

I-WASTE Incident Waste Decision Support Tool

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Example Wide-Area Contamination Scenario



Wide Area Recovery and Resiliency Program Denver Metro Area RDD Scenario



Decision Making Information Needs for Waste Management

- Waste quantity and characteristics
 - Sampling and analysis of waste
- Relevant regulatory requirements (local, state, federal levels)
- Key decision makers
- Potential treatment/disposal facilities
 - Waste acceptance criteria
- Potential transportation issues/routes
- Impact of remediation/decontamination decisions on waste management and vice-versa



What Problem/Gap Does This Tool Address?

- Management of waste from all-hazards incidents is tightly coupled with other aspects of the response (i.e., system of systems)
- Decisions on waste management issues are made at the local/state/federal level, and include private sector
- Chemical/Biological/Radiological/Nuclear (CBRN) waste is not explicitly addressed in many regulations
- Waste management decisions for CBRN-generated waste are closely tied to decontamination decisions
- Need for easy access to information to make informed decisions



Potential Applications

- Training, Planning and Exercise Tool
 - Supports State & Local Homeland Security (HS) Planning IAW National Planning Scenarios (NRF, 2008)
 - Allows multiple scenarios to be examined
 - Encourages discussions with facilities prior to event
 - For use in design or evaluation of HS Exercises involving disposal and recovery
- During an Environmental Response
 - Starting point for clean-up
 - -Quick reference
 - Reach back resource for planners & responders



I-WASTE Overview – Current Features

- Web-based tool with restricted access
- Series of inputs defining scenario
- Calculators available to estimate mass & volume of disastergenerated waste and debris (offices, schools, theaters, shopping malls, residences, hotels, hospitals)
- Database of treatment/disposal facilities (location, technical information, permits, geolocation)
- Access to contaminant and decontaminant information
- Guidance for worker safety, packaging and storage, and transportation



- I-WASTE is not an expert system (i.e., I-WASTE does not tell the user what to do), but rather presents information to consider during the decision-making or planning process
- I-WASTE assumes the decision to treat/dispose has been made
- I-WASTE does not present massive quantities of information to the user, but rather tries to distill information while maintaining links to more detailed information



- EPA Responders
 - On-scene Coordinators/Removal Managers
 - EPA Special Teams
 - Technical Working Group (TWG)
- State and Local Agencies
 - Emergency Planners
 - Public Health
 - Environmental Protection
 - Transportation
- Treatment/Disposal Facility Operators
 - Combustors/incinerators
 - Landfills
 - Building owners/managers
 - Water infrastructure
 - Radiological waste disposal facilities
 - Agricultural facilities



Collaborators and Partners

- ERG is Primary Contractor
- EPA
 - -OLEM (OEM, ORCR)
 - -ORD
 - -ORIA
 - -OW
- Other Federal Agencies
 - DHS
 - DOE
 - DOT
 - -FEMA
 - -USACE
 - -USDA

- State Agencies (DE, MD, NY, PA, VA)
- Waste Industry Groups (IWSA, NSWMA, SWANA)
- Water Industry Groups (AWWA)
- Facility item databases populated via discussions with respective industry representatives (e.g., hotel chains, school systems, theater chains, etc.)



I-WASTE Login Page

Incident Waste Decision Support Tool (I-WASTE DST)

Provide feedback

Welcome to EPA's Incident Waste Decision Support Tool, a decision support tool that organizes large amounts of information related to managing waste resulting from incidents of national significance (e.g., contaminated buildings and natural disasters). The tool can be used by individuals (i.e., emergency response authorities and property owners; tribal, state, and local permitting agencies; treatment and disposal managers; and/or planners) responsible for making disposal decisions. The tool provides access to technical information, regulations, and guidance to work through important waste management issues to assure safe and efficient removal, transport and management of waste materials. Specifically, the tool allows users to:

- · Create an incident planning and/or response record;
- Access a waste material estimator;
- · Access treatment and disposal facility databases; and/or
- Access guidance and documents.

It is important to understand that the information provided here does not override existing regulatory or legal requirements that apply to the disposal of waste. This information should be used as a starting point for understanding some of the options available for disposal of these materials.

A UserID and password are required to access the tool. Request a UserID and Password or enter your UserID and Password to get started. View the Overview Tutorial to learn more about I-WASTE.

Although information in I-WASTE is not sensitive, having user-based access allows sharing of user-defined scenarios with collaborators



Key Functions

Incident Waste Decision Support Tool (I-WASTE DST)

Revide feedback

Planners, emergency responders, and other individuals responsible for making disposal decisions can access technical information, regulations, and guidance to work through important disposal issues to assure safe and efficient removal, transport, treatment and/or disposal of debris and waste materials. Guidance and information contained in EPA's Incident Waste Decision Support Tool is accessible from this home page. You can navigate through applicable guidance and information presented in a logical framework, quickly produce an order of magnitude waste estimate, and access the treatment and disposal facility database and/or other guidance and information.

Access the Quick Start Guide or the Overview Tutorial for a brief overview of key functionality. Access the Waste Materials Estimator Tutorial for detailed demonstration of key features of the WME. More detailed instructions for using the tool are contained in the Help System. If you are a first-time user, or would like information on the Background, Status and Future Plans of the tool, and a discussion of the Design Philosophy and Technical Approach we have applied to the development of the tool, you may want to read Before You Begin.

Incident Planning & Response

Create a record of incident planning exercises or incident response decisions. Navigate through applicable guidance and information presented at each step in the decision process. Records may be saved and retrieved for future reference.

Waste Materials Estimator

Use the **Waste Materials Estimator** to produce an order of magnitude estimate for the weight and volume of materials that may require disposal. Base estimates on default values contained in the tool, or refine estimates based on more specific user-defined values.

Treatment & Disposal Facilities

Locate treatment and disposal facilities. Choose one or more filter criteria to generate a list of treatment and disposal facilities. Note: The facilities presented in the tool are not endorsed by EPA, nor have any facility owners agreed to accept any material. A facility's ability to accept incident waste is case specific and determined by the facility and its regulators. Facility contact information is provided to facilitate the initiation of treatment and disposal discussions.

Guidance & Information

Access guidance and information compiled to assist with disposal decisions. View guidance, reports, and websites organized by events or topics, view contact information, and access other useful tools. The 4 main functions of the tool are accessed from the main page.

It is important to understand that the information provided here does not override existing regulatory or legal requirements that apply to the disposal of waste materials. This information should be used as a starting point for understanding some of the options available for disposal of these materials.

*Note that you will be required to re-login after 30 minutes of inactivity.



Incident Waste Decision Support Tool (-WASTE DST)	V Provide feedback	
You are here: Home » Waste Materials Estimator			
The Waste Materials Estimator will generate order of r and/or disposal. Estimates can be generated for one of parameter values, or on user-specified values. Additic are not currently included in the tool, but that have si existing structure types.	agnitude estimates for the types and quantities of materia or more structure types and combination of structure types onally, several structure types can be used to generate esti milar characteristics. Click the hyperlinked structure name	ials that may require decontamination s. Estimates can be based on default imates for other types of structures that e to view the potential applicability of the	
Additional details on the data and methodology used box below. Click Generate Estimates to generate estim default parameter values before generating an estima	to generate estimates for each structure type can be acces tates using the default parameter values, or click Modify D te.	ssed via the links in the More Information Default Parameters to view or modify the	
Specify Area and Structures:	reatures, view the waste materials Estimator Futorial.		
Open Space	Movie Theaters	More Information Waste Materials Estimator Tutorial	
Offices	s) Qty:	Default Parameter Values for Structures Modeling Other Structure Types	
Qty: Small Office	Qty: Elementary School	Non-Structural/Interior waste Materials Structural Waste Materials Waste Materials Estimator and	
Qty: Medium Office Qty: Large Office	Qty: Middle School Qty: High School	HAZUS-MH	
Hospitals	Shopping Malls		
Qty: Medium Hospital	Qty: Small Shopping Mall		
Qty: Large Hospital	Qty: Medium Shopping Mall		
Hotels	Qty: Large Shopping Mall		
Qty: Small Hotel	Single-Family Residences	A "quick and dirty" waste	
Qty: Medium Hotel	Qty:	estimate can be generated	
Qty: Large Hotel		for a variety of buildings	
Modify Default Parameters Sclear Quantities Sclear Quantities Sclear Quantities With minimal user input			
Incident Planning & Response Waste I	Materials Estimator Treatment & Disposal Facilities	s Guidance & Information	

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United States Environmental Protection Waste Quantity Estimator Results





I-WASTE Facility Databases

- Landfills
 - MSW
 - Construction & Demolition Debris
 - Hazardous Waste
- Combustion Facilities
 - Municipal Waste Combustors (Waste-to-Energy)
 - Hazardous Waste
 - Medical/biohazardous Waste
 - Industrial combustion facilities (e.g., boilers, smelters, etc)
- Decontamination Wastewater Disposal Facilities
 - Publicly-Owned Treatment Works (POTWs)
 - Federally-Owned Treatment Works (FOTWs)
 - Liquid Hazardous Waste Combustion Facilities
- Other Disposal Facilities
 - Centralized Waste Treatment (CWT) Facilities
 - Commercial Medical Waste Autoclaves
 - Commercial and Federal Radioactive Waste Disposal Facilities



Incident Waste Decision Support Tool (I-WASTE DST)	🖂 Provide feedback	
You are here: Home » Treatment & Disposal Facilities		
You may customize the list of treatment and disposal facilities generated by applying one or more of the leave the selection boxes blank. Click View List of Facilities to generate a list of facilities that meet all of Information box to learn more about the facility data included in I-WASTE and the ability to map data ext	following filter criteria. To view all facilities, the specified criteria. Click the links in the More ternal to I-WASTE.	
Note: The facilities presented in the tool are not endorsed by EPA, nor have any facility owners agre accept incident waste is case specific and determined by the facility and its regulators. Facility cont initiation of treatment and waste management discussions.	eed to accept any material. A facility's ability to act information is provided to facilitate the	
Filter Criteria		
Facility types: Hold down the CTRL key to select multiple facility types Sort list box alphabetically Sort list box by facility grouping (e.g. landfills incinerators other)	More Information	
Centralized Waste Treatment (CWT) Facilities	 Universe of Facilities Other Waste Management Facilities Map Facilities 	
Federal Radioactive Waste Disposal Facilities Federally Owned Treatment Works (FOTW) Government-Owned Land/Facilities Hazardous Waste Combustion Facilities		
Industrial Waste Landfills Inert or Construction and Demolition (C&D) Landfills v	The facility database	s can
State: Hold down the CTRL key to select multiple states AK - ALASKA AL - ALABAMA	be queried by facility state, or EPA region.	type,
AR - ARKANSAS AZ - ARIZONA		
EPA Region: Hold down the CTRL key to select multiple EPA regions Region 1 (CT, ME, MA, NH, RI, VT) Region 2 (NJ, NY) Region 3 (DE, MD, PA, VA, WV, DC) Region 4 (AL, FL, GA, KY, MS, NC, SC, TN) \checkmark View List of Facilities		
Incident Planning & Response Waste Materials Estimator Treatment & Disposal F	acilities Guidance & Information	

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Facility Database Results

Incident W	aste Decision Support Tool (I–WA	STE DST)			W Provide feedback	
You are here: Home » Treatment & Disposal Facilities » Facility Search Results			Database que	erv results		
The list of faci	lities matching your criteria are listed below.	For your reference, the criteria used	to conduct thi	is search are al	have hyperlin	ks to facility
Note: The fa accept incid initiation of Filter Criteria:	acilities presented in the tool are not endors lent waste is case specific and determined b treatment and disposal discussions.	ed by EPA, nor have any facility ow y the facility and its regulators. Fac	ners agreed to cility contact in	o accept any m	Results can b an Excel file.	hits (if online). The exported to
Municipal Solio State(s): MT -	d Waste (MSW) Landfills MONTANA			• Univ	More Information	
Your search re	esults contain 7 facilities.			• Map	Facilities	
					Save List to File	
Select All On Page	Name	Address	State	EPA Region	Contact Information	
	BILLINGS CITY LANDFILL	5240 JELLISON ROAD 4 1/2 MI S., BILLINGS	MT	8	Barbara Butler 406-247-8633	
	FLATHEAD COUNTY LANDFILL	4098 Hwy 93 North, Kalispell	MT	8	David Prunty 406-758-5910	
	GALLATIN COUNTY LOGAN LANDFILL	10585 Two Dog Road, MANHATTAN	MT	8	Martin Bey 406-582-2492	
	Lewis & Clark County Landfill	4075 Deal Lane, Helena	MT	8	Sherrel Rhys 406-457-8521	
	Missoula Landfill	3737 Coal Mine Road, Missoula	MT	8	Niki Wuestenberg 563-285-1404	
	MONTANA WASTE SYSTEMS - HIGHPLAINS SANITARY LANDFILL	142 POWERLINE ROAD, FLOWEREE	MT	8	Greg Wennerberg 406-452-3143	
	Valley View Landfill	300 Highway 518, East Helena	MT	8	Dave Duffy 406-227-3600	
Incident	Planning & Response Waste Materia	als Estimator Treatment &	Disposal Faciliti	es	Guidance & Information	



Geocoded Facility Databases



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Relevant Guidance

Incident Waste Decision Support Tool (I-WASTE DST)

You are here: Home » Guidance & Information

Guidance and information contained in the Incident Waste Decision Support Tool is accessible from this page. You can access features and information that is tailored to specific categories of events. Other guidance and information that is broadly applicable to more than one event is accessible via the quick links on the right.

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Radiological/Nuclear

Radionuclide Information

Critical Infrastructure

Basic Information

Disposal

Incident Response & Cleanup Information

Low-Level Radioactive Waste Compacts

Radioactive Materials & Waste Regulations

Water Systems (Chem/Bio Contamination)

Drinking Water Treatment Plant Decon Disposal

Drinking Water System End User Items Disposal

Wastewater Treatment Plant Decon Disposal

Water Supply Distribution System Decon

Radiological Dispersal Device (RDD) Information

Basic Information

Expand all descriptions

Chemical/Biological

Basic Information Chem/Bio & Decon Agent Information Create Building Waste Inventory View Saved Building Waste Inventories View Building Waste Characteristics

Natural Disaster

Basic Information Waste & Debris Fact Sheets Debris Management Equipment

Planning Documents

Agricultural Incidents & Foreign Animal Disease **Basic Information Disposal Guidance**

Case Studies

Pathogen Information

Training Modules

Incident Planning & Response

Waste Materials Estimator

Treatment & Disposal Guidance & Information Facilities

Provide feedback

Ouick Links

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Treatment & Disposal Facilities Disposal Guidance Size Reduction Guidance Packaging/Container Guidance Hazardous Waste Transportation Regulations Waste Transportation Guidance **Browse Documents and Reports** Select an event • Then select a topic . 🕞 Go Browse Guidance Select an event ۳ Then select a topic Ŧ 🜔 Go Other Resources Key Terminology Response Management Jurisdictional Boundaries Regional, State, and Local Contacts

Other Planning & Response Tools

Laboratory Information

We have gathered relevant guidance for easy access.



Radiological/Nuclear Basic United States Environmental Protection Information Page

Basic Information	You are here: Home » Guidance & Informatio	n » Radiological/Nuclear » Basic Information
Incident Response & Cleanup Information	Radiological/Nuclear	
Radiological Dispersal Device (RDD) Information	Additional guidance and functionality specific menu items or accessing the quick links below	to radiological/nuclear events can be accessed using the following left navigation:
Low-Level Radioactive Waste Compacts	Incident Response & Cleanup Information response and cleanup	- Access information related to Radiological Dispersal Device (RDD) incident
Radionuclide Information	Radiological Dispersal Device (RDD) Inform	mation - Access information describing an RDD and descriptions and common
Radioactive Materials & Waste Regulations	 Low-Level Radioactive Waste Compacts - states, host states, and associated dispos Radioactive Information - Access availab radiation energies. Radioactive Materials & Waste Regulations topic and/or governing agency. 	Access a brief discussion of the Radioactive Waste Policy Act and view member al facilities for low-level radioactive waste compacts. In adionuclide data, including: half-life, specific activity, decay mode, and Access information describing radioactive materials and waste regulations by
	Radiological Incidents	Radioactive Waste
	 Radiological Dispersal Device (RDD) Orphan Sources Nuclear Power Plant Accidents Transportation Accidents Satellites and Rockets 	 Categories High-Level Radioactive Waste (HLW) and Spent Nuclear Fuel Transuranic Waste (TRU) Low-Level Radioactive Waste (LLRW) 11.e.(2) Byproduct Material Mixed Wastes (MHLW, MTRU, MLLW)
	Nuclear Materials	Other Waste Types Orphan Sources
	 Source Material Special Nuclear Material Byproduct Material 	Naturally-Occurring Radioactive Materials (NORM) Low Activity Radioactive Waste Transportation Treatment
	 Source Material Special Nuclear Material Byproduct Material 	Naturally-Occurring Radioactive Materials (NORM) Low Activity Radioactive Waste Transportation Treatment Brokers and Processors EXIT Disclaimer Storage Government-Owned Land/Facilities Waste Classification
	 Source Material Special Nuclear Material Byproduct Material 	Naturally-Occurring Radioactive Materials (NORM) Low Activity Radioactive Waste Transportation Treatment Brokers and Processors EXIT Disolaimer Storage Government-Owned Land/Facilities Waste Classification Disposal Federal Facilities Commercial Facilities
	Source Material Special Nuclear Material Byproduct Material Access Incident Planning & Response to create uidance and de	 Naturally-Occurring Radioactive Materials (NORM) Low Activity Radioactive Waste Transportation Treatment Brokers and Processors [EXIT Disclaimer> Storage Government-Owned Land/Facilities Waste Classification Disposal Federal Facilities Commercial Facilities e an incident record for a radiological/nuclear event, or return to the guidance Hocuments and reports
have gathe	Source Material Special Nuclear Material Byproduct Material Access Incident Planning & Response to create uidance and de red relevant	Naturally-Occurring Radioactive Materials (NORM) Naturally-Occurring Radioactive Waste Transportation Treatment Brokers and Processors Exit Disolaimer> Storage Covernment-Owned Land/Facilities Waste Classification Disposal Federal Facilities Commercial Facilities Commercial Facilities an incident record for a radiological/nuclear event, or return to the guidance for a material for the second secon



Chemical/Biological Basic Information Page

Provide feedback

Incident Waste Decision Support Tool (I-WASTE DST)

	V				
Basic Information	tou are nere: Home » Guidance & information » Chemical/Biological » Basic Information				
Chem/Bio & Decon Agent Information	Chemical/Biological				
Create Building Waste Inventory	Additional guidance and functionality specific to chemical/biological events can be accessed using the following left navigation menu items or accessing the quick links below:				
View Saved Building Waste Inventories	Chem/Bio & Decon Agent Information - View detailed information available for chemical agents, biotoxins, biological				
View Building Waste Characteristics	 agents, or decontamination agents. Hyperlinks to Material Safety Data Sheets (MSDS), Centers for Disease Control and Prevention (CDC) Fact Sheets, and Personal Protective Equipment (PPE) guidance provide users access to additional information. Create Building Waste Inventory - Create an inventory (i.e., shopping cart) of items that may require treatment or disposal. Inventories can be saved and retrieved for later use by you or other users of the tool. View Saved Building Waste Inventories - Access saved building waste inventories. View Building Waste Characteristics - Access characteristics of building waste for over 900 items. Default values for weight, volume and dimensions can be viewed. Access Incident Planning & Response to create an incident record for a chemical/biological event, or return to the guidance home page to access other relevant guidance and documents and reports. 				
	Incident Planning & Response Waste Materials Estimator Treatment & Disposal Facilities Guidance & Information				



Natural Disaster Basic Information Page





Agricultural/Foreign Animal Disease Basic Information Page

Received Freedback

Incident Waste Decision Support Tool (I-WASTE DST)

directly to USDA/APHIS

training modules.

Basic Information	You are here: Home » Guidance & Information » Agricultural Incidents & Foreign Animal Disease » Basic Information
Disposal Guidance	Agricultural Incidents & Foreign Animal Disease
Case Studies	
Pathogen Information	Additional guidance and functionality specific to agricultural incidents & foreign animal disease events can be accessed using the following left navigation menu items or accessing the quick links below:
Training Modules	 Disposal Guidance - View disposal preference hierarchies for large animal and poultry mortality. Case Studies - Access a compilation of historical incidents that includes a clearinghouse of summarized background information, disposal methods, and "lessons learned" information obtained from publicly available articles and other documents. Pathogen Information - Access several fact sheets prepared for 17 high priority pathogens. Training Modules - Access several training modules developed by the U.S. Department of Agriculture. Access to several other key resources for additional guidance is provided via the hyperlinks below: National Center for Animal Health Emergency Management National Animal Health Emergency Management System (NAHEMS) Guidelines Access Incident Planning & Response to create an incident record for an agricultural incidents & foreign animal disease event, or return to the guidance home page to access other relevant guidance and documents and reports.
We have o	Waste Materials Estimator Treatment & Disposal Facilities Guidance & Information
guidance f We also ha	or easy access. ave linked





- HPAI Carcass Disposal
- ID Disposal Options for Floods and Fires
- Ebola Response
- National Level Exercises
- New York City Bioremediation Planning
- Incorporated into other tools



 Incorporation of geospatial data and facility information into EPA GeoPlatform

Access: http://www2.ergweb.com/bdrtool/login.asp

- First-time users will need to request a user ID and password – the link above has directions for making the on-line request
- When your request is approved, your login ID and initial password will be emailed to you



Bottom Line

- Waste management is a critical component of responding to wide-area disasters, whether they are man-made or naturally occurring
- Decisions are made at the local, state, tribal, and federal level, and include the waste management facilities themselves
- Pre-incident planning for waste management is a key element of enhancing resiliency of communities to these types of incidents
- I-WASTE is intended to support pre-incident planning
- as well as decision making during an incident





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http://www2.ergweb.com/bdrtool/login.asp

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