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HAZARDOUS WASTE SHIPMENT DATA COLLECTION FROM DOE SITES

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ABSTRACT

Past practices at the U.S. Department of Energy (DOE) sites for offsite release of hazardous waste are being reviewed to determine if radioactively contaminated hazardous wastes were released to commercial treatment, storage, and disposal facilities. Records indicating the presence of radioactivity in waste shipped to and treated at a commercial incineration facility led to a ban on offsite hazardous waste shipments and investigation of past practices for offsite release of hazardous waste from the DOE sites. A House of Representatives Interior and Insular Affairs Committee oversight hearing on potentially contaminated waste shipments to commercial facilities concluded that the main issue was the lack of a uniform national standard to govern disposal of mixed waste.

Hazardous waste shipment data collected from some DOE sites revealed contaminated waste shipments were sent to commercial treatment, storage, and disposal facilities during the 1980 through 1991 reporting period. These waste shipments were determined to be radioactive based on current standards. To follow up on past shipments of waste from all DOE facilities, a data request was sent to the DOE field sites for completion. The data request required the sites to categorize the past waste shipments according to current standards as clean, likely clean, likely radioactive, or known radioactive.

Recent analyses of the radiological data gathered on past waste shipments conclude that the maximum dose to any individual was less then 0.1 millirem per year. Thus, the dose is 1000 times less than the regulatory standard of 100 millirem per year for radiation doses to the public.

INTRODUCTION

In May 1991, the Louisiana Department of Environmental Quality (DEQ) found evidence that hazardous waste received at the Baton Rouge Rollins Environmental Services (RES) incineration facility from a U.S. Department of Energy (DOE) site was contaminated with uranium. The DEQ inspections revealed that the facility had no regular procedures for testing the radioactivity of the waste it accepts. The DEQ stated that the data sheets accompanying shipments from DOE sites have always contained information on the components in the waste, but that perhaps RES employees did not recognize the uranium-235.[1]

On May 17, 1991, the U.S. Department of Energy Headquarters Environmental Restoration and Waste Management Office of Waste Operations (DOE-HQ,EM-30) directed the field to cease

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shipments of Resource Conservation and Recovery Act (RCRA) hazardous waste and/or Toxic Substances Control Act (TSCA) regulated waste. This decision to halt shipments was prompted by instances of sites using differing, and in some cases inappropriate, criteria for determining whether a waste is suitable for offsite release. The hold on shipments continues until the criteria and methods for offsite release are reviewed and approved by the DOE-HQ. This moratorium applies to any hazardous wastes that have potential for contamination; that is, waste shall be considered to be potentially contaminated if it has been used or stored in radiation control areas that could contain unconfined radioactive material or where exposure to beams of particles capable of causing activation is possible.[2]

In addition to the moratorium on the offsite shipments of RCRA/TSCA wastes, DOE-HQ requested specific information from the DOE sites on past RCRA/TSCA waste shipments. A memorandum from Leo P. Duffy[b] (referred to as the data request in this paper) requested that the sites provide DOE-HQ with detailed information concerning 1984-1991 offsite hazardous waste shipments by September 30, 1991. The referenced memorandum including the data request is provided in Appendix A.

In September 1991, the EG&G Idaho Inc., Radioactive Waste Technical Support Program (TSP) began supporting DOE-HQ Regulatory Compliance Division (EM-331) in the collection, quality review, electronic storage, and reporting of the shipment data received from the DOE sites.

DATA SUMMARY

Thirty-five sites were expected to respond to the data request, including the Uranium Mill Tailings Remedial Action and the Formerly Utilized Sites Remedial Action Project. Not all the sites were able to report their data by the September 30, 1991 deadline. Twenty-six of the 35 sites reported their data by December 31, 1991. As of October 1992, all sites except three have submitted data. The three exceptions are San Francisco Office sites, Lawrence Berkeley Laboratory, Energy Technology Engineering Center, and Stanford Linear Accelerator Center, which are currently preparing their submittals. Table 1 lists the sites that have responded to the data request.

One hundred eighty-eight commercial treatment, storage, and disposal (TSD) facilities located in 35 states have received wastes from 32 DOE sites for final treatment and/or disposal. Table 2 lists these final TSD contractors along with the prime/broker contractors who provided management services for the hazardous wastes reported by the DOE sites. As of October 1992, 45,000 cubic meters and 85,000,000 kilograms of hazardous waste shipped to commercial TSD facilities have been reported by 32 DOE sites as shown in Table 1, "Offsite Hazardous Waste Shipment Site Summary for all Final Treatment/Storage/Disposal Facilities."

The number of manifests reported by each of the sites ranged from seven to over 2000. Each manifest included anywhere from one to several hundred unique waste descriptions. Approximately 7,500 manifests summarizing over 16,000 waste descriptions have been reported by the 32 sites.

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b. Memorandum Leo P. Duffy to Distribution, "Data Requirements on Past Shipments of Hazardous/Toxic Wastes Potentially Contaminated With Radioactivity," August 26, 1991.

DATA REQUIREMENTS

The DOE-HQ data request instructed the sites to categorize the waste shipments as clean, likely clean, likely radioactive, or known radioactive. Guidance for assigning these categories is provided in the data request. This request asked the sites to complete two types of data forms, summary data forms and detailed data forms.

The summary forms are intended to summarize all the waste a site had shipped to each final commercial TSD contractor for treatment and/or disposal from 1984 through 1991. The detailed forms request information on specific waste shipments sent to each final TSD contractor on a manifest level. The detailed data form requests descriptions and quantities of each waste type shipped per manifest. The form also requests a list of isotopes that are, or could be, associated with each waste type. A complete submittal from each site includes one summary form for each final commercial TSD facility and all the detailed data forms for every manifest used to ship waste to that TSD facility.

Bulk or volumetric and surface decision criteria are requested on the summary data form for years 1984 through 1991. The decision criteria are also requested on the detailed data form for each waste categorized as likely clean or likely radioactive. The summary data form also requests how naturally occurring radioactivity was accounted for in the decision criteria.

DATA QUALITY REVIEW PROCESS

The TSP developed guidance for the quality review of the data submittals to aid in determining whether each site's data submittal meets all the requirements set forth in the DOE-HQ data request. The review process steps through the two data forms, and a check is performed on each data entry field. In performing review of the data submittals, it is necessary to understand the intended use of the data. DOE-HQ intends to use the data for several evaluations, including

- Determine quantities of clean, likely clean, likely radioactive, and known radioactive wastes shipped from DOE sites to commercial TSD facilities for final treatment and/or disposal.

- Identify the decision criteria used by each DOE site to determine whether or not waste shipped in the past to commercial TSD facilities was acceptable for offsite release.

- Estimate the potential radiological impacts at each TSD contractor from treatment and/or disposal of DOE wastes.

Each data submittal is examined against the review guidelines, and a preliminary memorandum is written to document the concerns identified during the review. This memorandum contains only comments to be resolved. The memorandum is sent to the respective site, and comment resolution is reached by phone or mail. Once the comments are resolved, a final memorandum is issued and distributed to DOE-HQ and all subcontractor or contractor personnel involved in the data submittal. The final memorandum summarizes the data submittal and documents any outstanding issues and concerns along with all comments and respective resolutions.

Some of the most common concerns identified in the review process include

- Final treatment and/or disposal facility was not identified for every waste shipment
- Final treatment and/or disposal facility information, when reported, was incomplete for some waste shipments [i.e., missing U.S. Environmental Protection Agency (EPA) identification number, location, technology, etc.]
- Quantity discrepancy between summary TSD forms and detailed waste description forms
- Missing or incomplete identification of decision criteria in place during the time of shipment to determine offsite releasability of wastes
- Most sites defaulted to identifying DOE Order 5400.5 for surface contamination criteria and did not provide bulk decision criteria
- Missing or incomplete information on how naturally occurring background radiation was accounted for in determining offsite releasability of wastes
- Detailed waste descriptions not provided.

Once the quality review process is complete for a site's data submittal, the data is ready for electronic storage and subsequent reporting.

DATA SYSTEM DESIGN AND DEVELOPMENT

The Hazardous Waste Shipment Data System (HWSDS) was developed to function as a collection and reporting tool for the shipment data. The HWSDS contains shipment manifest information from the detailed data forms. The data system is modeled after this manifest information; that is, each manifest originates at a DOE site, is handled by a prime/broker TSD contractor, and ends at a final TSD facility. Each manifest includes shipment date, number of containers, and estimate of the quantity of waste. A manifest can include different kinds of waste that can go to different final TSD facilities for treatment and/or disposal. The data system also contains waste descriptions, waste quantities, waste categories (clean, likely clean, likely radioactive, and known radioactive), estimates of isotopes and activity levels, and decision criteria used in determining offsite releasability. This information is stored in dBase data files with standardized database structures. The HWSDS software programs are written in FoxPro and Clipper and are designed to run on PC-based hardware.

The HWSDS contains thousands of records of detailed information from shipping manifests. The data is entered into the HWSDS by manual input using the HWSDS data entry screens or translated into the file structures from various electronic file formats, if available. The sites submitted data using a variety of mass and volume units. Upon entry into the HWSDS, the units are converted to standardized units of cubic meters for volume and kilograms for mass. If bulk decision criteria are provided, they are converted to a standardized concentration of nanocuries per kilogram. When isotope concentrations are provided, they are converted to a standardized concentration of nanocuries per kilogram, and an activity in nanocuries is automatically calculated. A worst case activity estimate is automatically calculated based on standardized bulk decision criteria and waste quantity.

The HWSDS reporting capabilities are designed to allow the shipment data to be viewed from either the perspective of a TSD facility as a receiver of waste, or from the perspective of a DOE site as a sender of waste. The TSD facility is interested in how much waste it received, what types of waste it received, when it received waste, and from whom it received that waste. The site is interested in how much waste it shipped, what types of waste it shipped, when it shipped waste, and to whom it shipped that waste. The HWSDS reports are designed to answer these summary level questions from either perspective along with reporting the detailed level manifest data.

The HWSDS allows network access by multiple users and is designed for easy use with little training.

DATA SYSTEM APPLICATION

The data contained in the HWSDS has been used for multiple purposes and will continue to provide actual hazardous waste shipment quantities from DOE sites to commercial TSD facilities.

The House of Representatives Committee on Interior and Insular Affairs conducted a Congressional investigation of offsite disposal or treatment of solid waste containing radioactive materials from the DOE facilities. The investigation commenced with a letter to the Secretary of Energy dated December 13, 1991.[c] Oversight and investigation hearings conducted by the House Interior and Insular Affairs Committee began on February 20, 1992. HWSDS shipment data reports provided the basis for DOE's detailed analysis on past shipments of hazardous wastes from the sites to commercial TSD facilities.

To ensure that the public health has not been endangered by the shipment or TSD of the wastes, DOE performed worst case dose assessment for hazardous wastes sent from DOE sites to commercial TSD facilities. HWSDS shipment data reports were used as the basis for calculating the dose assessment.

The data from the HWSDS has not only provided the basis to calculate dose assessment on past shipments but has also been used by Battelle Pacific Northwest Laboratories to project future dose assessment at TSD facilities receiving wastes from DOE sites. The results of the dose assessment activities will assist in establishing uniform methodologies and criteria for determining offsite releasability of potentially radioactive hazardous wastes from DOE sites.

In addition to providing the HWSDS shipment data to ongoing efforts, the TSP provided copies of the HWSDS to DOE sites that did not have hazardous waste information systems. The DOE sites used the HWSDS to manually input and report their past shipment data for response to the DOE-HQ data request.

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c. Letter from U.S. House of Representatives Committee on Interior and Insular Affairs, George Miller, Chairman to Secretary of Energy, James D. Watkins, December 13, 1991.

PLANNED ACTIVITIES

The hazardous waste data stored in the HWSDS provides a comprehensive collection of historical shipment data in an easily retrievable format. There are many potential uses for this information such as dose assessment activities and other analyses requiring actual quantities of hazardous wastes.

An independent review of the shipment data collected from various sites is planned. The principle objective of this independent review is to determine whether or not the shipments reported were properly categorized according to DOE-HQ definitions for waste categories (clean, likely clean, likely radioactive, and known radioactive). The process for categorizing shipment data is documented in Figure 1, "Decision Tree for Hazardous Waste Shipment Categorization." These categories were defined in the data request as follows:

Known Radioactive Waste For known radioactive waste, sampling and analysis data show radioactivity *above background* (background includes natural levels of radiation in materials) or surface contamination exceeds DOE Order 5400.5 guidelines.

Thus, this is waste for which sampling and analysis shows radioactivity was added to the volume or bulk of the waste as a result of DOE operations (i.e., radioactivity is present above background), or survey results show that surface contamination levels exceeding DOE Order 5400.5 guidelines.

Clean Waste Clean waste originates outside a radioactive materials management area (RMMA) or is waste that originates within an RMMA for which documented evidence of administrative controls, process knowledge, or sampling and analysis data show that no radioactivity was added to the waste bulk or volume by DOE operations and the surface contamination is less than DOE Order 5400.5 guidelines.

Likely Radioactive Waste Likely radioactive waste is waste that is not categorized as known radioactive or clean but is similar in form/type and originates from the same process/areas as known radioactive waste.

For these wastes, documented evidence of administrative controls, process knowledge, or analytical data is not available to show that no radioactivity was added to the waste bulk or volume by DOE operations.

Likely Clean Waste Likely clean waste is waste that originated in an RMMA but is not categorized as known radioactive, likely radioactive, or clean.

For these wastes, documented evidence of administrative controls, process knowledge, or analytical data is not available to show that no radioactivity was added to the waste bulk or volume by DOE operations, and the surface contamination is less than DOE Order 5400.5 guidelines.

An independent review of the shipment data reported by the Savannah River Site (SRS) is near completion. The overall hazardous waste management and offsite release process from 1987-1991 will be documented in the SRS Offsite Hazardous Waste Shipment Data Validation Report. This

report will document sampling and analysis and surface surveying techniques and procedures used before offsite release at SRS along with the proper categorization of SRS hazardous waste shipments.

CONCLUSION

Among the issues that have surfaced since the RES incidence are the inconsistent, and sometimes, incorrect manner in which the sites determine whether a waste is suitable for offsite release. Inconsistent methodologies for testing potential radioactivity in hazardous wastes and inconsistent decision criteria for determining whether the waste is suitable for offsite release have been identified. The "Performance Objective for Certification of Non-Radioactive Hazardous Waste"[3] was written to provide requirements for determining whether a RCRA hazardous or TSCA regulated waste is radioactive. The requirements of this document and other DOE-HQ efforts for setting limits for levels of radioactivity that can be safely released for treatment and/or disposal are activities toward establishing some consistency in determining whether waste is suitable for offsite release.

Analyses of past waste shipments conclude that the maximum dose to any individual was less then 0.1 millirem per year. Thus, the dose is 1000 times less than the regulatory standard of 100 millirem per year for radiation doses to the public.

REFERENCES

1. *Nuclear Waste News*, July 18, 1991, p. 286.

2. U.S. Department of Energy, "Radiation Protection of the Environment and Public," DOE Order 5400.5, February 8, 1990.

3. Office of Environmental Restoration and Waste Management Office of Waste Operations, "Performance Objective for Certification of Non-Radioactive Hazardous Waste," November 15, 1991.

TABLE 1 10/18/92

OFFSITE HAZARDOUS WASTE SHIPMENT
SITE SUMMARY FOR ALL FINAL TREATMENT/STORAGE/DISPOSAL FACILITIES

Calendar Year: 1984-1991[a]

Site Name	Volume (m3)	Mass (kg)	Estimated Activity (mCi)
AMES Laboratory	27.95	-	0.000
Argonne National Laboratory - East	1776.46	66047.80	0.000
Brookhaven National Laboratory	681.18	-	0.000
Colonie Interim Storage Site	0.28	24927.41	0.000
Feed Materials Production Center	7.91	811.03	0.000
FERMI National Accelerator Laboratory	958.28	330876.33	0.000
Grand Junction Project Office	8.06	5090.73	0.000
Hanford Site	41.83	3749673.16	0.000
Idaho National Engineering Laboratory	719.82	1119416.39	0.000
Inhalation Toxicology Research Institute	92.80	-	0.000
Kansas City Plant	492.01	56582574.10	0.000
Lab for Energy-Related Health Research	22.04	5542.70	0.000
Lawrence Livermore National Laboratory	18862.92	4860295.59	0.000
Los Alamos National Laboratory	1934.04	2713422.52	0.000
Mound Plant	-	936896.04	0.000
Nevada Test Site	14043.41	383242.12	0.000
Niagra Falls Storage Site	-	340898.54	0.000
Oak Ridge Gaseous Diffusion Plant[a]	-	1519529.99	24.909
Oak Ridge National Laboratory[a]	-	1368570.86	0.000
Paducah Gaseous Diffusion Plant[a]	-	1659185.27	29.428
Pantex Plant	1097.59	-	0.000
Pinellas Plant	990.81	419366.80	0.000
Portsmouth Gaseous Diffusion Plant[a]	-	662731.00	6.093
Princeton Plasma Physics Laboratory	667.72	855273.90	0.000
Rocky Flats Plant	289.35	305865.52	0.000
Sandia National Laboratory - Albuquerque, NM	-	1673451.00	0.000
Sandia National Laboratory - Livermore, CA	2626.85	3658.73	0.000
Savannah River Site	-	825319.80	0.000
Uranium Mill Tailings Remedial Action	197.97	3538.08	0.000
West Valley Demonstration Project	-	41186.85	0.000
Weldon Spring Site Remedial Action Project	103.57	133808.37	0.000
Y12 Plant[a]	-	4282262.99	45.062
Shipment Quantity Totals	45642.85	84873463.62	105.492

a. Oak Ridge Sites include shipments from 1980-1991.

TABLE 2

COMMERCIAL HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

TSD Name	City, State	EPA ID Number
7-7 TRANSPORTATION	WADSWORTH, OH	OHD000772558
ADCOM EXPRESS	TINLEY PARK, IL	ILT180015273
ALLIED TECHNOLOGY GROUP	FREMONT, CA	CAD982462020
ALTAMONT SANITARY LANDFILL	LIVERMORE, CA	CAD981382732
ALTAMONT SANITARY LANDFILL	LIVERMORE, CA	CAX000084459
ALTERNATE ENERGY RESOURCES	AUGUSTA, GA	GAD033582461
AMERICAN CHEMICAL & REFINING CO.	WATERBURY, CT	CTD001184894
AMERICAN CHEMICAL & REFINING CO.	VILLA PARK, IL	ILD000675249
AMERICAN ENVIRONMENTAL MGMT CO.	RANCHO CORDOVA, CA	CAD980884183
AMERICAN RECOVERY	BALTIMORE, MD	MDD074923392
AMERICAN SMELTING AND REFINING	DUARTE, CA	-
AMERICAN WASTE	MAYWOOD, IL	ILD000716894
ANDERSON SOLID WASTE, INC.	ANDERSON, CA	CAD981388952
APPROPRIATE TECHNOLOGIES II	CHULA VISTA, CA	CAT080010101
APTUS	COFFEYVILLE, KS	KSD981506025
APTUS	LAKEVILLE, MN	MND980791321
APTUS	GRANTSVILLE, UT	UTD981552177
AQUA-TECH ENVIRONMENTAL	GREER, SC	SCD058754789
AQUA-TECH ENVIRONMENTAL	PORT WASHINGTON, WI	WID066888017
ASH GROVE CEMENT CO.	LOUISVILLE, NE	NED007260672
ASH GROVE CEMENT CO.	FOREMAN, AR	ARD981512270
ASH GROVE CEMENT CO.	CHANUTE, KS	KSD031203318
AVGANIC INDUSTRIES	COTTAGE GROVE, WI	WID000808824
B & J SANITARY LANDFILL	VACAVILLE, CA	CAD982042475
BARON-BLAKESLEE	NEWARK, CA	CAD074644659
BARON-BLAKESLEE	CICERO, IL	ILD051937068
BATTERY DISPOSAL TECHNOLOGY	CLARENCE, NY	NYD000632372
BEAVER OIL	HODGKINS, IL	ILD064418353
BEST ENVIRONMENTAL	CHANNAHON, IL	-
BETHLEHEM APPARATUS	HELLERTOWN, PA	PAD002390961
BKK CORPORATION	WEST COVINA, CA	CAD067786749
BOLIDEN METECH	GILROY, CA	CAD077182293
BRES-LUBE USA	EAST CHICAGO, IN	-
BROCO, INC.	RIALTO, CA	CAT080022148
BURLINGTON ENVIRONMENTAL	WASHOUGAL, WA	WAD092300250
C.P. CHEMICALS, INC.	SUMTER, SC	SCD070371885
C.P. INORGANICS	JOLIET, IL	ILD062480850
C.R. WARNER CO.	WOODSTOWN, NJ	NJD011881174
CALIFORNIA A.E.T.C.	RICHMOND, CA	CAT080014079
CALIFORNIA OIL RECYCLERS	NEWARK, CA	CAD980695761
CALIFORNIA SOLVENT RECYCLERS	EAST PALO ALTO, CA	CAT080031248
CAPITAL SILVER SERVICES INC.	GALLATIN, TN	TND078221249
CASMALIA RESOURCES	CASMALIA, CA	CAD020748125
CECOS	LIVINGSTON, LA	LAD000618298
CECOS	BRISTOL, CT	CTD000604488
CECOS	NIAGARA FALLS, NY	NYD080336241
CECOS	WILLIAMSBURG, OH	OHD087433744
CECOS	LAKE CHARLES, LA	LAD000618256
CHEM CLEAR	CHESTER, PA	PAD000731026
CHEM-MET SERVICES	WYANDOTTE, MI	MID096963194
CHEMICAL ANALYSIS	ROMULUS, MI	MID985568021
CHEMICAL CONSERVATION CORP.	UNKNOWN, NJ	NJD097407084
CHEMICAL PROCESSORS, INC.	SEATTLE, WA	WAD000812909
CHEMICAL PROCESSORS, INC.	KENT, WA	WAD991281767
CHEMICAL RECLAMATION SERVICES	AVALON, TX	TXD046844700

COMMERCIAL HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

TSD Name	City, State	EPA ID Number
CHEMICAL WASTE MANAGEMENT	FARMINGDALE, NY	NYD000691949
CHEMICAL WASTE MANAGEMENT	NEWARK, NJ	NJD089216790
CHEMICAL WASTE MANAGEMENT	WEST CARROLTON, OH	OHD093945293
CHEMICAL WASTE MANAGEMENT	EMELLE, AL	ALD000622464
CHEMICAL WASTE MANAGEMENT	PHOENIX, AZ	AZT050010180
CHEMICAL WASTE MANAGEMENT	FREMONT/COALINGA, CA	CAD003986718
CHEMICAL WASTE MANAGEMENT	KETTLEMAN CITY, CA	CAT000646117
CHEMICAL WASTE MANAGEMENT	POMPANO BEACH, FL	FLD000776708
CHEMICAL WASTE MANAGEMENT	MODEL CITY, NY	NYD049836679
CHEMICAL WASTE MANAGEMENT	CHICAGO, IL	ILD000672121
CHEMICAL WASTE MANAGEMENT	SAUGET, IL	ILD098642424
CHEMICAL WASTE MANAGEMENT	BRAINTREE, MA	MAD053452637
CHEMICAL WASTE MANAGEMENT	PORT ARTHUR, TX	TXD000838896
CHEMICAL WASTE MANAGEMENT	SULPHUR, LA	LAD000777201
CHEMICAL WASTE MANAGEMENT	MILLINGTON, IN	IND000772186
CHEMICAL WASTE MANAGEMENT	KANSAS CITY, MO	MOD300011194
CHEMICAL WASTE MANAGEMENT	FORT WAYNE, IN	IND078911146
CHEMICAL WASTE MANAGEMENT	FORT WAYNE, IN	IND099202681
CHEMICAL WASTE MANAGEMENT	GENEVA, IL	-
CHEMICAL WASTE MANAGEMENT	ALSIP, IL	ILD074411745
CHEMICAL WASTE MANAGEMENT (CID CORP)	CALUMET CITY, IL	ILD010284248
CHEMICAL WASTE MGMT. OF THE N.W.	ARLINGTON, OR	ORD089452353
CLEAN HARBORS	WOBURN, MA	MAD039322250
CLEAN HARBORS	NATICK, MA	MAD980523203
CLEAN HARBORS OF CHICAGO	CHICAGO, IL	ILD000608471
CLEAN HARBORS OF CLEVELAND	CLEVELAND, OH	OHD000724153
CLEMBOX DEBRIS AND RECYCLING	SAN FRANCISCO, CA	-
CONTINENTAL/RESOURCE RECOVERY	HANIBAL, MO	MOD054018288
CUSTOM ENVIRONMENTAL TRANSPORT	UNKNOWN, LA	LAD981059017
CUSTOM ENVIRONMENTAL TRANSPORT	UNKNOWN, DE	DED980918858
CYANOKEM	DETROIT, MI	MID098011992
CYLINDER RECON COMPANY	KEARNY, NJ	NJD000632240
CYPRUS MIAMI MINING CO	CLAYPOOL, AZ	AZD060624251
DAVID H. FELL & CO. INC.	LOS ANGELES, CA	CAD981384332
DEMCO	COALFIELD, TN	INACTIVE1986
DEMENNO/KERDOON	COMPTON, CA	CAT080013352
DESERT MOUNTAIN OIL	SPARKS, NV	NVD980892632
DETREX	VERNON, CA	CAD020161642
DIVERSIFIED SOURCES & SERVICES	KINGSTON, TN	TND982109142
DIVERSIFIED SYSTEMS, INC.	ATHENS, TN	TND034547141
DREW RESOURCES	BERKELEY, CA	CAD070148432
E.I. DUPONT & CO.	DEEPWATER, NJ	NJD002385730
EASTERN SMELTING	LYNN, MA	MAD001020775
EG&G IDAHO, INC., C\O US DEPARTMENT	SCOVILLE, ID	ID4890008952
ENGLEHARD INDUSTRIES WEST, INC.	ANAHEIM, CA	CAD000612150
ENSCO	WHITE BLUFF, TN	TND980729305
ENSCO	EL DORADO, AR	ARD069748192
ENSCO	DALTON, GA	GAD000222083
ENSR	PHILADELPHIA, PA	-
ENSR OPERATIONS	CANTON, OH	OHD981100969
ENVIROCHEM SERVICES	ZIONSVILLE, IN	-
ENVIRONMENTAL ENTERPRISES	CINCINNATI, OH	OHD083377010
ENVIRONMENTAL INT'L ELECTRICAL SERVICES	KANSAS CITY, MO	MOD980973556
ENVIRONMENTAL MANAGEMENT & CONTROLS	TURLOCK, CA	CAT080011828
ENVIRONMENTAL PACIFIC	AMITY, OR	ORD980977334
ENVIRONMENTAL SPECIALISTS, INC.	ALBUQUERQUE, NM	NMD986669216
ENVIRONMENTAL WASTE ENTERPRISES	ELOY, AZ	AZD980816102

COMMERCIAL HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

TSD Name	City, State	EPA ID Number
ENVIRONMENTAL WASTE RESOURCES	WATERBURY, CT	CTD072138969
ENVIROSAFE SERVICES OF IDAHO	GRANDVIEW, ID	IDD073114654
ENVIROTECH	MORRIS, IL	-
ERICKSON, INC.	RICHMOND, CA	CAD009466392
ETICAM	EAST FERNLEY, NV	NVD980895338
EVANS DRUM, CO.	RICHMOND, CA	CAD000415232
EVERGREEN LANDFILL	NORTHWOOD, OH	OHD068111327
EVERGREEN OIL	NEWARK, CA	CAD980887418
EWR	COAL CITY, IL	ILD087157251
EXCELTECH, INC.	FREMONT, CA	CAD980815054
EXCELTRANS, INC.	BENICIA, CA	CAD981982663
FONDESSY ENTERPRISES	OREGON, OH	OHD045243706
FORWARD INCORPORATED	STOCKTON, CA	CAD990794133
FOX VALLEY DISPOSAL	BATAVIA, IL	-
FRONTIER CHEMICAL	NIAGARA FALLS, NY	NYD043815703
G&L RECOVERY SYSTEMS	ASHTABULA, OH	OHD981093420
GENERAL BATTERY	READING, PA	PAD990753089
GENERAL ELECTRIC	CHICAGO, IL	ILD070015714
GENERAL ELECTRIC COMPANY	DENVER, CO	COD062753702
GENERAL ELECTRIC COMPANY	CINCINNATI, OH	OHD074713561
GIANT RESOURCE RECOVERY INC.	HARLEYVILLE, SC	SCD003351699
GIBRALTAR CHEMICAL RESOURCES	WINONA, TX	TXD000742304
GIBSON OIL AND REFINING COMPANY	BAKERSFIELD, CA	CAD980003177
GNB, INC.	VERNON, CA	CAD097854541
H&H SHIP SERVICE	SAN FRANCISCO, CA	CAD004771168
HALLMARK METALS, INC.	MT. VERNON, WA	WAD980976906
HAZ CONTROL INC.	GILROY, CA	CAD000628149
HAZCHEM ENVIRONMENTAL SERVICES	TUCSON, AZ	AZD982484578
HEAT ENERGY, INC.	DALLAS, TX	TXD980624035
HERITAGE ENVIRONMENTAL	INDIANAPOLIS, IN	IND093219012
HERITAGE ENVIRONMENTAL	ROMEOVILLE, IL	-
HIGH VOLTAGE MAINTENANCE	DAYTON, OH	OHD004483210
HRI/KDM	SAN ANTONIO, TX	TXD052649027
HUNT CHEMICAL CORP.	ROLLING MEADOWS, IL	ILT053218251
HUNTER/KECK	WEST CHICAGO, IL	-
HYDROCARBON RECYCLERS, INC.	TULSA, OK	OKD000632737
HYDROCARBON RECYCLERS, INC.	WICHITA, KS	KSD007246846
INDUSTRIAL ELEC. ENGINEERING & TESTING	ALBUQUERQUE, NM	-
INTERNATIONAL METALS RECLAMATION CO.	ELLWOOD CITY, PA	PAD087561015
IT CORP OIL REPROCESS FACILITY	MARTINEZ, CA	CAD000092619
IT CORPORATION	MARTINEZ, CA	CAD000094771
IT CORPORATION	BENICIA, CA	CAD000060012
IT CORPORATION	SAN JOSE, CA	CAD000633115
IT TRANSPORTATION	SAN JOSE, CA	CAD000063311
KEERS ENVIRONMENTAL	ALBUQUERQUE, NM	NMD147273528
KETTLEMAN HILLS LANDFILL	KETTLEMAN CITY, CA	CAT000646083
KINSBURSKY	ANAHEIM, CA	CAD088504881
LAIDLAW ENVIRONMENTAL SERVICES	REIDSVILLE, NC	NCD000648451
LAIDLAW ENVIRONMENTAL SERVICES	BESSEMER, OH	OHD980569438
LAIDLAW ENVIRONMENTAL SERVICES	PINEWOOD, SC	SCD070375985
LAIDLAW ENVIRONMENTAL SERVICES	MARTINEZ, CA	CAD982373664
LAIDLAW ENVIRONMENTAL SERVICES	ROEBUCK, SC	SCD981467616
LAIDLAW ENVIRONMENTAL SERVICES	GREENBRIER, TN	TND000645770
LAIDLAW ENVIRONMENTAL SERVICES	BARTOW, FL	FLD980729610
LAIDLAW ENVIRONMENTAL SERVICES	LAUREL, MD	MDD980554653
LAIDLAW ENVIRONMENTAL SERVICES	CLEARWATER, FL	FLD981474802

COMMERCIAL HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

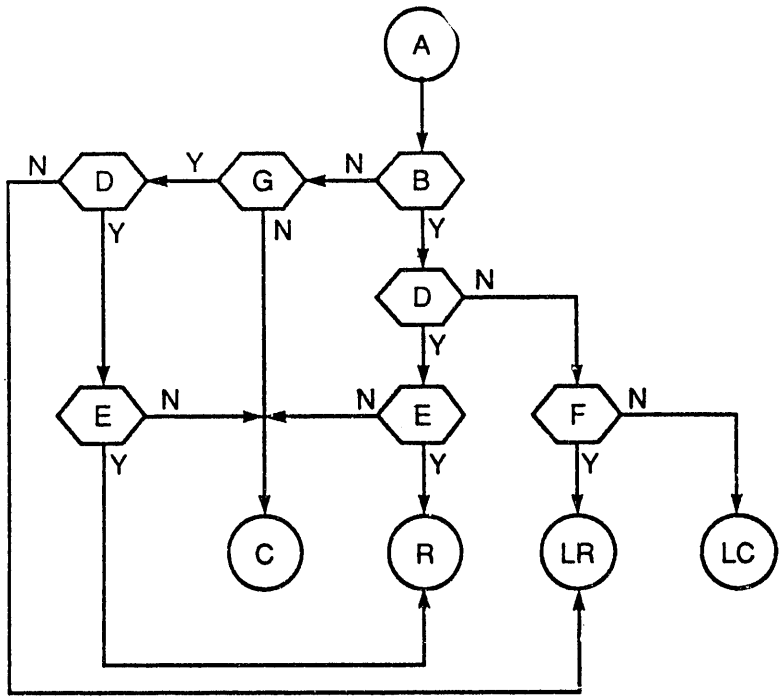
TSD Name	City, State	EPA ID Number
LAIDLAW ENVIRONMENTAL SERVICES	PECATONICA, IL	ILD980502744
LAIDLAW ENVIRONMENTAL SERVICES	CROWLEY, LA	LAD079464095
LILLYBLAD PETROLEUM, INC.	TACOMA, WA	WAD027543032
LLNL	LIVERMOR[illegible], CA	CA2890012584
LLNL SITE 300	TRACY, CA	CA2890090002
LWD	CALVERT CITY, KY	KYD088438817
M&M CHEMICAL AND EQUIPMENT	ATTALLA, AL	ALD070513767
MALONE SERVICE COMPANY	TEXAS CITY, TX	TXD027147115
MAR-COR INDUSTRIES	CHICAGO, IL	ILD984774695
MAR-COR INDUSTRIES	NORTHBROOK, IL	ILD032381550
MAR-COR INDUSTRIES	SKOKIE, IL	ILD982069601
MARBLEHEAD MNT. FACILITY	GRANTSVILLE, UT	UTD051294502
MARINE SHALE PROCESSORS	AMELIA, LA	LAD981057706
MERCURY REFINING, INC.	ALBANY, NY	NYD048148175
METCALF AND ASSOC.	ST. CHARLES, MO	-
MICHIGAN DISPOSAL	BELLEVILLE, MI	MID000724831
MICRO METALLICS CORP.	SAN JOSE, CA	CAD069124717
MID STATES RECYCLING	ROSEMONT, IL	ILD052350402
MONAHANS SANITARY LANDFILL	MONAHANS, TX	-
MR. FRANK	MATTESON, IL	ILD069506160
NATIONAL ENVIRONMENTAL CORP.	UNKNOWN, CA	CAD980674022
NOBLE OIL CO.	VINCETOWN, NJ	NJD980649024
NORRIS INDUSTRIES	LOS ANGELES, CA	CAD097030993
NORTH AMERICAN ENVIRONMENTAL	TACOMA, WA	WAD980978142
NORTH TEXAS CEMENT CO.	MIDLOTHIAN, TX	TXD007926496
NORTHWEST ENVIROSERVICE, INC.	SEATTLE, WA	WAD058367152
NSSI RECOVERY	HOUSTON, TX	TXD928560294
OHM RESOURCE RECOVERY	MORROW, GA	GAD096629282
OIL & SOLVENT PROCESS CO.	AZUSA, CA	CAD008302903
OIL & SOLVENT PROCESS CO.	HENDERSON, CO	COD980591184
OIL PROCESS CO.	LOS ANGELES, CA	CAD050806850
OKLAHOMA INDUSTRIAL SILVER	EDMOND, OK	OKD981057722
OLDOVER CORP.	GREEN COVE SPRINGS, FL	FLD000737312
OMEGA RECOVERY SERVICES	WHITTIER, CA	CAD042245001
PACIFIC ENERGY AND MINING	RENO, NV	-
PACIFIC TREATMENT	SAN DIEGO, CA	CAD095894556
PACIFIC WEST NUCLEAR ENVIRONMENTAL	SAN DIEGO, CA	CAR990019226
PATCHEM/RIVER CEMENT	FESTUS, MO	MOD050232560
PCB INC	KANSAS CITY, KS	KSD980963565
PCB INC OF MISSOURI	KANSAS CITY, MO	MOD980633044
PEN-ROB CORPORATION LANDFILL	JOSEPH CITY, AZ	AZ0000000150
PETRO-CHEM PROCESSING INC.	DETROIT, MI	MID980615291
PETROCHEM	LEMONT, IL	ILD085349264
PETROLEUM RECYCLER CORP.	PATTERSON, CA	CAD083166728
PETROLEUM-RECYCLING, INC.	SIGNAL HILL, CA	CAT080011059
PGP INDUSTRIES	SANTA FE SPRINGS, CA	CAD060398229
POLLUTION CONTROL	EAST CHICAGO, IN	IND000646943
PPM INC.	KANSAS CITY, MO	MOD069277549
PPM INC.	PHILADELPHIA, PA	PAD981113749
QUADREX	GAINESVILLE, FL	FLD980711071
QUICKSILVER	BRISBANE, CA	CAD981424732
R&D FABRICATING AND MANUFACTURING	COLFAX, LA	LAD981055791
RADIAC RESEARCH	BROOKLYN, NY	NYD049178296
RAMOS ENVIRONMENTAL SERVICES	WEST SACRAMENTO, CA	CAD044003556

COMMERCIAL HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

TSD Name	City, State	EPA ID Number
RAMSEY CHEMICALS	VALDOSTA, GA	GAD093380814
RAY TECH TRANSPORT	TINLEY PARK, IL	ILD98093403
RECYCLING RESOURCES	PHOENIX, AZ	AZD049318009
RESOURCE SERVICES	SPRINGFIELD, MO	MOD980688840
REZULTZ	VINELAND, NJ	NJD[illegible]995693
RHO-CHEM	INGLEWOOD, CA	CAD008364432
RINCHEM COMPANY, INC.	ALBUQUERQUE, NM	NMD002208627
ROLLINS ENVIRONMENTAL SERVICES	BRIDGEPORT, NJ	NJD053288239
ROLLINS ENVIRONMENTAL SERVICES	BATON ROUGE, LA	LAD010395127
ROLLINS ENVIRONMENTAL SERVICES	DEER PARK, TX	TXD055141378
ROLLINS ENVIRONMENTAL SERVICES	BENSENVILLE, IL	-
ROMIC CHEMICAL CORP.	CHANDLER, AZ	AZD009015389
ROMIC CHEMICAL CORP.	EAST PALO ALTO, CA	CAD009452657
ROSS ELECTRIC OF WASHINGTON, INC.	CHEHALIS, CA	CAD980835268
ROSS INCINERATION SERVICES	GRAFTON, OH	OHD048415665
S&W WASTE	SOUTH KEARNY, NJ	NJD991291105
S.D. MEYERS	TALLMADGE, OH	OHD053576294
SAFETY KLEEN	PASCO, WA	WAD980978746
SAFETY KLEEN	ALBUQUERQUE, NM	NMD000804294
SAFETY KLEEN	AMARILLO, TX	TXD000747410
SAFETY KLEEN	WICHITA FALLS, TX	TXD000747428
SAFETY KLEEN	DENTON, TX	TXD077603371
SAFETY KLEEN	NEW CASTLE, KY	KYD053348108
SAFETY KLEEN	ELGIN, IL	ILD000805911
SAFETY KLEEN	SCHAUMBURG, IL	ILD079749073
SAFETY KLEEN	OAKLAND, CA	CAD053044053
SAFETY KLEEN	SALIDA, CA	CAT000613968
SAFETY KLEEN	RANCHO CORDOVA, CA	CAT000613950
SAFETY KLEEN	TIPP CITY, OH	OHD980683155
SAFETY SPECIALIST, INC.	SANTA CLARA, CA	CAD010917805
SANITARY SYSTEMS SERVICE	PITTSBURGH, PA	-
SEABOARD CHEMICAL	JAMESTOWN, NC	NCD071574164
SETTLERS HILL	BATAVIA, IL	-
SILVER RECOVERY ASSOCIATES	LONGMONT, CO	COD789008967
SOL-PRO	TACOMA, WA	WAD981769110
SOLOMON ELECTRIC SUPPLY	KANSAS CITY, MO	KSD054757646
SOLVENT SERVICES, INC.	SAN JOSE, CA	CAD059494310
SOLVENTS RECOVERY SERVICES OF NEW JERSEY	LINDEN, NJ	NJD002182897
SOUTH WINDSOR METALLURGICAL	SOUTH WINDSOR, CT	CTD981205271
SOUTHDOWN ENVIRONMENTAL SYSTEMS	CINCINNATI, OH	OHD000816629
SOUTHERN CALIFORNIA CHEMICAL	SANTA FE SPRINGS, CA	CAD008488025
SOUTHERN CALIFORNIA CHEMICAL	GARLAND, TX	TXD047823265
SOUTHWEST HAZARD CONTROL	TUCSON, AZ	AZD980887434
SPECTRON	ELKTON, MD	MDD000218008
STAMCO	SAN MARTIN, CA	CAD063547996
SYSTECH ENVIRONMENTAL	LEBEC, CA	CAT080031628
SYSTECH ENVIRONMENTAL	FREDONIA, KS	KSD980633259
SYSTECH ENVIRONMENTAL	PAULDING, OH	OHD005048947
TCD SERVICES	MORRIS, IL	ILD087153995
TECHNICAL ENVIRONMENTAL SERVICES	LAPORTE, TX	TXD982290140
TEXAS INDUSTRIES	MIDLOTHIAN, TX	TXD007349327
THE NDL ORGANIZATION	PEEKSKILL, NY	NYD045662921
THERMALKEM	ROCK HILL, SC	SCD044442333
TIPTON ENVIRONMENTAL TECHNOLOGY	TIPTON, MO	MOD981506611
TRANSTEC ENVIRONMENTAL	CANTON, OH	OHD981954571
TREATMENT TX-1	HOUSTON, TX	TXD055135388
TRICIL	MEMPHIS, TN	TND000772277

COMMERCIAL HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

TSD Name	City, State	EPA ID Number
TECHNICAL TRANSPORT INC.	UNKNOWN, TX	TXD987986106
TRINITY CHEMICAL	MOUND VALLEY, KS	KSD980687065
U.S. ECOLOGY	BEATTY, NV	NVT330010000
U.S. ECOLOGY	RICHLAND, WA	WAD000000025
U.S. ECOLOGY	PLEASANTON, CA	-
UNISON TRANSFORMER SERVICES	CLEARFIELD, UT	UTD982589145
UNISON TRANSFORMER SERVICES, INC.	YERINGTON, NV	NVD980894588
UNITED INDUSTRIAL SERVICES	MERIDEN, CT	CTD021816889
USPCI	WAYNOKA, OK	OKD065438376
USPCI	CLIVE, UT	UTD991301748
USPCI	OKLAHOMA CITY, OK	OKT410010474
VAN WATERS & ROGERS	LOS ANGELES, CA	CAD080029671
WASTE CONVERSION	HATFIELD, PA	PAD085690592
WASTE OIL REPROCESS FACILITY	OAKLAND, CA	CAD000626515
WASTE RESEARCH AND RECLAMATION	EAU CLAIRE, WI	WID990829475
WAYNE DISPOSAL	DEARBORN, MI	MID048090633
WEST CONTRA COSTA SANITARY LANDFILL	RICHMOND, CA	CAD041844002
WESTERN DRUMS, INC.	HAYWARD, CA	CAD087210399
WESTINGHOUSE	GLENDALE, IL	-
WORLD RESOURCES CO	PHOENIX, AZ	AZD980735500
YENTER ENVIRONMENTAL SERVICES	LONGMONT, CO	COD982586968



A Hazardous waste (HW) that has been shipped to a commercial TSD

B Was the waste generated in an area that meets radioactive materials management area (RMMA) definition?

D Does analysis and/or surface survey data exist for this HW?

E Does analytical data indicate radioactivity was added to waste bulk or volume or that surface contamination exceeds DOE 5400.5 limits?

F Is the HW similar in form/type as known radioactive waste?

G Is there any reason to believe that the HW could have been radioactively contaminated by DOE operations?

C Clean
LC Likely clean
R Known radioactive
LR Likely radioactive

T92 0795

Figure 1. Decision tree for hazardous waste shipment categorization.

APPENDIX A

United States Government

Department of Energy

Idaho Field Office

memorandum

DATE: August 26, 1991

SUBJECT: Data Requirements on Past Shipments of Hazardous/Toxic Wastes Potentially Contaminated with Radioactivity

TO: EM-331 (Stevens, 3-7133)
Distribution

Attached is a data requirements document for the referenced waste shipments. This consolidates and supersedes all previous requests contained in memoranda from Jill Lytle dated May 17, June 7, and June 28, 1991.

In view of the Department's need to protect public health and the environment through responsible management of our operations involving radioactive materials and in view of the public concern we anticipate as a result of imminent announcements on past shipments of potentially contaminated wastes, a full response is required by September 30, 1991. If you are unable to make a firm commitment to meeting this deadline, notify me immediately. This situation is among the highest priorities faced by the Department.

To facilitate our followup on past shipments of wastes, you are encouraged to make partial submittals of significant quantities or types of wastes, rather than hold up this information until all your past shipments have been reviewed. If partial submittals are made, indicate this clearly and state that more data are expected to follow. In any case, complete submittals are required by the deadline.

Your are to use the format specified in the attachment. The data will be entered into an electronic database using DBase-4. It will be most helpful if you can submit the data on computer disks in the DBase-4 format, or in some other readily translatable format. The EM-331 staff will be working with you to investigate the feasibility of submittals on electronic media.

The data is to be submitted to Lee Stevens, EM-331, of my staff. Also direct all questions and requests for instructions or assistance to him.

Leo P. Duffy
Director
Office of Environmental Restoration
and Waste Management

3 Attachments

Attachment 1

Standard Format for Summary Data
on Off Site Shipment of RCRA/TSCA Waste

1. Final TSD Contractor:(1) _____
2. Type(s) of service:(2) _____
3. Field Office: _____
4. DOE Site: _____
5. Contractor:(3) _____
6. Prime Contractor:(4) _____

_____

_____

Calendar Year	Radioactive Waste	Clean Waste	Suspect Waste	
			Highly Suspect	Questionable
1991[5]	(6)[7]			
1990				
1989				
1988				
1987				
1986				
1985				
1984				
(5)(7)				

Standard Format for Detailed Data
for Off Site Shipments
of RCRA/TSCA Radioactive and Suspect Waste

Field Office:

DOE Site: _____

Contractor:(3) _____

1. Prime Contractor:(4) _____
2. Date of Shipment: _____
3. Manifest Number: _____
4. Number of Containers: Waste Volume:

Radioactive Waste:	_____	_____
Suspect Waste:	_____	_____
Clean Waste:	_____	_____
Total:	_____	

FOR RADIOACTIVE WASTE

5. Waste Description:(8) Volume:(9)

a.	_____	_____
b.	_____	_____
c.	_____	_____

6. Isotopic Concentration:(8)

a.	_____	_____	_____	_____	_____
b.	_____	_____	_____	_____	_____
c.	_____	_____	_____	_____	_____

7. TSD Facility where Final Treatment or Disposal Occurred: (1)(8)

a. _____
b. _____
c. _____

FOR SUSPECT WASTE

8. Decision Criteria: Bulk- _____
   Surface- _____

9. Highly Suspect Waste Description:(8) Volume:(10)
   a. _____ _____
   b. _____ _____
   c. _____ _____

10. Potential Isotopes:(8)(11)
   a. _____ _____ _____ _____ _____
   b. _____ _____ _____ _____ _____
   c. _____ _____ _____ _____ _____

11. TSD Facility where Final Treatment or Disposal Occurred:(8)
   a. _____
   b. _____
   c. _____

12. Undocumented Waste Description:(8) Volume:(10)
   a. _____ _____
   b. _____ _____
   c. _____ _____

13. Potential Isotopes:(8)(11)
   a. _____ _____ _____ _____ _____
   b. _____ _____ _____ _____ _____
   c. _____ _____ _____ _____ _____

14. TSD Facility where Final Treatment or Disposal Occurred:(1)(8)
   a. _____
   b. _____
   c. _____

Instructions for Completing Standard Formate Data Forms

Following are definitions, explanations and directions for submitting data in response to the attached request.

1. Definitions

Radioactive waste is any waste (that should be) managed for its radioactive content, which is not otherwise regulated for that radioactive content (e.g., regulated by the Clean Air Act, Clean Water Act, etc.). If a material was received as nonradioactive, any resulting waste is not a radioactive waste if it meets the following conditions:

1) it contains no added radioactivity in volume or bulk resulting from DOE operations; and

2) it contains no surface radioactivity above limits established in DOE Orders or guidance [e.g., surface contamination limits and requirements of DOE Order 5400.5, II.5.c.(1)].

For purposes of this historical data, radioactive waste is waste for which sampling and analysis data indicate radioactivity above background (background includes natural levels of radiation in materials) or for which surface contamination exceeds the DOE Order 5400.5 guidelines.

Clean waste is waste originating outside a radioactive materials management area (RMMA) or waste originating within an RMMA for which documented evidence of administrative controls, process knowledge, survey or sampling and analysis indicates no radioactivity was added to the waste volume by DOE operations and for which the surface contamination is less than the guidelines in DOE Order 5400.5.

Suspect waste is waste that is not categorized as radioactive waste or clean waste as defined above.

Highly suspect waste is waste similar in form and process/area of origin as a waste known to be a radioactive waste.

Questionable waste is suspect waste, other than highly suspect waste, originating in an RMMA for which process knowledge, survey or sampling and analysis documentation is not available.

2. Directions for Standard Format for Summary Data

(1) Provide the name, EPA identification number, city and state of the treatment, storage or disposal contractor that provided treatment or disposal for your waste. For example, provide information for the TSD facility that incinerated your waste, or directly land disposed of your waste.

(2) Indicate the process(es) or services that the final TSD contractor in (1) provides: landfill, incineration, distillation, or other (indicate what the other technology is if it was applied to DOE waste).

(3) Provide the DOE contractor or other organization that held the contract with the prime contractor [see (4)].

(4) Provide the name, EPA identification number, city and state of the contractor with whom the DOE contractor contracted to receive RCRA or TSCA waste (e.g., a broker or TSD facility). If more than one contractor has been used, include the effective time period that each was used (e.g., 9/87 to 2/88).

(5) Using a footnote that corresponds to the year(s), indicate the criteria for determining that waste was not radioactive that were in effect at the time the determination was made. For bulk waste, report this in curies per mass or volume (e.g., 2 nCi/g, 50 pCi/ml, etc). For surface contamination, if the DOE Order 5400.5 limits were used, enter "5400.5," otherwise, enter the specific limits. In reporting these, address how naturally occurring radioactivity/background was accounted for.

(6) By the waste categories defined herein, provide the volume of waste treated or disposed of by the contractor listed in (1) for each year. If a waste was not sent to the contractor in the year, indicate "NA" (not applicable). For a prime contractor (3), include only the amount of waste that the contractor treated or disposed of themselves. Report quantities sent to subcontractors on separate sheets corresponding to the individual contractors.

(7) If all efforts to determine whether a subcontractor received a waste shipment are not successful, indicate in a footnote the volume of waste that is in question and the other possible recipients. For example in 1989 you sent 10,000 gallons of waste that you now identify as questionable to your prime contractor A who in turn sent waste to sub-contractors B, C, and D. After examining contractor A's records and manifests you cannot determine how much waste went to each of the contractors B, C, and D. When filling out the summary data form for contractor B, the entry for 1989 in the column "Questionable" would: 1) contain the volume of questionable waste, if any, known to have been sent to contractor B, and 2) a reference a footnote. The footnote would indicate that "all or part of 10,000 gallons of waste went to contractor B or C or D." The same footnote should appear on the data sheets for contractors C and D. For "Clean Waste" the information on which subcontractor it was sent to can be estimated.

(8) Remembering that this data is going to be used to evaluate the radiological impact of the treatment or disposal of the waste, divide the waste into categories based on type of treatment applied, radionuclides present or potentially present, and/or TSD where the treatment or disposal occurred. Data entered on line 5.a must correspond to data entered on lines 6.a and 7.a. Similarly lines a. under 9, 10, and 11 must all represent a consistent set of data as must those from lines 12, 13, and 14. For example, if regulated waste oils were sent to a company that composited it and sent it to subcontracter X and Y for incineration, lines a. and b. under numbers 5, 6, and 7 would be used for reporting waste treated by subcontractor X and subcontractor Y, respectively. Add additional lines as necessary.

(9) Provide volumes of waste in units compatible with the denominator of the isotopic concentrations reported in 6 (e.g., for isotopic concentrations reported in nCi/ml, volumes should be in liters or cubic meters).

(10) Provide volumes of waste in units compatible with the denominator of the bulk contamination criterion reported in 8 (e.g., for isotopic concentrations reported in nCi/ml, volumes should be in liters or cubic meters.).

(11) List the isotopes that were possibly in this waste based on knowledge of the source of the waste.

END

DATE FILMED

3/12/93