**Table 1.** INEL transuranic mixed and non-mixed waste identification and description information.

| Waste Category 3=TRUW | Mixed Waste 1=mixed 2= non-mixed | Key Code | Wastestream Identifier Code | Content Code | Waste Stream Name | Description | Generator Site | Combustibility 1=>90% 2=10-90% 3=<10% | Rad Level 1=CH 2=some RH | PCBs 1=expected 2=not expected | Asbestos 1=expected 2=not expected 3=unknown |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mixed Waste =** | **1** | | | | | | | | | | |
| 3 | 1 | 391 | CH-ANL-142T | * | LEAD CONTAMINATED WASTE | This waste stream is typically lead lined gloves replaced at the Experimental Fuel Laboratory Glove Box. | Idaho National Engineering Laboratory - Argonne National Laboratory - West | 3 | 1 | 2 | 2 |
| 3 | 1 | 9 | CH-ANL-180T | * | SODIUM - TRU | Sodium is used as a primary and was used as a secondary coolant for the EBR-II reactor. Waste sodium metal is a hazardous constituent of some of the TRU waste stored at the ANL-W Radioactive Scrap and Waste Facility (RSWF). The waste is generated during maintenance and operational activities. The sodium typically coats waste metal equipment, experiments, and components removed during reactor operations and maintenance activities. | Idaho National Engineering Laboratory - Argonne National Laboratory - West | 2 | 2 | 2 | 2 |
| 3 | 1 | 11 | CH-ANL-182T | * | SODIUM POTASSIUM -NaK- TRU | Sodium potassium alloy (NaK) is used as a coolant for some components of the EBR-II Reactor. Waste NaK metal is a hazardous constituent of some transuranic wastes stored at the ANL-W Radioactive Scrap and Waste Facility (RSWF). The remote-handled NaK waste at RSWF is contained in stainless steel capsules or tubing and placed inside carbon steel waste cans which then are placed in stainless steel outer cans. The entire package is then stored in RSWF storage liners (carbon steel soil storage vaults). The NaK is generated during maintenance and operational activities. NaK waste is in canisters with TRU waste metal pieces and rods from reactor experiments. | Idaho National Engineering Laboratory - Argonne National Laboratory - West | 2 | 2 | 2 | 2 |
| 3 | 1 | 15 | CH-ANL-218T | * | ELECTROREFINER STRIPPED SALT - Ba AND Cd | This waste stream consists of chloride salts containing residual amounts of cadmium and barium. This waste stream will be generated from the Fuel Cycle Facility operations. | Idaho National Engineering Laboratory - Argonne National Laboratory - West | 3 | 2 | 2 | 2 |
| 3 | 1 | 17 | CH-ANL-241T | * | TRU-CD-HOT CELL WASTE | This waste stream consisted of metallic cadmium, salts, and associated cleanup materials (paper towels and cloth rags). The waste is contaminated with activation and fission products as well as with plutonium. This waste stream is generated for Fuel Cycle Facility Demonstration support experiments; the analysis of fuels in the hot cells.<br><br>Previous waste is stored in the Radioactive Scrap and Waste Facility in two liners. Future waste generation will be small because evaporation as part of the process will be done in the hot cell to minimize the volume. | Idaho National Engineering Laboratory - Argonne National Laboratory - West | 3 | 2 | 2 | 2 |
| 3 | 1 | 19 | CH-ANL-243T | * | ELEMENT HARDWARE FCF WASTE | This waste stream will consist of small pieces of stainless steel from nuclear fuel. This waste stream will be generated from the "Element Chopper" station at the ANL-W Fuel Cycled Facility.<br><br>The plan for this waste stream (which has not been generated) is to either immobilize or recover the cadmium as a part of the waste processing phase of the project. This will meet the EPA disposal criteria for cadmium waste streams (FCF FSAR). | Idaho National Engineering Laboratory - Argonne National Laboratory - West | 3 | 2 | 2 | 2 |
| 3 | 1 | 21 | CH-ANL-245T | * | ELECTROREFINER STRIPPED CADMIUM | This waste stream consists of encapsulated waste cadmuim metal. This waste stream will be generated from the Electrorefiner station in the ANL-W Fuel Cycle Facility. | Idaho National Engineering Laboratory - Argonne National Laboratory - West | 3 | 2 | 2 | 2 |
| 3 | 1 | 22 | CH-ANL-246T | * | ELECTROREFINER INSOLUBLES W/ CADMIUM | This waste stream consists of cadmium metal with other heavy metals & "noble" metals (they are not reactive in the FCF electrorefining process). This waste stream will be generated from the Electrorefiner station in the ANL-W Fuel Cycle Facility processes. This waste stream includes inorganic sludges/particulates.<br><br>The plan for this waste stream (which has not been generated) is to either immobilize or recover the cadmium as a part of the waste processing phase of the project. This will meet the EPA disposal criteria for cadmium waste streams (FCF FSAR). | Idaho National Engineering Laboratory - Argonne National Laboratory - West | 3 | 2 | 2 | 2 |
| 3 | 1 | 392 | CH-ANL-503T | * | TRU WASTE USED PRE-FILTERS | This waste stream consists of metal or wood framed pre-filters. Pre filters are 2' X 2' X 0.5'. The filters have screen mesh covering high efficiency filtering media. The concentration of radioisotopes and RCRA metals varies in each filter. These filters were generated from the deontamination of the analytical hot cells in 1993 and 1994. | Idaho National Engineering Laboratory - Argonne National Laboratory - West | 1 | 2 | 2 | 2 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 390 | CH-ANL-505T | * | ALHC UPGRADE DECON DEBRIS | Waste packaged for WIPP containing: Radioactive cadmium debris from CH-ANL-242T, solidified to meet WIPP-WAC requirement for particulate immobilization, and bags of lead-lined gloves were placed in the solidified CO2 drums to fill the void spaces. The leftover gloves were placed in a separate 30-gallon drum. 1710 pounds of waste are in two TRU-Pac containers: MW-S-94-02 and MW-S-94-03. | Idaho National Engineering Laboratory - Argonne National Laboratory - West | 2 | 1 | 2 | 2 |
| 3 | 1 | 163 | ID-AEO-100T | 100 | GENERAL PLANT WASTE | This waste steam, generated at Argonne National Laboratory-East, contains combustible and noncombustible items such as paper, rags, rubber gloves, plastic bottles, glassware, small tools, balances, and empty metal cans. The waste is usually separated into combustible and noncombustible streams. Prior to 1981, small amounts of absorbed organic wastes are included.<br><br>Since the waste is packaged in bins, all of the bins may require opening and handling to meet TRAMPAC limits, such as vented container requirements. The organic content will exceed 6 lb/ft3 for combustible-containing bins. The levels of dispersible fines should be within WIPP-WAC limits. No free liquids should be present. There may be small amounts of sludges. The waste contains contaminated gas cylinders which are empty and have open valves. Aerosol cans may also be included. Prior to 1981, potentially unstable material such as nitrated organic resins, and ether-based scintillation fluids were also included.<br><br>Wastes are packaged in 3- and 5-gallon cans and the 55-gallon drums are segregated into combustible and noncombustible streams and placed in M-III bins. | Argonne National Laboratory-East | 2 | 1 | 2 | 3 |
| 3 | 1 | 164 | ID-AEO-101T | 101 | CUT UP GLOVEBOXES | This waste stream, generated at Argonne National Laboratory-East, contains glovebox sections and associated equipment from decontamination and decommissioning operations. The waste is predominantly noncombustible.<br><br>The organic content is around 3 lb/ft3. The levels of dispersible fines should be within WIPP-WAC limits. No sludges or free liquids should be present. No explosive or pyrophoric materials should be in this waste.<br><br>This waste is contained in M-III bins with half or full-sized plywood box liners. Miscellaneous items such as machines, tools, glassware, piping, filters, and cinderblock are contained in 20-mil PVC bags, heat sealed, and placed in the plywood liners. Gloveboxes are dismantled, wrapped in one or more layers of PE, and placed in the liners. | Argonne National Laboratory-East | 2 | 1 | 2 | 3 |
| 3 | 1 | 307 | ID-AEO-102T | 102 | ABSORBED LIQUIDS | This waste comes from Argonne National Laboratory-East. It consists of liquids adjusted to pH 10 using NaOH which are then absorbed in vermiculite. No hazardous constituents have been identified in the waste. | Argonne National Laboratory-East | 3 | 1 | 2 | 3 |
| 3 | 1 | 209 | ID-AEO-104T | 104 | ALPHA HOT CELL WASTE | This waste stream, generated at Argonne National Laboratory-East, contains alpha hot cell waste. Noncombustible and combustible waste are segregated. Combustible wastes include paper, plastic and PVC containers, rubber O-rings and gloves, rags, and Q-tips. Noncombustible wastes include lab equipment, tools, fixtures, glassware, pipe, tubing, fitting, fasteners, firebrick, ferrous and nonferrous metal scraps and parts, and small electric motors. Sodium in the waste is reacted with ethyl alcohol, mixed with pelletized clay, and dried. Nitrates and oxidizing agents are neutralized or reduced, mixed with peletized clay, and dried to ferrous or ferric salts.<br><br>The average organic content is 5 lb/ft3. The combustible content of some containers exceeds 25 volume percent, including packaging. Fines are within WIPP-WAC limits. No sludges or free liquids should be present. No explosive or pyrophoric materials should be in this waste. Surface contamination and nuclear criticality meet WIPP-WAC limits. Thermal power does not exceed 10 watts per package. Surface dose rates average 5.3 R/hr and are limited to 30 R/hr.<br><br>The waste is packaged in 17C 30-gallon drums. Individual waste items may be loose, contained in 4-inch diameter by 10-inch high portal cans, or contained in 1-gallon paint cans. Some metal or glass wastes are compacted. Some items may be contained in 7.5-gallon steel buckets and then packged, two buckets per package, in heat-sealed PVC bags. Since 1983, the heat-sealed bags are lined with kraft paper. These buckets of PVC-bagged waste are contained in a 30-gallon drum liner and sealed inside another 20-mil PVC bag in a 30-gallon steel drum. The maximum weight for each drum is 200 lbs, and the maximum dose rate is 30 R/hr. | Argonne National Laboratory-East | 2 | 2 | 2 | 3 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 308 | ID-AEO-105T | 105 | EMPTY BOTTLES | This waste stream, generated at Argonne National Laboratory-East, consists of PE and glass bottles used to transport liquid wastes.<br><br>The organic content is around 5 lb/ft3. The levels of dispersible fines should be within WIPP-WAC limits. No sludges or free liquids should be present, except for small quantities of wet vermiculite. No explosive or pyrophoric materials should be in the waste.<br><br>The bottles have the tops removed and are filled with vermiculite. The bottles are placed with more vermiculite in 55-gallon drums fitted with 90-mil liners. The drums are shipped in M-III bins. After receipt of the bins at INEL-RWMC, the drums are removed from the bins for storage. The bins may be reused.<br><br>ID-AEO-105T contains both low-level (Interval 0) and transuranic (Intervals 1 through 34) waste. Interval 0 information is included in the ALLW appendix, intervals 1-34 in the TRUW appendix | Argonne National Laboratory-East | 2 | 1 | 2 | 3 |
| 3 | 1 | 309 | ID-AEO-106T | 106 | SPECIAL SOURCE MATERIAL | There is no descriptive or constituent information available for this waste, which was generated at ANL-E. | Argonne National Laboratory-East | 3 | 1 | 2 | 3 |
| 3 | 1 | 310 | ID-AEO-107T | 107 | REMOTE-HANDLED WASTE | There is no descriptive or constituent information available for this waste, which was generated at ANL-E.<br><br>ID-AEO-107T contains both low-level (Interval 0) and transuranic (Intervals 1 through 34) waste. Interval 0 information is included in the ALLW appendix, intervals 1-34 in the TRUW appendix | Argonne National Laboratory-East | 3 | 2 | 2 | 3 |
| 3 | 1 | 81 | ID-AEO-110T | 110 | RESEARCH GENERATED WASTE COMPACTIBLE & C | This waste is generated at Argonne National Laboratory - East. The waste is derived from research activities performed in a laboratory environment. The waste includes soft plastics, cardboard, rags, paper, and cloth from various processes. The waste is packaged in 55-gallon drums or in SWBs. | Argonne National Laboratory-East | 1 | 1 | 2 | 3 |
| 3 | 1 | 83 | ID-AEO-120T | 120 | DECONTAMINATION AND DECOMMISIONING WASTE | This waste is generated at Argonne National Laboratory-East. The waste is derived from decontamination and disposal of facilities and ancillary systems (e.g., gloveboxes). The composition of the waste is unknown. ANL-E IDC 101 is used as an analog for waste matrix composition. | Argonne National Laboratory-East | 1 | 1 | 2 | 3 |
| 3 | 1 | 313 | ID-ANL-160T | 160 | ANL-W HFEF ANALYTICAL CHEMISTRY AND META | This wastestream, which was generated at ANL-W was generated during analytical chemistry and metallography operations. Item Description Code (IDC) 153 was replaced by IDC 160, ANL-W HFEF Analytical Chemistry and Metallographic Combsutibles. The waste package contains lead as shielding. | Idaho National Engineering Laboratory | 1 | 2 | 2 | 3 |
| 3 | 1 | 314 | ID-ANL-162T | 162 | ANL-W FMF EFL Zr-U FUEL CASTING ALLOYS R | This waste stream was generated at ANL-W. It consists of solid zirconium, uranium, and plutonium fuel casting metal alloy wastes. The waste is a solid with small amounts of glass powder from broken glass molds.The waste is created when the metal is heated in a crucible and then pressurized into the glass molds. The glass molds are broken to remove the fuel pins, and the remaining molds, crucibles, and residues constitute the waste.<br><br>ID-ANL-162T contains both low-level (Interval 0) and transuranic (Intervals 1 through 34) waste. Interval 0 information is included in the ALLW appendix, intervals 1-34 in the TRUW appendix | Idaho National Engineering Laboratory | 3 | 1 | 2 | 3 |
| 3 | 1 | 315 | ID-ANL-163T | 163 | ANL-W ACL COLD-LINE ABSORBED LIQUID, MIS | This waste stream was generated at ANL-W. Analytical chemistry laboratory cold-line sample analysis absorbed liquid wastes includes absorbed liquids, miscellaneous hardware and polyethylene. It is a solidified liquid. | Idaho National Engineering Laboratory - Argonne National Laboratory-West | 3 | 1 | 2 | 3 |
| 3 | 1 | 166 | ID-BCO-201T | 201 | NONCOMBUSTIBLE SOLIDS | This waste stream, generated at Battelle Columbus Laboratories, contains noncombustible items such as tools, crucibles, piping, valves, pieces of equipment, lead bricks, plexiglass, and filters.<br><br>Organic content is minimal. The levels of dispersible fines should be within WIPP-WAC limits. No sludges or free liquids should be present. No explosive or pyrophoric materials should be in this waste.<br><br>Prior to packaging, each waste item is given a smear test and then triple contained in either nylon reinforced plastic sheeting or PE bags. The waste is placed in 55-gallon drums fitted with 90-mil liners, or else placed in M-III bins. Some drums which do not meet INEL packaging criteria are also overpacked in bins. | Battelle Columbus Laboratories | 2 | 1 | 2 | 3 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 317 | ID-BCO-202T | 202 | COMBUSTIBLE SOLIDS | This waste stream, generated at Battelle Columbus Laboratories, contains such combustible items as wood, plastic suits, nylon reinforced plastic tent structures, shoe covers, rubber golves, and air hose. The waste is from decontamination and deactivation of the plutonium laboratory.<br><br>The average wastes organic material content may range from 6 lb/ft3 ( including the plywood liner) for bins to 8 lb/ft3 (excluding the 90-mil liner ) for drums. No significant levels of fines should be present. The waste is packaged with no free liquids, sludges, explosives, compressed gases, pyrophoric or corrosive materials.<br><br>Each waste item is given a smear test and then triple-wrapped in nylon reinforced plastic or triple-bagged in PE bags. The items are then placed inside 55-gallon drums with 90-mil liners, or in type M-III bins with non-removable plywood liners. Type M-III bins have also been used to overpack 17H drums that do not meet INEL packaging criteria. | Battelle Columbus Laboratories | 1 | 1 | 2 | 3 |
| 3 | 1 | 318 | ID-BCO-203T | 203 | PAPER, METALS, GLASS | This waste stream, generated at Battelle Columbus Laboratories, contains a mixture of combustible and noncombustible items in roughly equal proportions. Combustible items include paper and paper products. Noncombustibles are primarily metal and some glass.<br><br>The organic content is about 9 lb/ft3 in drums and about 5 lb/ft3 in bins. Combustibles, including packaging, may exceed 25 volume percent. The levels of dispersible fines should be within WIPP-WAC limts. No sludges or free liquids should be present. No explosive or pyrophoric materials should be in this waste.<br><br>Prior to packaging, each waste item is given a smear test and then triple contained in either nylon reinforced plastic sheeting or PE bags. The waste is placed in 55-gallon drums fitted with 90-mil liners, or else placed in M-III bins. Some drums which do not meet INEL packaging criteria are also overpacked in bins. | Battelle Columbus Laboratories | 2 | 1 | 2 | 3 |
| 3 | 1 | 319 | ID-BCO-204T | 204 | SOLIDIFIED SOLUTIONS | This waste comes from Battelle Columbus Labs. It is a turco soap decontamination solution (used to decontaminate glove boxes from a Pu lab) which is solidified in plaster-of-paris. | Battelle Columbus Labs | 3 | 1 | 2 | 3 |
| 3 | 1 | 80 | ID-BTO-010T | 10 | COMBUSTIBLES | This waste stream, generated at Bettis Atomic Power Laboratory, consists primarily of rags, gloves, plastic, paper, carbo-wax, filters, oil-contaiminated "absorbal" (diatomaceous earth), and rubber. The waste stream may also contain noncombustible items. Levels of hazardous materials are unknwon.<br><br>The waste organic material may exceed 14 lb/ft3 for drums. Although limited fines are expected from floor sweepings, powder, etc., levels of fines should be within WIPP-WAC limits. The waste is packaged with no free liquids, sludges, explosives, compressed gases, pyrophoric, or corrosive materials.<br><br>Small waste items are wrapped in plastic and placed inside 3.25-inch diameter by 7-inch high tin-plated steel cans with screw-on lids. The can is placed inside a steel "juice can" with roll-seam sealed lids. Larger items are wrapped in plastic and placed inside 4.375-inch diameter by 20 or 24-inch high tin-plated steel cans. The sealed can was wrapped in plastic and placed inside 55-gallon waste drums lined with 90-mil drum liners. Between 15-80 cans fit in a drum. Prior to 1974, each drum was assayed by calculating weight differences to determine fissile content. After 1974, a U-232 assay gauge was used. | Bettis Atomic Power Laboratory | 1 | 1 | 2 | 3 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 148 | ID-BTO-020T | 20 | NONCOMPRESSIBLE, NONCOMBUSTIBLE | This waste stream, generated at Bettis Atomic Power Laboratory, contains noncompressible and noncombustible items such as absolute filters, solidified chemical waste, contaminated metal equipment, furnace brick, and highly contaminated glovebox equipment. Metal scrap could include bars, sheet, fixtures, small equipment tools, etc. made of carbon steel, stainless steel, inconnel, aluminum, copper, brass, and zirconium. Chemical wastes include spent chemical solutions and associated solids from the isotope and isotopic dilution analysis of nuclear fuel specimens. The residues were neutralized before being either mixed with absorbent material or solidified.<br><br>The organic content is less than 14 lb/ft3. Although there may be some particulate material in the waste from absolute filters, the levels of dispersible fines should be within WIPP-WAC limits. No sludges or free liquids should be present. No explosive or pyrophoric materials should be in the waste. Trace amounts of nitric acid or organic contaminants may be present.<br><br>Individual waste items are separately packaged in plastic wrapping. Depending on size, some wrapped items are placed in (a) 3-1/4-inch diameter by 7-inches high screw-top, tin-plated steel cans, placed inside roll-seamed juice cans, or (b) larger 4-3/8-inch diameter by 20 to 24-inch high tin-plated steel cans. Chemical solutions are neutralized to a pH between 6-8 and mixed with "absorbal" in PE bottles or solidified in metal cans (which are wrapped in plastic). These items are then placed inside prepared 55-gallon drums lined with 90-mil liners. Each drum was assayed by calculated weight differences, chemical analysis, or using an assay gauge. | Bettis Atomic Power Laboratory | 3 | 1 | 2 | 3 |
| 3 | 1 | 43 | ID-BTO-030T | 30 | SOLIDIFIED GRINDING SLUDGE, ETC. | This waste steam, generated at Bettis Atomic Power Laboratory, consists of solidified grinding sludge and associated filters, rags, etc. The sludge can contain abraded grinding wheel material, which includes diamond dust, aluminum oxide, carborundum, and rubber. The waste is in either powder or cakes and contains not more than 10% of other waste items.<br><br>The drums may contain free liquids. The estimated organic content is less than 1 lb/ft3. No particle size data are provided, but it is assumed that WIPP-WAC limits for fines would be exceeded. No free liquids should be present. No explosive, pyrophoric, or corrosive material should be in the waste.<br><br>Both 17c and 6m 55-gallon drums were used for packaging the waste. Fissile content was determined by calculating the weight difference by chemical analysis or by an assay gauge. | Bettis Atomic Power Laboratory | 3 | 2 | 2 | 2 |
| 3 | 1 | 213 | ID-BTO-040T | 40 | SOLID BINARY SCRAP POWDER, ETC. | This waste stream, generated at Bettis Atomic Power Laboratory, contains solid binary scrap as powder, pellets, or rods. The material is made of ceramic based UO2 and ThO2. Some "kilorods" or fuel rods constructed of fuel pellets within hollow zirconium tubes are also included.<br><br>The organic content (excluding plywood spacers) is probably less than 1 lb/ft3. Combustibles, including packaging, may exceed 25 volume percent. No sludges or free liquids should be present. No explosive or pyrophoric material should be in this waste. Trace amounts of nitric acid contamination may be present.<br><br>Binary scrap powder and pellets are packaged in tin plated steel cans. The sizes of these cans are 3-1/4 inch in diameter and 7 inches high or 4-3/8 inches in diameter and 24 inches high. Each can is wrapped in plastic. Three cans are placed in each drum. Kilorods are placed in plastic lined 5-inch diameter pipes placed in either 55- or 100-gallon drums. Between 18-20 rods are placed in each 100-gallon drum and 10-11 rods are placed in each 55-gallon drum. The drums which contain kilorods have 3/4- to 1-inch thick lead shielding. Fissile content for the drums was determined by weight difference calculations, chemical analysis, assay gauge, or by individual fuel rod values.<br><br>ID-BTO-040T is currently classified as TRUMW. The only radionuclide reported in TWDB for this wastestream is Th-232 and U-233. Since thorium and uranium have atomic numbers of 90 and 92 respectively, they are not usually considered to be transuranium radionuclides, as defined in DOE Order 5820.2A. Since the TRU alpha activity concentration is less than 100 nCi/g. this wastestream may be mixed ALLW. | Bettis Atomic Power Laboratory | 2 | 2 | 2 | 3 |
| 3 | 1 | 210 | ID-CPP-151T | 151 | SOLIDIFIED FUEL SLUDGE | This waste stream was generated at the Idaho Chemical Processing Plant at the INEL, and may include both combustibles and noncombustibles. The waste includes a solidified sludge of acid-dissolved fuel, absorbed into diatomaceous earth. Other materials in the wastes include glass containers, plastics, metal scraps, lead shielding, and lab equipment.<br><br>The waste is contained in two 30-gallon drums. At least one of the drums may be lead-lined. The sludge is contained glass bottles and sealed inside metal cans. Other materials may include glass containers, plastics, metal, scraps, lead shielding, and miscellaneous laboratory equipment. The surface dose rate is limited to 30 R/hr. The average nuclide content is around 3 grams per package (about 200,000 nCi/g). | Idaho National engineering Laboratory-Idaho Chemical Processing Plant | 2 | 2 | 2 | 3 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 347 | ID-CPP-172 | * | HEPA FILTERS | HEPA filters for off-gas cleaning of ventillation. The filters are considered MTRU waste because they are derived from treatment of HLW and spent fuel processing that contain TRU constituents. HEPA filters from CPP-633 and 659 may contain F, P, and U listed waste codes resulting from laboratory quantities of waste dumped tc the ICPP waste systems filtered by these HEPA filters.<br><br>This waste stream contains nine NWCF (New Waste Calcining Facility) off-gas filters previously reported as part of ID-EGG-118-158, NWCF Filters. These waste streams have been combined and ID-EGG-118-158 has been made inactive. | Idaho National Engineering Laboratory | 2 | 2 | 2 | 2 |
| 3 | 1 | 204 | ID-INL-142T | * | TRANSURANIC CONTAMINATED LEAD DEBRIS | In 1983, EAD Metallurgical, Inc. of New York state, a NRC licensee, sold to a company in Mexico the workings of a smoke detector factory. Included in the contract was an agreement that the seller would assemble the plant in Mexico and train the owner/operator. After the materials were received in Mexico, the original owner refused to fulfill contractual obligations, which originated legal proceedings that eventually failed. Escalation of the problem through normal channels finally involved the governments of the two nations which concluded in the DOE assuming ownership of the material in 1986. After government negotiations, DOE-ID was instructed by DOE-HQ to retrieve the material. The material, declared as defense waste, is now stored at the INEL.<br><br>The waste is TRU waste from the workings of a smoke detector factory and includes clothing, metals, and contaminated process equipment.<br><br>The waste is a mixed waste that contains miscellaneous lead shielding, lead pigs, and lead sheeting throughout the waste. | Idaho National Engineering Laboratory | 2 | 2 | 2 | 3 |
| 3 | 1 | 195 | ID-INL-150T | 150 | LABORATORY WASTE | This waste stream, generated at Idaho National Engineering Laboratory, contains laboratory waste form ANL-W including fluxwire, fission counters, HEDL samples, analytical samples dissolved and absorbed on Oil-Dri, glassware, vials, miscellaneous waste from gloveboxes, dissolved pellets absorbed on Oil-Dri, enriched and normal U3O8 pellets, aluminum foil and capsules, TREAT waste capsules, chlorinated ion exchange resins, Pu sources, and irradiated Ge caps. Lab waste from ICPP includes kimwipes, trash, glassware, dissolved samples absorbed in Oil-Dri, analytical samples, gloves, etc.<br><br>The organic content is highly variable, but is usually less than 14 lb/ft3. The levels of dispersible fines should be within WIPP-WAC limits. No sludges or free liquids should be present. Absorbents were added if moisture was detected in any wastes. No explosive or pyrophoric materials should be in this waste.<br><br>Depending on when the wastes were packaged, the individual waste items may be contained in plastic, metal, or glass containers. Some of the containers are 2R containers. The containers are placed inside 55-gallon drums lined with two plastic liners. Some of the containers are wrapped in plastic, and others are placed directly into the drums. Oil-Dri absorbent is added if moisture is present. | Argonne National Laboratory-West and Idaho Chemical Processing Plant | 2 | 1 | 2 | 3 |
| 3 | 1 | 311 | ID-INL-155T | 155 | SCRAP | This waste stream, generated at Idaho National Engineering Laboratory, consists of a plastic glovebox, a hydraulic pump containing oil, vacuum pumps, centrifuges, tools, and experimental fuel capsules. The presence of hazardous materials is not known, but some absorbed oil is likely.<br><br>Organic content of the box may exceed 6 lb/ft3. The levels of dispersible fines should be within WIPP-WAC limits. No sludges or free liquids should be present, except for the hydraulic pump oil in the box. No explosive or pyrophoric materials should be in this waste.<br><br>The waste was placed directly into prepared drums or boxes, or packaged in 1-gallon cans which were placed in prepared drums. The waste was generated in 1975 and 1979. Some of the waste is double wrapped in plastic. It is not known if the box is fiberglass-reinforced polyester (FRP) coated. | Idaho National Engineering Laboratory | 2 | 1 | 3 | 3 |
| 3 | 1 | 312 | ID-INL-157T | 157 | MISCELLANEOUS SOURCES | There is no descriptive or constituent information available for this waste, which was generated at ANL-W. | Idaho National Engineering Laboratory | 3 | 2 | 2 | 3 |

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| Waste Category 3=TRUW | Mixed Waste 1=mixed 2= non-mixed | Key Code | Wastestream Identifier Code | Content Code | Waste Stream Name | Description | Generator Site | Combustibility 1=>90% 2=10-90% 3=<10% | Rad Level 1=CH 2=some RH | PCBs 1=expected 2=not expected | Asbestos 1=expected 2=not expected 3=unknown |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 320 | ID-MDO-801T | 801 | RAGS, PAPER, WOOD, ETC. | This waste stream is from Mound Laboratory and consists of line-generated cloth rags and Kimwipes, and limited amounts of wood and cardboard tubes. Limited amounts some other combustible wastes (gloves, plastic, etc, Content Codes 802, 804, and 812) may also be present. These wastes are from D&D activities at the Plutonium Processing and Research buildings. Waste was shipped only in 1977. Presence of hazardous materials in the waste stream is not known. Limited amounts of waste may be damp.<br><br>The average waste organic material content usually exceeds 14 lb/ft3 for drums. Combustibles in the waste exceed 25 volume percent. Levels of fines from glovebox cleaning should be within WIPP-WAC limits. There should be no sludges, free liquids, explosives, compressed gases, pyrophoric, toxic, or corrosive materials.<br><br>Combustibles were packed into 1-gal plastic coated cardboard cartons. Each carton was labeled, assayed and bagged into a sleeve bag which holds 5 cartons. Up to eight sleeve bags were placed in each drum. Drums were prepared according to post-1972 procedures. | Mound Laboratory | 1 | 1 | 2 | 3 |
| 3 | 1 | 135 | ID-MDO-802T | 802 | DRY BOX GLOVES AND O-RINGS | This waste stream is generated at Mound Laboratory and consists of neoprene dry box (glovebox) gloves, neoprene O-rings, and lead-lined gloves. Limited amounts of waste from Mound Content Codes 801, 804, and 812 may be included. | Mound Laboratory | 2 | 1 | 2 | 3 |
| 3 | 1 | 152 | ID-MDO-803T | 803 | METAL, EQUIPMENT, PIPES, VALVES, ETC. | This waste comes from Mound Laboratory and consists of stainless steel, carbon steel, and small amounts of aluminum-metal wastes in the form of valves, piping, wrenches, nuts, bolts, stainless steel tubing, spatulas, pans, hotplates, ringstands, etc. Limited amounts of combustible and noncombustible wastes are also present from Content Codes 810, 811, 812, 813, 814, 826, and 832. Content Code 832 is liquid mercury. Content Code 812 is spent ion-exchange resin.<br><br>Most of the waste is metal waste that is primarily from D&D operations. Some of the metals were leached with nitric acid, ultrasonically cleaned, and dried to remove above-discard amounts of plutonium.<br><br>Waste is packaged in 1-gallon, plastic coated cardboard cartons which are in turn placed in two layers of PE bags and then put into a 55-gallon drum. Some large metal waste is taped on the rough edges and sealed in two layers of plastic and then placed into a 55-gallon drum. Drums have drum rigid liners and a drum bag. Each carton is individually assayed. Contaminated elemental mercury from Content Code 832 must be segregated.<br><br>The specific locations, by drum, of waste cartons from Content Code 832,mercury, are known. Therefore, the waste drums containing mercury will be easily identified and the mercury will be removed. | Mound Laboratory | 3 | 1 | 2 | 3 |
| 3 | 1 | 117 | ID-MDO-805T | 805 | ASBESTOS FILTERS | This waste stream, generated at Mound Laboratory, consists primarily of HEPA filters of various sizes. The filter frames are usually pressed hardboard, but a limited number are metal. The filter media is asbestos. The waste stream may include limited amounts of other combustibles from Content Codes 803, 810, 813, 814, 825, or 832.<br><br>Although there may be some organic material, it should be less than 14 lb/ft3 for drums. Significant amounts of respirable fines may be present. No sludges or free liquids should be present. No explosive, pyrophoric, or corrosive materials should be in the waste, except for some residual amounts of nitric acid.<br><br>The waste is contained in drums. Filters are packaged in 1-gallon plastic coated cardboard cartons, one or two filters per carton. Some individual filters are individually bagged inside the cartons. Each carton is individually bagged, assayed, and contained in a sleeve bag with up to four other cartons. Up to eight sleeve bags will fit into a prepared drum. Drums were prepared and packed according to the usual post-1972 procedures. | Mound Laboratory | 2 | 1 | 2 | 1 |
| 3 | 1 | 128 | ID-MDO-810T | 810 | GLASS, FLASKS, SAMPLE VIALS, ETC. | This waste stream, generated at Mound Laboratory, consists mostly of whole and broken glassware and glass sample vials. The majority of the glass is pyrex. Limited amounts of other noncombustibles, material similar to that in Content Codes 803, 805, 811, and 826 may be present. Even though some of the glassware is broken, fines should not exceed WIPP-WAC limits for repirable or dispersed fines. No inorganic sludges, no explosive, pyrophoric, or corrosive materials should be in the waste.<br><br>Most of the glassware is broken into pieces about 1 inch in diameter to reduce total volume. The material is packaged into 1 or 2-quart metal cans with lids. Each can is assayed for plutonium content and then placed with up to four other cans into a sleeve bag, which is sealed with tape. Up to five sleeve bags are placed inside a drum. Each drum is lined with a 90-mil drum liner, which is lined with a PE drum bag. Plywood spacers are placed between the rigid liner lid and the drum lid. | Mound Laboratory | 3 | 1 | 2 | 2 |

**Table 1.** INEL transuranic mixed and non-mixed waste identification and description information.

| Waste Category 3=TRUW | Mixed Waste 1=mixed 2= non-mixed | Key Code | Wastestream Identifier Code | Content Code | Waste Stream Name | Description | Generator Site | Combustibility 1=>90% 2=10-90% 3=<10% | Rad Level 1=CH 2=some RH | PCBs 1=expected 2=not expected | Asbestos 1=expected 2=not expected 3=unknown |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 45 | ID-MDO-811T | 811 | EVAPORATOR AND DISSOLVER SLUDGE | This waste stream, generated at Mound Laboratory, consists of dry evaporator and dissolver sludge and insoluble residue. The consistency ranges from powder to sand-like particles. Limited amounts of other noncombustible wastes including Content Codes 803, 805, 810, 813, 814, 826, and 832 may be included. A few containers may have limited amounts of beryllium-contaminated wastes including glass, paper, gloves, and sample precipitates.<br><br>The drums contain free liquids. The expected organic content in the drums is less than 14lb/ft3. No explosive, pyrophoric, or corrosive materials should be in the waste.<br><br>After removal from the bottom of dissolver pots, the dried sludge is rinsed with nitric acid and dried on a hotplate. Dried sludges are packaged in 1/2-gallon metal cans and sealed in a PE bag, or else packed in 1/2-gallon plastic-coated cardboard cartons and sealed in a PE bag. Each container is assayed and placed in PVC or PE sleeve bags. Sleeve bags can hold up to 5 containers per bag. Up to 8 sleeve bags are placed in each prepared 55-gallon drum. Drums are prepared according to post-1972 procedures, with plywood spacers as needed between on top of the rigid drum liner lid. | Mound Laboratory | 3 | 1 | 2 | 2 |
| 3 | 1 | 118 | ID-MDO-813T | 813 | GLASS FILTERS AND FIBERGLASS | This waste stream, generated at Mound Laboratory, consists primarily of spun glass filters and fiberglass glovebox prefilters. The waste may include limited amounts of other noncombustibles from Content Codes 803, 805, 810, 811, 813, 814, or 825.<br><br>The organic content should be less than 14 lb/ft3. No sludges or free liquids should be present. No explosive, pyrophoric, or corrosive materials should be present.<br><br>The waste is contained in drums. Filters are packaged in 1-gallon plastic coated cardboard cartons. Each carton is individually bagged, assayed, and contained in a sleeve bag with up to four other cartons. Up to eight sleeve bags will fit into a prepared drum. Drums were prepared and packed according to the usual post-1972 procedures. | Mound Laboratory | 2 | 1 | 2 | 3 |
| 3 | 1 | 179 | ID-MDO-814T | 814 | CONTAMINATED MERCURY OR GRAPHITE CRUCIBL | This waste stream was generated at Mound Laboratory. The waste consists of graphite crucibles and electrodes. Cartons of mercury may be included in some waste drums, but they should be easily removeable and are not included in the waste constituents. The Waste matrix composition listed is taken from Item description code (IDC) 300, a similar waste type.<br><br>Organic content should be less than 14 lb/ft3. The waste is noncombustible, but if pulverized and well mixed it will burn. Fines should not exceed WIPP-WAC limits. No sludges or free liquids should be present. The Oil-Dri should meet WIPP immobilization standards. No explosive or pyrophoric materials should be in this waste.<br><br>The material is contained in 55-gallon drums. Inside the drums, graphite waste is packaged in 1-gallon plastic coated cardboard cartons and/or 1/2-gallon metal cans, contained inside plastic bags. Each metal can may be sealed inside another roll-seam can. The drums are lined with 90-mil drum liners. | Mound Laboratory | 3 | 1 | 2 | 3 |
| 3 | 1 | 321 | ID-MDO-815T | 815 | CLASSIFIED PARTS | There is no content information for this waste stream, which was generated at Mound Laboratory. It is thought that there may be classified parts in this waste. | Mound Laboratory | 3 | 1 | 2 | 3 |
| 3 | 1 | 168 | ID-MDO-824T | 824 | NONCOMBUSTIBLE EQUIPMENT BOXES | This waste stream, generated at Mound Laboratory, consists of large, noncombustible wastes such as tanks (stainless steel and tantalum), piping, ducting, conduit, electric motors, pumps, metallurgical presses, lathes, dissolvers, evaporators, furnaces, ladders, vacuum sweepers, 24 x 24 x 12 inch HEPA filters, fume hoods, gloveboxes, plexiglass glovebox windows, and floor tile. Limited amounts of combustible wastes (plastic tanks, fiberglass gloveboxes, plastic contamination control tents, etc.) are also included.<br><br>Boxes filled with HEPA filters and cartons of resins may both contain excessive fines. Combustibles may exceed 25 volume percent in some boxes. No sludges or free liquids should be present. No explosive or pyrophoric materials should be in this waste. Some emptied cylinders with opened valves and punctured aerosol cans are included in the waste.<br><br>All of this waste is packaged in standard or oversized boxes. Each item is generally wiped with wet rags and single or double contained in plastic. Open ends or openings are sealed. Oils or other liquids are drained from any equipment prior to packaging. Florco absorbent is added to each box for residual liquids. Polyurethane foam is added if necessary to help stabilize large equipment.<br><br>Some boxes contain smaller plywood boxes, cartons, cans, or drums of waste items. All plywood boxes are coated with fiberglass-reinforced polyester (FRP). Oversized boxes are not lined with plastic or cardboard liners. | Mound Laboratory | 2 | 1 | 2 | 3 |

**Table 1.** INEL transuranic mixed and non-mixed waste identification and description information.

| Waste Category 3=TRUW | Mixed Waste 1=mixed 2= non-mixed | Key Code | Wastestream Identifier Code | Content Code | Waste Stream Name | Description | Generator Site | Combustibility 1=>90% 2=10-90% 3=<10% | Rad Level 1=CH 2=some RH | PCBs 1=expected 2=not expected | Asbestos 1=expected 2=not expected 3=unknown |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 88 | ID-MDO-826T | 826 | COMBUSTIBLE EQUIPMENT BOXES OR FLOOR SWE | This waste stream, generated at Mound Laboratory, includes two different types of waste depending on when the waste was generated. Prior to 1980, this content code was used for glovebox floor sweepings and rust. The actual amount of floor sweepings is small. After 1981, this content code is used for large, combustible waste items such as plastic tanks, plexiglass shielding and windows, wood, and fiberglass conveyor glovebox sections. These types of large combustible wastes were included in Content Code 824 prior to 1980. Limited amounts of smaller combustibles such as shoe covers and surgical gloves are also included.<br><br>The organic content exceeds 6 lb/ft3. The waste is 100 volume percent combustible. No sludges or free liquids should be present. No explosive or pyrophoric materials should be in this waste.<br><br>All of this waste is packaged in standard boxes. Each item is generally rinsed with water, wiped with wet rags and single or double contained in plastic. Some items were placed directly into boxes without additional containment, depending on contamination levels. Floor sweepings are contained in 1-gallon plastic-coated cardboard cartons. Florco absorbent is added to each box for residual liquids. Each box is assayed using a box counter, and spot radiation and contamination checks are also done. | Mound Laboratory | 1 | 1 | 2 | 3 |
| 3 | 1 | 89 | ID-MDO-827T | 827 | COMBUSTIBLE EQUIPMENT DRUMS | There is no content information on this code. This waste is probably like Content Code 826 (combustible equipment boxes) from Mound Laboratory except that it is smaller items which fit into drums instead of boxes.<br><br>ID-MDO-827T contains both low-level (Interval 0) and transuranic (Intervals 1 through 34) waste. Interval 0 information is included in the ALLW appendix, intervals 1-34 in the TRUW appendix. | Mound Laboaratory | 1 | 1 | 2 | 3 |
| 3 | 1 | 67 | ID-MDO-834T | 834 | HIGH-LEVEL ACID | This waste comes from Mound Laboratory. It consists of acid liquids, mainly nitric, absorbed onto a clay called Florco. The Florco is then placed in a drum bag in a drum lined with a 90-mil poly liner. Analytical assay values are available for each drum. | Mound Laboratory | 3 | 1 | 2 | 2 |
| 3 | 1 | 68 | ID-MDO-835T | 835 | HIGH-LEVEL CAUSTIC | This waste comes from Mound Laboratory. It consists of caustic waste and neutralized waste liquids, absorbed onto a clay called Florco. The Florco is then placed in a drum bag in a drum lined with a 90-mil poly liner. Analytical assay values are available for each drum. | Mound Laboratory | 3 | 1 | 2 | 2 |
| 3 | 1 | 69 | ID-MDO-836T | 836 | HIGH-LEVEL SLUDGE/CEMENT | This waste is from Mound Labs. The waste consists of shower water, decontamination water, cooling water, and some acids and caustics which have been solidified in portland cement. The cement is poured into a drum lined with a 90-mil poly liner. Analytical assay values are available on a batch basis. | Mound Laboratory | 3 | 1 | 2 | 2 |
| 3 | 1 | 198 | ID-MDO-842T | 842 | CONTAMINATED SOIL | This waste, generated at Mound Laboratories, consists of soil, including small rocks and pebbles, generated from cleanup of a leak. All soil waste was dry when packaged. A few waste boxes also include picks, shovels, metal cans, rubber gloves, booties, respirators, plastic, and possibly an air hammer and chisel. Soils waste was packaged in small, plastic lined plywood boxes (42 x 20 x 39 inch) other waste was then placed on top of the soil before the box was sealed. Four of the small boxes were then packaged in a standard larger waste box (4 x 4 x 7 feet) lined with fiberglass-reinforced polyester. Assay was performed using radiochemical analysis on core samples taken from the contaminated area. | Mound Laboratory | 3 | 1 | 2 | 3 |
| 3 | 1 | 322 | ID-MDO-847T | 847 | LOW SPECIFIC ACTIVITY (< 100 nCi/g) COMB | This waste stream is from Mound Laboratory and consists of nonline generated combustible wastes such as plastic sheeting, paper, reagents, gloves (rubber,cloth), plastic bottles, wood, paper suits, and shoe covers. About 75% of the waste is compacted. The waste may be either dry or damp.<br><br>The average waste organic material content usually exceeds 14 lb/ft3 for drums. Levels of fines should be within WIPP-WAC limits. There should be no sludges, free liquids, explosives, compressed gases, pyrophoric, toxic, or corrosive materials.<br><br>Combustibles were packed into plastic bags which were sealed and compacted inside prepared drums. The compaction ratio is about 4:1. About 25% of the waste is not compacted, due to the presence of noncompactible items such as wood. Drums were prepared according to post-1972 procedures. Prior to January 1982, drums were scanned for gamma radiation and assayed if readings above background levels were detected. After 1982, all drums were assayed. | Mound Laboratory | 1 | 1 | 2 | 3 |

**Table 1.** INEL transuranic mixed and non-mixed waste identification and description information.

| Waste Category 3=TRUW | Mixed Waste 1=mixed 2= non-mixed | Key Code | Wastestream Identifier Code | Content Code | Waste Stream Name | Description | Generator Site | Combustibility 1=>90% 2=10-90% 3=<10% | Rad Level 1=CH 2=some RH | PCBs 1=expected 2=not expected | Asbestos 1=expected 2=not expected 3=unknown |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 323 | ID-MDO-848T | 848 | LOW SPECIFIC ACTIVITY (< 100 nCi/g) NONC | This waste stream, generated at Mound Laboratory, consists of nonline generated noncombustible wastes such as tools, pipe, equipment, metal, glass, concrete, plaster, bricks, and dirt. Limited amounts of combustible wastes such as paper, rags, etc. are also included.<br><br>Fines which may be present include soil, plaster, and concrete chips. The organic content is less than 14 lb/ft3. No sludges or free liquids should be present. No explosive or pyrophoric materials should be in this waste.<br><br>This waste stream is packaged in drums. Depending on size and contamination levels of individual items, the waste is contained in one or two plastic bags or placed directly into prepared waste drums. Each drum is lined with a 90-mil liner and a plastic bag. Florco absorbent is added to the bottom of the drum if dampness is suspected. Plywood spacers are added as needed on top of the liner lid. Each barrel is assayed by a drum counter or by portable gamma detecting instruments. | Mound Laboratory | 3 | 1 | 2 | 3 |
| 3 | 1 | 39 | ID-OFS-111T | 111 | RESEARCH GENERATED WASTE NONCOMPACTIBLE | This waste includes waste generated at ANL-East and certified (for WIPP) solid wet sludge from the Rocky Flats Plant. The ANL-E waste is derived from research activities performed in a laboratory environment. The waste includes concrete and laboratory apparatus. The waste is packaged in 55-gallon drums or in SWBs.<br><br>The certified solid wet sludge is cemented or dewatered sludge precipitated from aqueous waste treatment processes. Soils that are not contaminated with organic chemicals are also included.<br><br>Rocky flats waste included in 111 is IDC 007, Building 374 solidified sludge. IDC 007 consists of immobilized low-level mixed waste materials from decontamination-precipitation and neutralization processes in the Building 374 Liquid Waste Treatment Facility. The wastewater treatment operation includes neutralization, radioactive decontamination (precipitation), filtration, evaporation, spray drying, salt immobilization, and filtrate sludge immobilization. The sludge from the rotary drum vacuum filter has a dry appearance but is still very moist. The dried sludge was transferred from the dryer directly into a 55-gallon drum. The sludge was dried, or had portland cement and diatomite added to absorb liquids.<br><br>Note: Waste matrix composition listed is for Rocky Flats Waste. | Rocky Flats Plant and Argonne National Laboratory-East | 3 | 1 | 2 | 3 |
| 3 | 1 | 165 | ID-OFS-121T | 121 | DECONTAMINATION AND DECOMMISSIONING WAST | This waste, generated at Argonne National Laboratory-East and Rocky Flats. The ANL-East waste is derived from decontamination and disposal of facilities and ancillary systems. The composition of the waste is unknown.<br><br>The waste generated at Rocky Flats contains mainly Benelex which is a dense, laminated, lignocellulose hardboard made from wood chips and particles (Masonite Corp., Type 402). The Benelex is generally 2 inches thick. Some of the Benelex has lead shielding attached to it. Metal hinges and angle iron strongbacks are also present. Plexiglass is the other major constituent in the waste. The plexiglass thickness ranges from 2 to 4 inches. Both the Benelex and the plexiglass are combustible. The wase is packaged in standard RFP drums and boxes.<br><br>Waste matrix composition listed is based on the opening and examination of several drums of IDC 302 waste. More than 94% ofthis waste is in boxes, where a larger percentage of benelex (large pieces) can be expected. | Argonne National Laboratory-East and Rocky Flats Plant | 3 | 1 | 2 | 3 |
| 3 | 1 | 295 | ID-RFO-000T | 0 | NOT RECORDED - UNKNOWN | This waste stream was received prior to 1973. As container specific information was not entered into the database prior to 1973, these wastes are uncategorized. It is expected to be similar to other Rocky Flats wastes received since 1973. | Mostly Rocky Flats Plant | 2 | 2 | 3 | 3 |

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| Waste Category 3=TRUW | Mixed Waste 1=mixed 2= non-mixed | Key Code | Wastestream Identifier Code | Content Code | Waste Stream Name | Description | Generator Site | Combustibility 1=>90% 2=10-90% 3=<10% | Rad Level 1=CH 2=some RH | PCBs 1=expected 2=not expected | Asbestos 1=expected 2=not expected 3=unknown |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 38 | ID-RFO-001T | 1 | FIRST STAGE SLUDGE | Waste consists of a wet sludge produced from treating aqueous process wastes, such as ion exchange column effluent, distillates, and caustic scrub solutions generated by Plutonium Recovery Operations (Building 771). Portland cement is added to the waste package for absorption of free liquids. Waste drums may periodically contain surgeons' gloves, glovebox gloves, etc.<br><br>Since the fall of 1979, first-stage sluge (IDC 001) and Second stage sludge (IDC 002) have been combined into Content Code 1 - Combined sludge.<br><br>Sludge is produced by treating aqueous wastes by the carrier precipitation process. Aqueous wastes are made basic, if necessary, with sodium hydroxide. Radioactive elements such as plutonium and americium are chemically precipitated from the liquid waste. Treatment chemicals include ferric sulfate, calcium chloride, magnesium sulfate, and flocculating agents. The treatment process produces a precipitate of the hydrated oxides of iron, magnesium, aluminum, silicon, etc., which also carries the hydrated oxides of plutonium and americium. The precipitate or slurry is filtered to produce a sludge containing 50 to 70 weight percent water.<br><br>Liquid wastes were analyzed for fissile content prior to release from Building 771 and 774, and were retained at Building 771 for further treatment if contaminated with above-discard amounts of plutonium. | Rocky Flats Plant | 3 | 2 | 2 | 2 |
| 3 | 1 | 41 | ID-RFO-002T | 2 | SECOND STAGE SLUDGE | Waste consists of a wet sludge produced from treatment of all other plant radioactive and/or chemical contaminated wastes and further treatment of the first-stage effluent. Portland cement was added to the waste package for absorption of free liquids.<br><br>Second-stage sludge drums packaged prior to 1973 may contain other waste such as electric motors, bottles of chemical (usually liquid) wastes, mercury and lithium batteries, and small amounts of contaminated mercury in pint bottles. Radioactive sources were also periodically included in second-stage drums through 1979.<br><br>Since the fall of 1979, Second stage sludge (IDC 002) have been combined into Content Code 1 - Combined sludge. Content code 2 is no longer used.<br><br>Sludge is produced by treating aqueous wastes by the carrier precipitation process. Aqueous wastes are made basic, if necessary, with sodium hydroxide. Radioactive elements such as plutonium and americium are chemically precipitated from the liquid waste. Treatment chemicals include ferric sulfate, calcium chloride, magnesium sulfate, and flocculating agents. The treatment process produces a precipitate of the hydrated oxides of iron, magnesium, aluminum, silicon, etc., which also carries the hydrated oxides of plutonium and americium. The precipitate or slurry is filtered to produce a sludge containing 50 to 70 weight percent water.<br><br>Liquid wastes were analyzed for fissile content prior to release from Building 771 and 774, and were retained at Building 771 for further treatment if contaminated with above-discard amounts of plutonium. | Rocky Flats Plant | 3 | 2 | 2 | 2 |
| 3 | 1 | 236 | ID-RFO-003T | 3 | ORGANIC SETUPS, OIL SOLIDS | Organic setups are produced from treatment of liquid organic wastes generated by various plutonium and nonplutonium operations. The organic wastes are mixed with calcium silicate to form a grease of paste-like material. Small amounts of oil-dri absorbent are usually mixed with the waste.<br><br>Organic wastes such as degreasing agents ( primarily trichloroethane), lathe coolant (machining oil and carbon tetrachloride), and hydraulic oils are generated primarily by plutonium fabrication operations. Other organic wastes include carbon tetrachloride; trichloroethylene; hydraulic, gearbox, and spindle oils; and trace concentrations of miscellaneous organic laboratory wastes. (organophosphates, nitrobenzene, etc.) In addition, unknown volumes of oil containing polychlorinated biphenyls (PCB) were processed with other organic wastes until 1979. Degreasing solvents generated by Building 444 operations are contaminated with beryllium. | Rocky Flats Plant | 3 | 1 | 1 | 3 |

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| Waste Category 3=TRUW | Mixed Waste 1=mixed 2= non-mixed | Key Code | Wastestream Identifier Code | Content Code | Waste Stream Name | Description | Generator Site | Combustibility 1=>90% 2=10-90% 3=<10% | Rad Level 1=CH 2=some RH | PCBs 1=expected 2=not expected | Asbestos 1=expected 2=not expected 3=unknown |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 65 | ID-RFO-004T | 4 | SPECIAL SETUPS (CEMENT) | This waste, generated at Rocky Flats Plant, consists of liquids absorbed on a cement mixture. The liquid wastes are not compatible with aqueous treatment processes and are handled separately due to their plutonium complexing nature.<br><br>The majority of complexing chemical wastes are generated by various operations at Building 771, Plutonium Recovery operations. All waste are processed by aqueous waste treatment, building 774. The complexing chemicals include some alcohols, organic acids, and versenes (trademark for a series of chelating agents based on EDTA). All liquids are analyzed or assayed prior to release to Building 774 for treatment. Only below-discard contaminated wastes are released for processing. Above discard contaminated wastes are processed by plutonium recovery operations.<br><br>The cement mixture used for absorbing complexing liquid wastes is composed of approximately 190 lb of Portland cement and 50 lb of pipe insulation cement, such as magnesia cement. The cements are placed in a prepared 55-gallon drum; the drum is them placed on a drum roller and rolled to ensure mixing of the cements. All liquid wastes are made basic prior to adding them to the cement mixture. Approximaterly 100 liters of liquid waste is then poured on the cement mixture and allowed to solidify. Aproximately 10 to 15 lb of portland cement is then added on top of the cemented liquid waste before the o-ring bag is removed from the glovebox.<br><br>Since 1972, drums have been inspected for free liquids, proper packaging, and the use of proper content code. One to two quarts of oil-dri was placed on top of the outer, sealed polyethylene drum bag after inspection. In 1982, vermiculite replaced oil-dri to fill the remaining space between the outer, sealed polyethylene drum bag and the top of the rigid liner.<br><br>Some drums may be filled with the empty polyethylene bottles used to transport the liquid waste to Building 774. A small amount of portland cement is added to each bottle before placement in a drum. | Rocky Flats Plant | 3 | 1 | 2 | 2 |
| 3 | 1 | 227 | ID-RFO-005T | 5 | EVAPORATOR SALTS | Waste is generated at Rocky Flats Plant from aqueous waste treatment in building 774. Waste consists of a salt residue generated from concentrating and drying liquid waste from the solar evaporation ponds. The approximate chemical makeup of the salt is 60% sodium nitrate, 30% potassium nitrate, and 10% miscellaneous. Limited amounts of other wastes such as surgeons' gloves, paper, rags, and metal may be found in the waste drums. Portland cement was added to damp or wet salt when necessary.<br><br>The majority or salt drums in storage at the INEL should be contaminated with <10 nCi/g TRU. Salt waste is no longer shipped to the INEL.<br><br>Since 1972, drums have been inspected for free liquids, proper packaging, and use of the proper content code. After inspection, approximately 1 to 2 quarts of Oil-Dri was placed on top of the outer sealed polyethylene drum bag. | Rocky Flats Plant | 3 | 1 | 2 | 3 |
| 3 | 1 | 44 | ID-RFO-007T | 7 | BLDG 374 DRY SLUDGE | Building 374 solidified sludge consists of immobilized low-level mixed waste materials from decontamination-precipitation and neutralization processes in the Building 374 Liquid Waste Treatment Facility. The wastewater treatment operation includes neutralization, radioactive decontamination (precipitation), filtration, evaporation, spray drying, salt immobilization, and filtrate sludge immobilization. The sludge from the rotary drum vacuum filter has a dry appearance but is still very moist. The dried sludge was transferred from the dryer directly into a 55-gallon drum. The resulting waste consisted of dispersible fines and was assigned IDC 007. | Rocky Flats Plant | 3 | 1 | 2 | 2 |
| 3 | 1 | 63 | ID-RFO-112T | 112 | SOLIDIFIED ORGANICS | Certified (for WIPP) TRU solid organic waste consists of cemented or absorbed organic liquids from production or laboratory processes. The content code certifiably packaged as112 includes IDC 003. | Rocky Flats Plant | 3 | 1 | 2 | 2 |
| 3 | 1 | 40 | ID-RFO-113T | 113 | SOLID LAB WASTE | Certified solid lab waste consists of cemented or absorbed neutralized aqueous laboratory waste and includes some waste from IDCs 004 and 292.<br><br>Waste matrix composition listed is for IDC 004 waste, which accounts for most of the waste in this content code. | Rocky Flats Plant | 3 | 1 | 2 | 2 |
| 3 | 1 | 64 | ID-RFO-114T | 114 | SOLIDIFIED INORGANIC PROCESS SOLUTION | Certified (for WIPP) TRU solid inorganic process solution waste consists of cemented inorganic particulates of sludge-like (not chemically precipitated) wastes from plutonium recovery operations. The waste is packaged in 55-gallon drums or SWBs. Content code 114 includes some waste form IDCs 292 and 432.<br><br>Waste matrix composition listed is for Item Description Code (IDC) 292, the bulk of the waste. The waste is assigned matrix parameter code (mpc) S3123, based on IDC 292. The IDC 432 portion of the waste stream is mpc S3211. | Rocky Flats Plant | 3 | 1 | 2 | 2 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 82 | ID-RFO-116T | 116 | COMBUSTIBLE WASTE | Certified TRU (for WIPP) combustible waste consists of cellulosic plastic or cloth waste from various processes. The content codes certifiably packaged and included in 116 are 330, 336, 337, and 491. | Rocky Flats Plant | 1 | 1 | 2 | 3 |
| 3 | 1 | 147 | ID-RFO-117T | 117 | METAL WASTE | Certified TRU metal waste consists of discarded metal. The IDCs certifiably packaged and included in 117 are 320, 321, 480, and 488. | Rocky Flats Plant | 3 | 1 | 2 | 3 |
| 3 | 1 | 124 | ID-RFO-118T | 118 | GLASS WASTE | Certified TRU (for WIPP) glass waste consists of discarded labware, windows, containers or raschig rings from various processes. The IDCs certifiably packaged and included in 118 are 440, 441, and 442. Waste matrix composition listed is for IDC 440. For IDCs 441 and 442, the "Other Glass" matrix would be mostly raschig rings. | Rocky Flats Plant | 3 | 1 | 2 | 2 |
| 3 | 1 | 110 | ID-RFO-119T | 119 | HEPA FILTER WASTE | Certified TRU (for WIPP) HEPA filter waste consists of HEPA filters or processed filter media from filter change operations. The IDCs certifiably packaged and included in 119 are: 376 and 490. | Rocky Flats Plant | 2 | 1 | 2 | 1 |
| 3 | 1 | 97 | ID-RFO-122T | 122 | INORGANIC SOLID WASTE | Certified TRU (for WIPP) inorganic solid waste consists of waste such as insulation, firebrick, and concrete. The IDCs certifiably packaged and included 122 are 371, 374, 377, and 422.<br><br>The majority of the waste in this content code is waste generated during maintenance/stripout activities. (i.e. replacement of firebrick or insulation.)<br><br>Waste matrix composition listed is for IDC 374, which makes up the bulk of the waste in this content code. | Rocky Flats Plant | 3 | 1 | 2 | 3 |
| 3 | 1 | 132 | ID-RFO-123T | 123 | LEADED RUBBER | Certified TRU leaded rubber waste consists of discarded leaded glovebox gloves and leaded aprons. The IDC certifiably packaged and included in 123 is 339. | Rocky Flats Plant | 2 | 1 | 2 | 2 |
| 3 | 1 | 167 | ID-RFO-241T | 241 | AMERICIUM PROCESS RESIDUE | This waste stream, generated at the Rocky Flats Plant, consists of piping, flanges, valves, tools, equipment, PVC piping, glassware (flasks, broken ion exchange columns, etc.), glass filters, PE bottles, leaded glovebox gloves, paper, and plastics. Wastes were shipped only in 1972 and 1973, from renovation of the americium recovery line. Some of the containers are lead-lined.<br><br>Dispersible fines should be within WIPP-WAC limits. No sludges or free liquids should be present. No explosive or pyrophoric materials should be in this waste. Some dried residue of 7 N nitric acid, hydrochloric acid, and ammonium thiocyanate may be present.<br><br>Smaller waste items are single and double contained in PE or PVC bags. Most of the bagged waste was placed in 13-inch high by 15.5-inch diameter Fibre-Paks. Larger items are placed directly inside 55-gallon drums. Fibre-Paks are usually wrapped with lead tape. Two Fibre-Paks fit in each drum. Most drums were lead shielded with 1/16- to 1/8-inch thick lead sheeting. Each drum was assayed.<br><br>The waste matrix composition listed is based on drum sampling. No glassware or glass filters were contained in the sampled containers. | Rocky Flats Plant | 2 | 2 | 2 | 3 |
| 3 | 1 | 42 | ID-RFO-292T | 292 | CEMENTED SLUDGE | This waste stream, generated at Rocky Flats Plant, consists of sludge from the incinerator off-gas system, recovery building filter plenums, pumps, etc. Portland cement is added to absorb free liquids. The sludge may contain a limited number of surgical gloves. Content Code 292 replaced Code 290 in 1974.<br><br>Before 1977, sludge was sealed in PVC bags, double-contained in plastic and placed in 1-gallon metal paint cans. Portland cement was added to the bottom and top of the can. After 1977, sludge was placed in 1-gallon PE bottles with layers of portland cement. Each can (or bottle) was assayed and placed in groups of about 25 into prepared 55-gallon drums. Drum preparation was in accordance with pre and post 1972 procedures. Starting in 1982, vermiculite replaced Oil-Dri as the material between the top of the waste material and the drum liner lid. | Rocky Flats Plant | 3 | 1 | 2 | 2 |

**Table 1.** INEL transuranic mixed and non-mixed waste identification and description information.



| Waste Category 3=TRUW | Mixed Waste 1=mixed 2= non-mixed | Key Code | Wastestream Identifier Code | Content Code | Waste Stream Name | Description | Generator Site | Combustibility 1=>90% 2=10-90% 3=<10% | Rad Level 1=CH 2=some RH | PCBs 1=expected 2=not expected | Asbestos 1=expected 2=not expected 3=unknown |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 176 | ID-RFO-300T | 300 | GRAPHITE | This waste stream, generated at the Rocky Flats Plant, consists of graphite molds used in casting plutonium metal. The waste may also include small amounts of surgical gloves. The graphite is in the form of broken mold pieces. Some of the graphite has been scarfed or wire-brushed to remove above-discard deposits of plutonium.<br><br>The graphite molds are almost pure carbon and should be inert in storage. The waste is noncombustible, but if pulverized and well mixed it will burn. Fines are not packaged with the waste. Although breakage and fines may result after packaging, levels of fines should not exceed WIPP-WAC limits. The waste is packaged with no free liquids, sludges, explosives, compressed gases, pyrophoric or corrosive materials.<br><br>Graphite pieces may be packed directly into prepared 55-gallon drums or else first packed inside Fibre-Paks. The Fibre-Paks are 13 inches high by 15.5 inches in diameter. Sealed Fibre-Paks are sealed inside single (PVC) or double (PVC and PE) bags. Two Fibre-Paks are placed in each prepared 55-gallon drum. Drums were packed according to the usual pre-1972 and post-1972 procedures. Each drum was assayed. Since 1972, the drums were also processed according to inspection and sealing procedures; and, since 1982, vermiculite instead of Oil-Dri was placed on top of the outer sealed PE drum bag. | Rocky Flats Plant | 3 | 1 | 2 | 3 |
| 3 | 1 | 177 | ID-RFO-301T | 301 | GRAPHITE CORES | This waste stream, generated at the Rocky Flats Plant, is similar to graphite molds, Content Code 300. A graphite core is part of the shaped graphite mold used to cast plutonium metal. Some graphite molds are also included in this content code. This content code has not been used since 1977. The graphite has been broken into pieces, and some of the graphite has been scarfed or wire brushed to remove any above-discard deposits of plutonium.<br><br>The graphite cores are almost pure carbon and should be inert in storage. The waste is noncombustible, but if pulverized and well mixed it will burn. Fines are not packaged with the waste. Although breakage and fines may result after packaging, levels of fines, should not exceed WIPP-WAC limits. The waste is packaged with no free liquids, sludges, explosives, compressed gases, pyrophoric or corrosive materials.<br><br>Graphite core pieces may be packed directly into prepared 55-gallon drums or else first packed inside Fibre-Paks. The Fibre-Paks are 13 inches high by 15.5 inches in diameter. Sealed Fibre-Paks are sealed inside single (PVC) or double (PVC and PE) bags. Two Fibre-Paks are placed in each prepared 55-gallon drum. Drums were packed according to the usual pre-1972 and post-1972 procedures. Each drum was assayed. Since 1972, the drums were also processed according to inspection and sealing procedures. Oil-Dri was placed on top of the outer sealed PE drum bag. | Rocky Flats Plant | 3 | 1 | 2 | 3 |
| 3 | 1 | 53 | ID-RFO-302T | 302 | BENELEX AND PLEXIGLASS | This waste, generated at Rocky Flats Plant, consists of Benelex, which is used for neutron shielding, and Plexiglas glovebox windows. Lead sheeting (1/8 to 1/4 in. thick) may be attached to some benelex pieces. Benelex was usually coated with fire-retardant paint. In addition to Plexiglas, other types of glass such as leaded-glass may be present in the waste.<br><br>The waste may include limited amounts of surgeons' gloves, metal hinges on Benelex gloveport doors, pieces of angle iron attached to larger pieces of Benelex, and rubber gaskets from glovebox windows. Content code 302 replaced content code 464 during 1973.<br><br>The majority of waste drums will contain pieces of benelex (gloveport doors, etc.) generated from routine maintenance and renovation projects conducted primarily in 1972. Plexiglas and other types of glass may be found mixed in with the benelex and/or segregated and contained in a limited number of waste drums. Pieces of benelex waste were usually placed directly into prepared 55-gallon drums. Any contaminated Benelex was usually contained in plastic bags or wrapped in plastic sheeting. Plexiglas windows were usually contained in plastic before being placed in a prepared 55-gallon drum. Oil dri may have been added to the waste drums.<br><br>The waste boxes were generated during 1973 and 1974 and are believed to contain larger pieces of benelex shielding on angle iron frames that were removed during final fire cleanup operations in building 776. It is believed that the benelex came from the south foundry line in building 776, which was not directly involved in the 1969 fire and was decontaminated and placed back in operation.<br><br>The waste matrix composition listed is based on opening and examination of several drums of IDC 302 waste. More than 94% of this waste is in boxes, where a larger percentage of benelex (large pieces) can be expected. | Rocky Flats Plant | 2 | 1 | 2 | 3 |