASTE
GENERATORS**



**NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF HAZARDOUS WASTE COMPLIANCE AND ENFORCEMENT**

Where can I find that online?

- The whole Compliance Assistance Packet
www.nj.gov/dep/enforcement/CAVPacket%20Master.pdf
- Just the Sample Inspection Log
www.nj.gov/dep/enforcement/hw-inspection.pdf

Commonly Overlooked Storage Area Requirements:

Storage of Incompatible Hazardous Wastes

as per 40 CFR 260.10 – an incompatible waste is a hazardous waste which is unsuitable for placement in a particular device because it may cause corrosion or decay of containment materials (i.e., container inner liners), OR commingling with another waste or material under un-controlled conditions because the commingling might produce heat or pressure, fire or explosion, violent reaction, toxic dusts, mists, fumes, or gases, or flammable fumes or gases.

Storage of Incompatible Hazardous Waste

40 CFR 265.177 – states “...incompatible waste, or incompatible wastes and materials must not be placed in the same container... hazardous waste must not be placed in an unwashed container that previously held incompatible waste or material... or a storage container holding hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, must be separated from the other materials or protected from them by means of dike, berm, wall, or other device.

NOTE: Appendix V shows examples of incompatible waste, and materials.

Appendix V

40 CFR 265

Environmental Protection Agency

Pt. 265, App. V

Formulae for calculation of the t-statistic and tables for t-test of significance can be found in most introductory statistics texts.

APPENDIX V TO PART 265—EXAMPLES OF POTENTIALLY INCOMPATIBLE WASTE

Many hazardous wastes, when mixed with other waste or materials at a hazardous waste facility, can produce effects which are harmful to human health and the environment, such as (1) heat or pressure, (2) fire or explosion, (3) violent reaction, (4) toxic dusts, mists, fumes, or gases, or (5) flammable fumes or gases.

Below are examples of potentially incompatible wastes, waste components, and materials, along with the harmful consequences which result from mixing materials in one group with materials in another group. The list is intended as a guide to owners or operators of treatment, storage, and disposal facilities, and to enforcement and permit granting officials, to indicate the need for special precautions when managing these potentially incompatible waste materials or components.

This list is not intended to be exhaustive. An owner or operator must, as the regulations require, adequately analyze his wastes so that he can avoid creating uncontrolled substances or reactions of the type listed below, whether they are listed below or not.

It is possible for potentially incompatible wastes to be mixed in a way that precludes a reaction (e.g., adding acid to water rather than water to acid) or that neutralizes them (e.g., a strong acid mixed with a strong base), or that controls substances produced (e.g., by generating flammable gases in a closed tank equipped so that ignition cannot occur, and burning the gases in an incinerator).

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

Group 1-A	Group 1-B
Acetylene sludge	Acid sludge
Alkaline caustic liquids	Acid and water
Alkaline cleaner	Battery acid
Alkaline corrosive liquids	Chemical cleaners
Alkaline corrosive battery fluid	Electrolyte, acid
Caustic wastewater	Etching acid liquid or solvent
Lime sludge and other corrosive alkalies	Pickling liquor and other corrosive acids
Lime wastewater	Spent acid
Lime and water	Spent mixed acid
Spent caustic	Spent sulfuric acid

Potential consequences: Heat generation; violent reaction.

Group 2-A	Group 2-B
Aluminum	Any waste in Group 1-A or 1-B
Beryllium	
Calcium	
Lithium	
Magnesium	
Potassium	
Sodium	
Zinc powder	
Other reactive metals and metal hydrides	

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

Group 3-A	Group 3-B
Alcohols	Any concentrated waste in Groups 1-A or 1-B
Water	
	Calcium
	Lithium
	Metal hydrides
	Potassium
	SO ₂ Cl ₂ , SOCl ₂ , PCl ₅ , CH ₃ SOCl ₂ , Other water-reactive waste

Potential consequences: Fire, explosion, or heat generation; generation of flammable or toxic gases.

Group 4-A	Group 4-B
Alcohols	Concentrated Group 1-A or 1-B wastes
Aldehydes	
Halogenated hydrocarbons	
Nitrated hydrocarbons	
Unsaturated hydrocarbons	Group 2-A wastes
Other reactive organic compounds and solvents	

Potential consequences: Fire, explosion, or violent reaction.

Group 5-A	Group 5-B
Spent cyanide and sulfide solutions	Group 1-B wastes

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas.

Group 6-A	Group 6-B
Chlorates	Acetic acid and other organic acids
Chlorine	
Chlorites	
Chromic acid	
	Concentrated mineral acids
	Group 2-A wastes
	Group 4-A wastes

Pt. 265, App. VI

Group 4-B	Group 6-A	Group 6-B
Concentrated wastes in Groups 1-A or 1-B	Chlorates	Acetic acid and other organic acids Concentrated mineral acids Group 2-A wastes Group 4-A wastes Other flammable and combustible wastes
	Chlorine	
	Chlorites	
	Chromic acid	
	Hypochlorites	
	Nitrates	
	Nitric acid, fuming	
	Perchlorates	
	Permanganates	
	Peroxides	
	Other strong oxidizers	

Potential consequences: Fire, explosion, or violent reaction. 03/30/2011

SOURCE: "Law, Regulations, and Guidelines"

HAZARDOUS MATERIALS LOAD AND SEGREGATION CHART

CLASS	PLACARDS	CLASS OR DIVISION	PLACARD WEIGHT	NOTES	SEGREGATION																		
					1.1 1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3 ZONE A	2.3 ZONE B	3	4.1	4.2	4.3	5.1	5.2	6.1 LIQUIDS PG I ZONE A	7	8	
CLASS 1	EXPLOSIVES *Add division number and compatibility group	1.1	ANY QUANTITY	A	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X	
					1.2	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X
					1.3	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X
CLASS 2	EXPLOSIVES *Add compatibility group	1.4	1001 Lbs.		*	*	*	*	*	O	O	O	O	O	O	O	O	O	O	O	O		
					VERY INSENSITIVE EXPLOSIVES	1.5	1001 Lbs.	A	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X
CLASS 2	EXTREMELY INSENSITIVE EXPLOSIVES	1.6	1001 Lbs.		*	*	*	*	*														
					FLAMMABLE GASES	2.1	1001 Lbs.		X	X	O	X			X	O						O	O
CLASS 2	NON-TOXIC NON-FLAMMABLE GASES	2.2	1001 Lbs.	B	X				X														
					POISONOUS GAS ZONE A	2.3	ANY QUANTITY	G	X	X	O	X		X			X	X	X	X	X	X	
CLASS 2	POISONOUS GAS ZONE B	2.3	ANY QUANTITY	G	X	X	O	X		O					O	O	O	O	O	O			O
					CLASS 3	FLAMMABLE LIQUIDS	3	1001 Lbs.		X	X	O	X		X	O					O		X
CLASS 4	FLAMMABLE SOLIDS	4.1	1001 Lbs.		X			X				X	O						X		O		
CLASS 4	SPONTANEOUSLY COMBUSTIBLE	4.2	1001 Lbs.		X	X	O	X				X	O							X		X	
					DANGEROUS WHEN WET MATERIALS	4.3	ANY QUANTITY		X	X		X			X	O						X	
CLASS 5	OXIDIZERS	5.1	1001 Lbs.	A	X	X		X			X	O	O						X		O		
CLASS 5	ORGANIC PEROXIDES	5.2	1001 Lbs.	F	X	X		X			X	O								X		O	
					CLASS 6	POISONOUS LIQUIDS PG I ZONE A	6.1	ANY QUANTITY	E H	X	X	O	X		O			X	X	X	X	X	
CLASS 7	RADIOACTIVE MATERIALS	7	ANY QUANTITY (yellow III label)		X			X		O													
CLASS 8	CORROSIVE LIQUIDS	8	1001 Lbs.		X	X	O	X			X	O		O	X	O	O	O	X				

Easier Approach to Determining what Hazardous Wastes/Materials are Incompatible:

USDOT Hazardous Materials Load & Segregation Chart

§177.848 (e) INSTRUCTIONS FOR USING THE SEGREGATION TABLE FOR HAZARDOUS MATERIALS ARE AS FOLLOWS:

CLASS 3	COMBUSTIBLE LIQUIDS	8	1001 Lbs.	C J
CLASS 9	OTHER THAN INHALATION	9	1001 Lbs.	C I

(1) The absence of any hazard class or division or a blank space in the Table indicates that no restrictions apply.
 (2) The letter "X" in the Table indicates that these materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility during the course of transportation.
 (3) The letter "O" in the Table indicates that these materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility during the course of transportation unless separated in a manner that, in the event of leakage from packages under conditions normally incident to transportation, commingling of hazardous materials would not occur. Notwithstanding the methods of separation employed, Class B (corrosive) liquids may not be loaded above or adjacent to Class 4 (flammable) or Class 5 (oxidizing) materials, except that shippers may load truckload shipments of such materials together when it is known that the mixture of contents would not cause a fire or a dangerous evolution of heat or gas.

Common problems seen with 40 CFR 265.177





08/15/2007



10/18/2007













CAUTION
DANGER
FALLING OBJECTS
DO NOT CLIMB
OR STAND ON

114-007-21 20 T
114-007-21 12 L

universal
waste

Commonly Overlooked Storage

Area requirements:

- 40 CFR 265.176 – Special requirements for ignitable or reactive waste(s).

Applies to LQG's only:

Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line.

Un-Common Storage Area Requirements:

Well, what if I store my hazardous waste in tanks???

Does anyone store hazardous waste in tanks???

Yes, but vast majority of generator's store their hazardous waste in various sized containers...

The requirements for owners and operators (generators) that use tank systems can be found in Subpart J – Tank Systems located at 40 CFR 265.

40 CFR 265.190 – Applicability

40 CFR 265.191 – Assessment of existing tank system integrity

40 CFR 265.192 – Design & Installation of new tank systems or components

40 CFR 265.193 – Containment & Detection of release

40 CFR 265.194 – General operating requirements

40 CFR 265.195 – Inspections

40 CFR 265.198 – Special requirements for ignitable or reactive wastes

40 CFR 265.199 – Special requirements for incompatible wastes

40 CFR 265.201 – Special requirements for generators of between 100 and 1,000 kg/mo (SQG) that accumulate hazardous waste in tanks.

Subpart BB requirements – air emission standards for tanks that store volatile organics (500 ppm or greater in the waste stream)

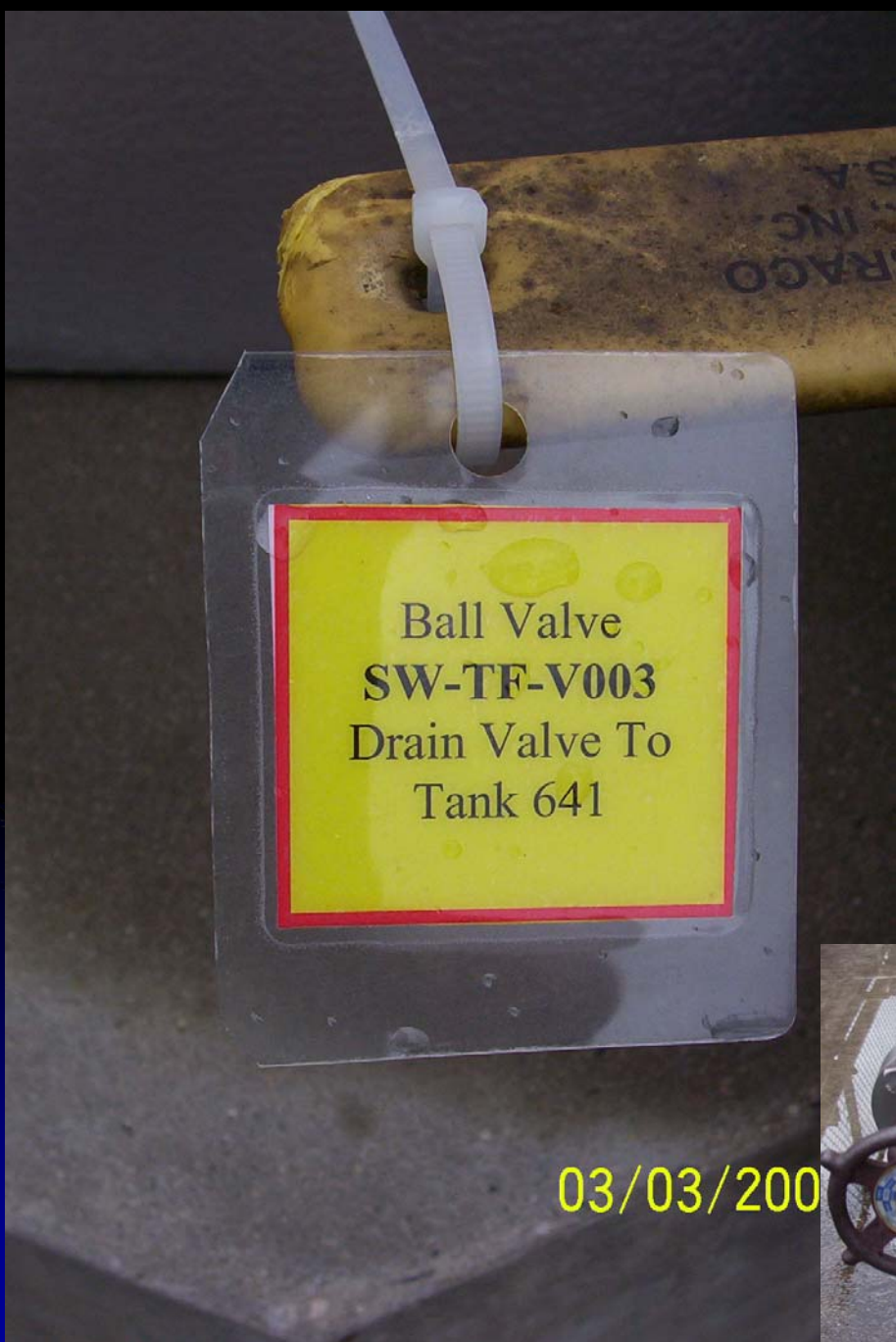
Other NJAC requirements for that labeling, and placing the accumulation start date on tanks as well.











03/03/200



03/03/2009



03/03/2009

IMPORTANT

- To meet the hazardous waste storage container (and tank requirements if applicable) in 40 CFR, and the New Jersey Administrative Codes (N.J.A.C.);
- Even more important to ensure that all applicable personnel receive routine training in all aspects of container (and tank) management, from container labeling & marking requirements, to the proper use, and implementation of the emergency communications plan/devices onsite to ensure that...

This won't
happen to one
of your
hazardous
waste storage
containers at
your facility...



Which can lead to this...all because of poor container, tank, or waste management!

