



HAZMAT SPILL RESPONSE AND INDUSTRIAL CLEANING



Response Actions



A = Assess the Situation

C = Contain the Release

C = Cleanup the Release

D = Dispose of Waste Properly

Hazmat Spill Response

The presence of chemicals in today's society, be it manufacturing, storage, or use situations, may present hazards to persons upon its unplanned release from containment.

Even with the strict state regulations governing containers, shipping, and markings, the responsible party must consider actions should hazardous materials be released.



Topics



- ✓ Hazard Identification
- ✓ Response Actions
- ✓ Emergency Response Zones
- ✓ Mitigation Methods
 - Chemical Control
 - Physical Control
- ✓ Training

Hazard Identification

Identify hazards by markings, labels or shipping papers.



EPICHLOROHYDRIN ①

UN No. 2023
CAS No. 106-89-8

② **DANGER**

④ Flammable liquid and vapor. Toxic if swallowed. Toxic in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause cancer.

⑤ Do not breathe dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection.

③

⑥

Fill Weight: 18.52 lbs. Lot Number: A032311323
Gross Weight: 20 lbs. Fill Date: 1/15/2012
Expiration Date: 1/15/2018

JACKSON CHEMICAL COMPANY - City of Industry, Los Angeles, California, USA (800)-444-456-8989

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number 2. Page 1 of 2 3. Emergency Response Phone 4. Waste Tracking Number

5. Generator's Name and Mailing Address 6. Generator's Site Address (if different than mailing address)

Generator's Phone

7. Transporter 1 Company Name 8. U.S. EPA ID Number

9. Transporter 2 Company Name 10. U.S. EPA ID Number

11. Designated Facility Name and Site Address 12. U.S. EPA ID Number

Facility's Name

13. Waste Shipping Name and Description	14. Containers		15. Total Quantity	16. U.S. EPA ID Number
	No.	Size		
1.				
2.				
3.				
4.				

17. Special Handling Instructions and Additional Information

18. Signature Month Day Year

19. Signature Month Day Year

20. Signature Month Day Year

21. Signature Month Day Year

22. Signature Month Day Year

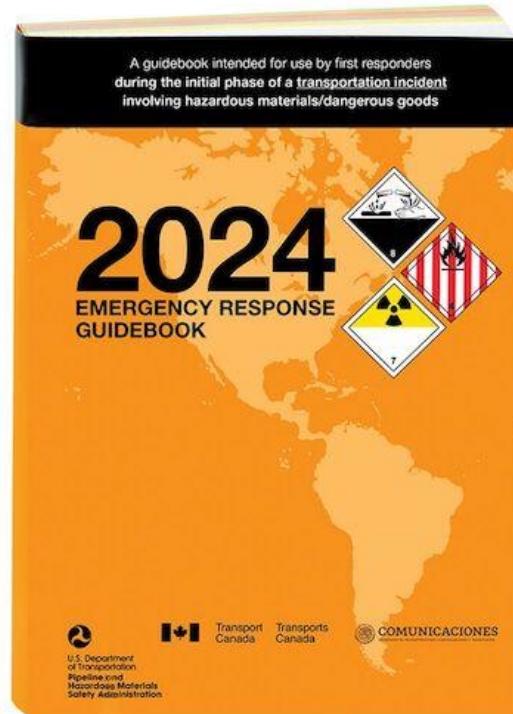
23. Signature Month Day Year

24. Signature Month Day Year

DESIGNATED FACILITY TO GENERATOR

Hazard Identification

Once material is identified, other sources may be used to determine spill response actions



SDS's are a great resource to provide to the response team. If the SDS is readily available, please have a copy in hand or a digital copy. This resource greatly increases the efficiency of the response.

Hazard Identification

Identification can also be made in the field with sampling and testing kits. This unfortunately is time consuming.



If the facility can have the necessary info readily available before or upon arrival of the responding units, this would assist in response organization and cost effectiveness from the responsible party point of view

Response Goals

Goals of Spill Response:

1. Eliminate additional loss.
2. Prevent further contamination.
3. Avoid unnecessary exposure of workers.
4. Prevent mixing of other chemicals.
5. Prevent negative relations with local and state regulators.



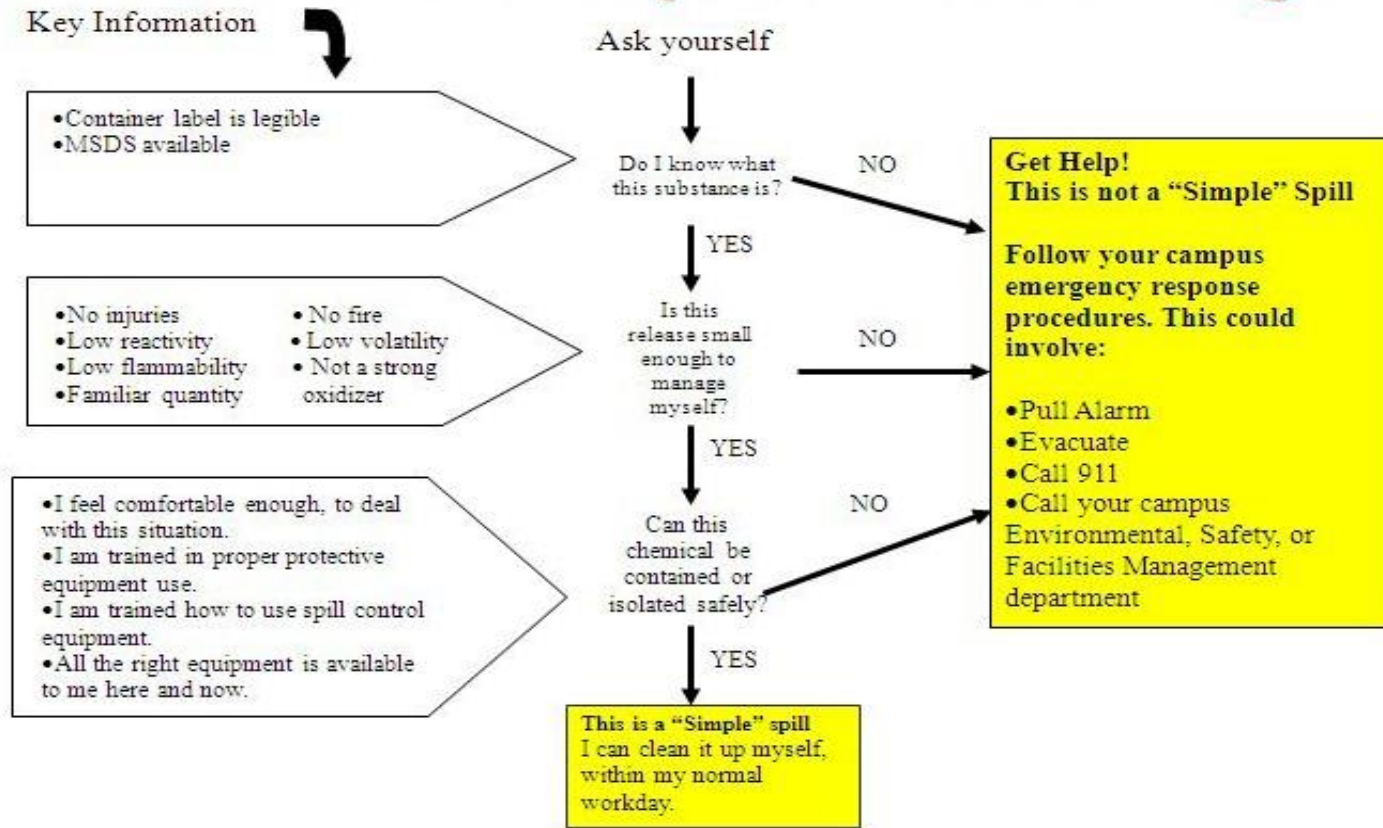
Response Steps

- Identify spilled material
- Size-up incident severity
- Determine mitigation methods
- Implement methods
(Pre-plan relationships with county hazmat teams and private sector response teams)



Proper Response Steps

Chemical Incident Response - Decision Logic



IF YOU ANSWERED NO TO ANY OF THESE STEPS CALL THE PROFESSIONALS!!

Emergency Response Zones

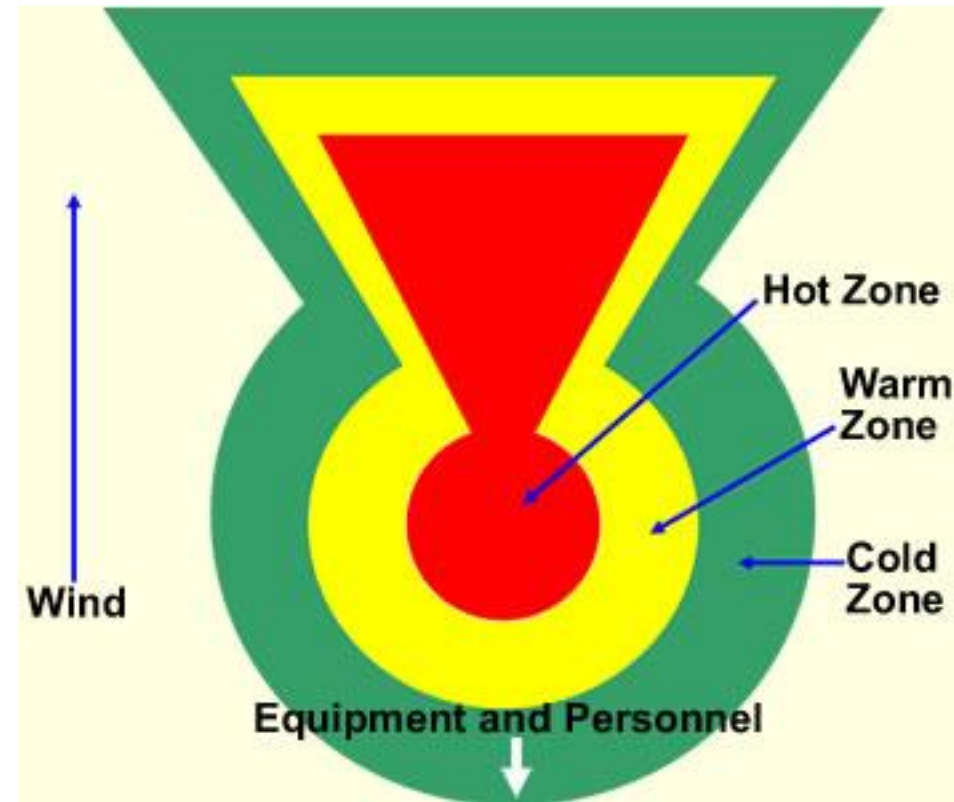
Isolation:

- Release must be isolated against intrusion by unnecessary and untrained persons.
- During size up and containment operations, the Incident Commander will deny entry to the hazard zone to all but those required to conduct the control operations
- Also, understand such isolation is a guard against contamination of persons, vehicles and equipment

Emergency Response Zones

These are generally 3 in number:

- Hot Zone (Exclusion Zone)
 - Impact location
- Warm Zone (Contamination Reduction Zone)
 - Safe Haven/Decon Area
- Cold Zone (Support Zone)
 - Clean Area usually
Command Post is located in
this area



Hot Zone (Exclusion Zone)

Area immediately surrounding and including the contaminated area. Greatest hazard to life and/or property is located in this area.

When identifying this zone, view:

- Wind direction and speed
- Topography of land
- Ventilation systems
- Potential for release increasing



Warm Zone (Reduction Zone)

Immediately surrounds the hot zone. A danger of contamination still exists, however, the danger may be reduced by the distance from the release.

Located in this zone:

- Team Leader
- Safety Officer
- Rescue/RIT Team
- Decon Team
- Entry Equipment



Cold Zone (Support Zone)

Immediately surrounds the Warm Zone. Relatively no danger of contamination or exposure.

Located in this zone:

- Command Post/Incident Commander
- Support Services and Agencies
- Staging Area for resources



Chemical Control

Neutralization:

Mixing an acid with a basic material or base with an acid to return the pH levels toward a reading of 7 (neutral)

DO NOT attempt this action without being trained and protected!! Leave it to the professionals.



Physical Control

- Remote shut-offs (Fuel stations)
- Clay Absorbents (Not saw dust)
- Damming
- Diking
- Transferring
- Cold Tap (Tank extraction)
- Plug n Patching
- Booming (Hard and/or soft)



Absorbents

Absorbent materials in a solid or granular form can absorb a certain volume of liquid spill. This can include absorbing petroleum products, acids, paint etc. Once introduced to the Hot Zone, they need to be retrieved and disposed of as waste. NOTE: Using the proper absorbents will ensure proper containment and ease of the cleanup.

Clay Absorbent



Sock Absorbent



Damming

Involves constructing a downstream impediment to flow. The two operations most often used are:

- 1) overflow and
- 2) underflow dam depending on the Specific Gravity (SG) of the contaminant.

Example: Oil/Fuel = Underflow Dam Antifreeze = Overflow dam

Overflow Dam



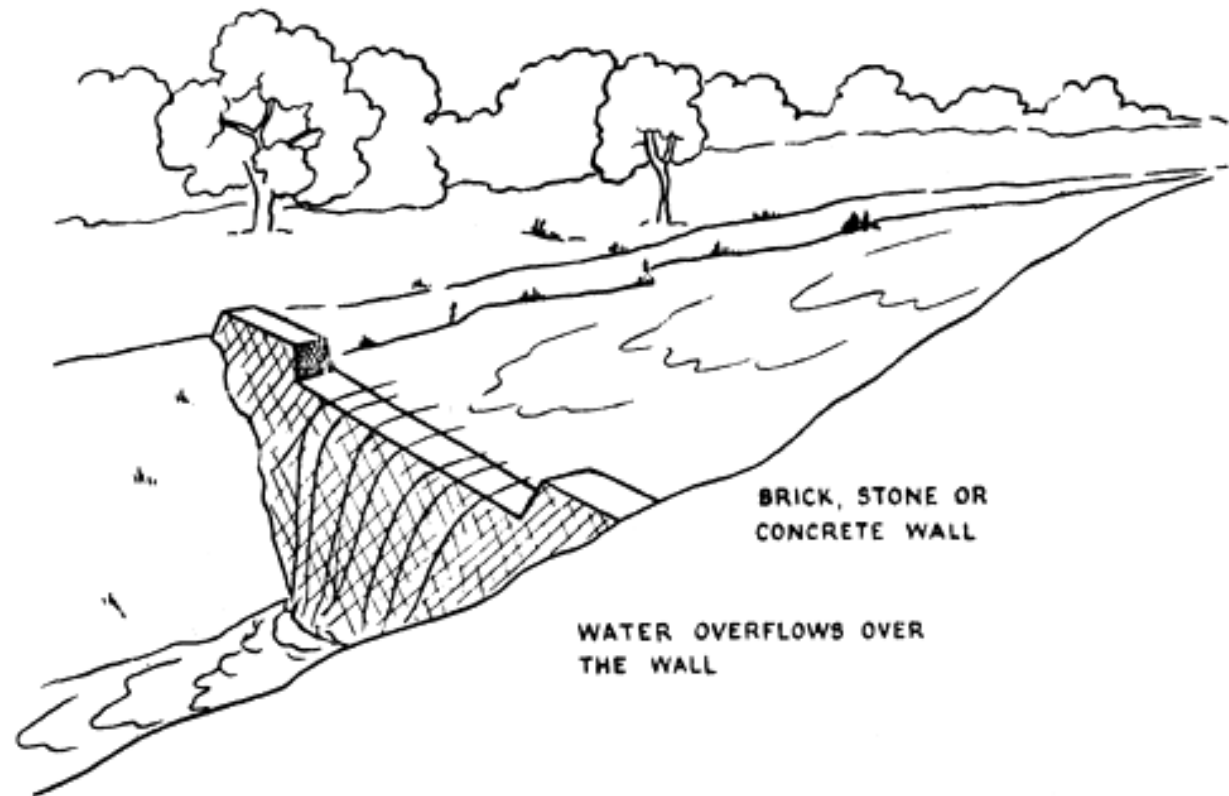
Underflow dam



Overflow Dam

The Overflow dam permits water to flow over the dam when heavier-than-water materials will be trapped at the base of the dam.

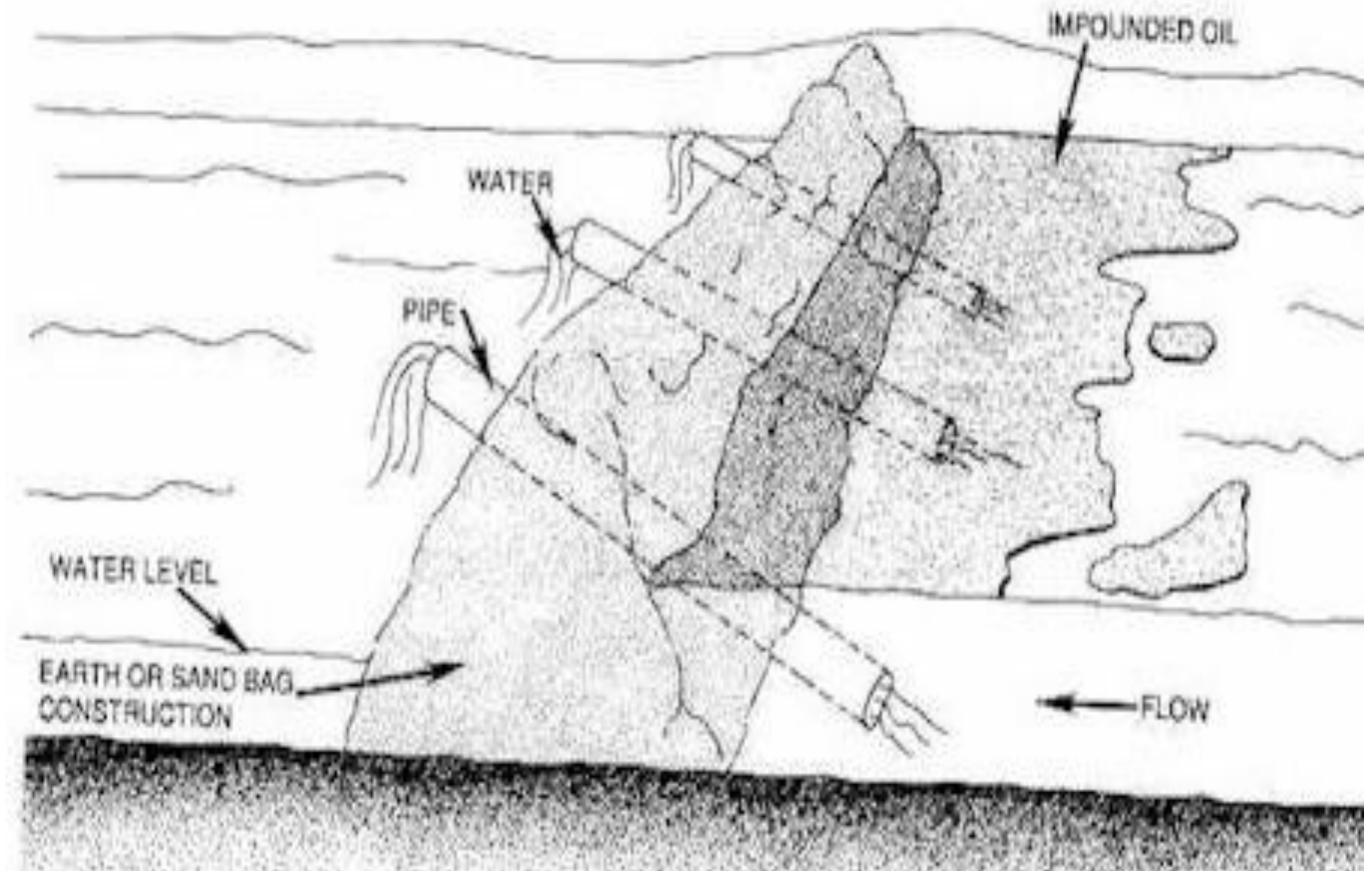
If the Specific Gravity is more than 1.0kg litre, the material is heavier than water necessitating the construction of an overflow dam



Underflow Dam

The Underflow dam is used when lighter-than-water materials will be trapped on the surface and the dewatering of the flow occurs at the stream bed.

If the Specific Gravity is less than 1.0 kg per litre, the material is lighter than water necessitating the construction of an underflow dam



Protecting Drains

Control considerations can be as particular as using sand in plastic bags for diking material rather than loose sand. Drain covers are best for both response operations and site maintenance.



Training

Training is essential to any spill/hazmat response. Limited initial training or non current continued training can lead to costly repercussions to the client and possibly injury or death. We suggest that you get the training or call on the professionals.



Suggested Training

The following training certifications are the minimum training needed to handle spills, hazardous and non hazardous.

- 24/40 Hr. Hazwopper
- RCRA 300/DOT (Manifesting and waste handling)

These certifications can be acquired online and is excepted nationwide.



Safe Handling and Disposal of Hazardous Materials

Definition of Disposal of Waste

“Proper disposition of a discarded or discharged material in accordance with local environmental guidelines or laws.”

Definition of Waste Management

“Waste management is the collection, transport, processing, recycling or disposal and monitoring of waste materials.”

IMPORTANCE OF WASTE MANAGEMENT

5 Reasons why Waste Management is Important



Source-cleanmanagement.com

What is a Non-Hazardous Waste

- A type of industrial waste that does not contain hazardous constituents (i.e voc's, metals etc.)
- Cannot be discarded into dumpster or sewage line.
- Motor oil, Diesel fuel or Latex Paint are some examples of Non-Hazardous waste
- No immediate effect on human life.



What is a Hazardous Waste



- A Hazardous Waste is a waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment.

Do Not Confuse with Hazardous Material

- A hazardous material is a material, that in any quantity, poses a threat to life, health or property

Waste Management in Facility



NON-HAZARDOUS WASTE MANIFEST

(Form designed for use on site (10-pick) (paperless))

Please print or type.

1. Generator's US EPA ID No.		Material Receipt No.	2. Page 1 of	
3. Generator's Name and Mailing Address				
4. Generator's Phone				
5. Transporter 1 Company Name		6. US EPA ID Number		
7. Transporter 2 Company Name		8. US EPA ID Number		
9. Designated Facility Name and Site Address		10. US EPA ID Number		
		11. Facility's Phone		
11. WASTE DESCRIPTION		13. Total Quantity		14. USE W/NA
		12. Containers No.	Type	
a.				
b.				
c.				
d.				
F. Additional Descriptions for Materials Listed Above		G. Handling Codes for Wastes Listed Above		
15. Special Handling Instructions and Additional Information				
RCRA NON-HAZARDOUS WASTE				
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.				
Person/Typed Name		Signature		Date Month Day Year
17. Transporter 1 Acknowledgment of Receipt of Materials		Signature		Date Month Day Year
18. Transporter 2 Acknowledgment of Receipt of Materials		Signature		Date Month Day Year
19. Discrepancy Indication Space				
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 15.				
Person/Typed Name		Signature		Date Month Day Year

F14 Printed by Labelmatic, An American Labelmark Co., Chicago, IL 60646 (800) 821-6808



Benefits of Waste Management

Internal Management

- Cost savings
- Internal personnel control
- Control of waste logistics (shipping schedule)

External Management

- Responsibility is on contractor
- Manpower relief (release of overhead labor)
- Experienced contractor
- Contractor is able to relate to State Regulators

Things to Keep in Mind with Managing Waste

- Waste is organized
- Waste is easily ready for transport
- “Cradle to Grave” is accomplished and tracked better
- Better relationships with Regulators
- Limits spillage
- Limits “cross contamination”
- If handling internal, make sure you have the proper training especially when signing manifests.



Required Training in Waste Management

The person signing the manifest either Hazardous or Non-Hazardous must receive:

- Function-specific training, and
- General awareness/safety training
- RCRA/DOT 300

If you're not trained, how do you know I'm doing my job right? Confirm that your waste management contractor and/or transportation/disposal contractor and/or response contractor is trained and certificate on file with your facility limiting any problems with the state.

The image shows a hazardous waste manifest form, likely a U.S. EPA Form 354. The form is divided into several sections:

- Transporter Information:** Sections 1, 2, and 3 for Transporter 1, 2, and 3, including company name and U.S. EPA ID number.
- Facility Information:** Section 4 for Facility Name and U.S. EPA ID number.
- Waste Description and Quantity:** Section 5, a table with columns for U.S. DOT Description, Container No., Type, Total Quantity, Unit, and Waste Codes.
- Special Handling Instructions:** Section 6.
- Generator Certification:** Section 7, where the generator certifies that the waste is properly described and packaged.
- Transporter Information:** Section 8, where the transporter certifies that the waste is properly described and packaged.
- Facility Information:** Section 9, where the facility certifies that the waste is properly described and packaged.

Steps to Properly Manage/Dispose of Waste by Manifesting

- Confirm that your management contractor and/or transportation contractor has proper training to sign on your behalf.
- Review the manifest before signing or having your contractor sign.
- Check that all information is complete and correct.
- Are all copies legible?
- Read and retain generators certification and sign manifest in proper location, box 14 (non hazardous) 15 (Hazardous) on manifest.
- Retain and file manifest copies for three years after shipment/disposal.



Vacuum Truck Services and Possible Uses

- Hazardous and Non Hazardous transportation for disposal.
- Hydro-excavation for spill response and industrial cleaning operations.



Different Uses of Vacuum Trucks

- Easy maneuvering for tight access
- Hydro-excavation/liquid uses
- Dual use (Power wash and vacuum)
- Larger quantity capabilities
- Liquid use only
- More power for distance
- Dual use (Power wash and Vacuum)



Vacuum Truck Concerns

Know your capabilities

- Know what your contractors vessel is capable of carrying
- Know that the vessel you are using is capable of carrying corrosive, flammable and reactive waste
- Know that the vessel being used can handle solids vs liquids.

Cross Contamination

- Know that your contractors vessel is cleaned out before entering your scene/property.
- Ask for certified wash-out credentials for any hazardous waste use.
- Know what the last material was that was put into that vacuum truck

Cross contamination can cause reaction between waste streams resulting in dangerous consequences.

Contact Information



Michigan Spill Response

- 855-200-9325
- MichiganSpill.com



Assured Emergency Services

- 855-MICHTOW
- AssuredES.com