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# Guidance for Reviewing and Approving a Waste Stream Profile in the Waste Compliance and Tracking System

By

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## Abstract

My ERM 593 applied project will provide guidance for the Los Alamos National Laboratory Waste Stream Profile reviewer (i.e. RCRA reviewer) in regards to *Reviewing and Approving a Waste Stream Profile in the Waste Compliance and Tracking System*. The Waste Compliance and Tracking system is called WCATS. WCATS is a web-based application that "supports the generation, characterization, processing and shipment of LANL radioactive, hazardous, and industrial waste." The LANL generator must characterize their waste via electronically by filling out a waste stream profile (WSP) in WCATS. Once this process is completed, the designated waste management coordinator (WMC) will perform a review of the waste stream profile to ensure the generator has completed their waste stream characterization in accordance with applicable state, federal and LANL directives particularly P930-1, "LANL Waste Acceptance Criteria," and the "Waste Compliance and Tracking System User's Manual, MAN-5004, R2," as applicable. My guidance/applied project will describe the purpose, scope, acronyms, definitions, responsibilities, assumptions and guidance for the WSP reviewer as it pertains to each panel and subpanel of a waste stream profile.

Expected Results:

The information/guidance provided in my applied project will be used to aid in the development of a Waste Management Services procedure.

The guidance may be used by the RCRA reviewer to process and activate a LANL waste stream profile.

My applied project will be published and cataloged in the Los Alamos National Laboratory library.

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## 1.0 PURPOSE

This guidance is developed for the Resource Conservation Recovery Act (RCRA) reviewer who performs technical reviews of Waste Stream Profiles (WSP) in the Waste Compliance and Tracking System (WCATS) to verify that LANL profiles have been sufficiently and accurately characterized to ensure the appropriate waste classifications are applied in accordance with state and federal regulations. The LANL generator, Waste Management Coordinator and Waste Management Services team members must comply with these regulations, specifically, Title 20, New Mexico Administrative Code, and Title 40, Code of Federal Regulations. This guidance document will also address LANL directives such as P930-1, "LANL Waste Acceptance Criteria," the LANL Hazardous Waste Facility Permit and the "Waste Compliance and Tracking System User's Manual, MAN-5004, R2," as applicable.

## 2.0 SCOPE

This guidance is specifically written for the RCRA reviewer (also known as a Waste Stream Profile reviewer) in the Waste Management Services group who perform technical reviews of WSPs that have been electronically submitted by a generator/Waste Certifying Official (i.e. WMC) to verify and ensure the appropriate waste classification (i.e. *waste type*), EPA waste codes, subcategories, and applicable ancillary waste types (e.g. PCB, beryllium, asbestos, New Mexico Special Waste) are applied, as applicable. There are, however, specific waste streams that will require additional reviews by LANL subject matter experts (SMEs) tasked with performing a final review, concurrence and approval of a WSP characterization relative to their area of expertise (e.g. PCB, ER, HE, HEWTF, RLWTF, RLWTP, SWWS, NNSS). Therefore, this guidance does not address the review and approval processes performed by these on-site LANL SMEs (Refer to Appendix #1, *LANL REVIEWERS* for a list of waste types and/or on-site TSDFs).

This guidance will describe each WCATS panel in regards to the WSP characterization relative to the following directives:

- LANL Waste Acceptance Criteria
- LDRs
- New Mexico Special Waste
- Radioactive waste streams
- Resource Conservation and Recovery Act
- Toxic Substance Control Act
- Waste Compliance and Tracking System User's Manual, MAN-5004, R2

## 3.0 ACRONYMS

| | |
|---|---|
| DX | Dynamic Experimentation Division |
| ENV-RCRA | Environment Protection – Water Quality and RCRA |
| EPA | U.S. Environmental Protection Agency |
| ER | Environmental Restoration |
| HAZW | Hazardous Waste |
| HE | High Explosives |
| HEWTF | High Explosives Wastewater Treatment Facility |
| LDR | Land Disposal Restriction |
| LANL | Los Alamos National Laboratory |
| MLLW | mixed low-level waste |
| NMAC | New Mexico Administrative Code |
| SDS | Safety Data Sheets |
| NNSS | National Nevada Security Site (formerly Nevada Test Site) |
| PCB | polychlorinated biphenyl |
| PRS | potential release site |
| RCA | Radiological Controlled Area |
| RCRA | Resource Conservation and Recovery Act |
| RLWTF | Radioactive Liquid Waste Treatment Facility |
| RLWTP | Radioactive Liquid Waste Treatment Plant |
| SME | subject matter expert |

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|---|---|
| SWMU | Solid Waste Management Unit |
| SWWS | Sanitary Waste Water System |
| TBD | To Be Determined |
| TRU | transuranic |
| TSCA | Toxic Substances Control Act |
| TSDF | treatment, storage, and disposal facility |
| UHC | underlying hazardous constituent |
| WAC | Waste Acceptance Criteria |
| WCSF | Waste Characterization Strategy Form |
| WEF | Waste Acceptance Criteria Exception Form |
| WMC | waste management coordinator |
| WSP | Waste Stream Profile (WPF or Waste Profile Form) |

## 4.0 DEFINITIONS

Acceptable Knowledge (AK): A waste stream characterization method that can be used to meet all or part of the waste analysis requirements appropriate for the waste media. The method may include documented process knowledge (knowledge of process; KOP), supplemental waste analysis data, and/or facility records of analysis.

Acute Hazardous Waste {40 CFR §261.33 (e)}: The commercial chemical products, manufacturing chemical intermediates, off-specification commercial chemical products, or manufacturing chemical intermediates referred to in paragraphs (a) through (d) of this section, are identified as acute hazardous wastes (H) and are subject to small quantity exclusion defined in §261.5 (e). In accordance with P-409, WM-RCRA-TOOL 101, those chemicals identified under 40 CFR §261.33 (e) when discarded are an acute hazardous waste with a hazardous waste number "P" (LANL, 2013).

Area of Concern (AOC) means any area that may have had a release of hazardous waste or hazardous constituents, which is not from a solid waste management unit (NMED, 2010).

"Asbestos waste" {20 NMAC 9.2.7(A) (10)}means a solid waste that contains more than 1 percent asbestos: (a) "friable asbestos material" means any material containing more than 1 percent asbestos, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure; (b) "category I non-friable asbestos containing material" means asbestos containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos; (c) category II non-friable asbestos containing material" means any material, excluding category I non-friable asbestos containing material, containing more than one percent asbestos, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand.

Characterization: “The determination of a waste’s physical, chemical, and radiological characteristics with sufficient accuracy to permit proper segregation, treatment, storage, and disposal according to the final treatment, storage, or disposal facility’s (TSDF’s) Waste Acceptance Criteria (WAC)” (LANL, 2013).

EPA Hazardous Waste Number {40 CFR §260.10}: means the number assigned by EPA to each hazardous waste listed in part 261, subpart D, and to each characteristic identified in part 261, subpart C.

Low-Level Radioactive Waste (LLW) {DOE Order M 435.1-1}: Radioactive waste that is not high-level waste, spent nuclear fuel, transuranic waste, byproduct material (as defined in section 11e.(2) of the Atomic Energy Act of 1954, as amended), or naturally occurring radioactive material.

Mixed Waste: {RCRA, 42 U.S.C.A. 6903(41)}: Any waste containing hazardous waste and source, special nuclear, or by-product materials subject to the Atomic Energy Act of 1954. "The use of the generic term “mixed waste” shall refer to both mixed LLW waste and mixed TRU waste" (LANL, 2013).

New Mexico Special Waste {20 NMAC 9.2.7 (S) (13)}: The following types of Solid waste have unique handling, transportation, or disposal requirements to assure protection of the environment, public health, welfare, and safety: treated formerly characteristic hazardous waste; packing house and killing plant offal; asbestos waste; ash; infectious waste; sludge, except compost that meets the provisions of 40 CFR Part 503; industrial Solid waste; spill of a chemical substance or commercial product; and petroleum-contaminated soils.

Noninfectious Biological Waste {20 NMAC 9.2.7 (I) (5) (G)}: A biological waste that cannot be classified as an infectious substance or a regulated medical waste and is not subject to

federal or state regulations on infectious waste, is not classified as an infectious substance or a regulated medical waste, and is not subject to federal or state regulations on infectious waste.

regulated medical waste {49 CFR §173.134(a) (5)}: A waste or reusable material, other than a culture or stock of an infectious substance, that contains an infectious substance and is generated in (1) the diagnosis, treatment or immunization of human beings or animals; (2) research pertaining to the diagnosis, treatment or immunization of human beings or animals; or (3) the production or testing of biological products.

Solid Waste 20 NMAC 9.2.2 (S) (9): means any garbage, refuse, sludge from a waste treatment plant, or air pollution control facility and other discarded material including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, construction, demolition, and agricultural operations and from community activities, but does not include:

- Drilling fluids, produced waters, and other nondomestic wastes associated with the exploration, development or production, transportation, storage, treatment or refinement of crude oil, natural gas, carbon dioxide gas or geothermal energy
- Fly ash waste, bottom ash waste, slag waste and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels and wastes produced in conjunction with the combustion of fossil fuels that are necessarily associated with the production of energy and that traditionally have been and actually are mixed with and are disposed of or treated at the same time with fly ash, bottom ash, boiler slag or flue gas emission control wastes from coal combustion
- Waste from the extraction, beneficiation and processing of ores and minerals including phosphate rock and overburden from the mining of uranium ore, coal, copper, molybdenum, and other ores and minerals

- Agricultural waste including, but not limited to, manure and crop residues returned to the soil as fertilizer or soil conditioner
- Cement kiln dust waste
- Sand and gravel
- Solid or dissolved material in domestic sewage; or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, 33 U.S.C. Section 1342; or source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954, 42 U.S.C. Section 2011 et seq., as amended
- Densified-refuse-derived fuel
- Any material except petroleum contaminated soils, regulated by Subtitle C or Subtitle I, 42 U.S.C. Section 6901 et seq. of the federal RCRA of 1976;
- substances regulated by the federal Toxic Substances Control Act (TSCA), 15 U.S.C. Section 2601 et seq., as amended
- radioactive waste (Source, special nuclear, or by-product materials subject to the Atomic Energy Act of 1954)

Solid Waste Management Unit or "SWMU" {20 NMAC 4.2.7 (NN)} means any discernible unit at which solid wastes have been placed at any time "from which the Department determines there may be a risk of a release of hazardous waste or hazardous waste constituents" (NMED, 2010), irrespective of whether the unit was intended for the management of solid or hazardous waste; such units include any area at a facility at which solid wastes have been routinely and systematically released.

Transuranic (TRU) waste {DOE M 435.1-1}: Radioactive "waste containing more than 100 nanocuries (3700 becquerels) of alpha-emitting transuranic isotopes per gram of waste, with half-lives greater than 20 years, except for: (1) high-level radioactive waste; (2) waste that the Secretary of Energy has determined, with the concurrence of the Administrator of the Environmental Protection Agency, does not need the degree of isolation required by the 40 CFR Part 191 disposal regulations; or (3) waste that the Nuclear Regulatory Commission has approved for disposal on a case-by-case basis in accordance with part 61 of title 10 Code of Federal Regulations (CFR)."

treatment: means any method, technique, or process-including neutralization-designed to change the physical, chemical, or biological character or composition of any waste so as to neutralize such waste or so as to recover energy or material resources from the waste or so as to render such waste nonhazardous or less hazardous and safe to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.

Universal Waste {40 CFR §273}: means any of the following hazardous wastes that are subject to the universal waste requirements of this part 273: for example, batteries as described in §273.2; pesticides as described in §273.3; and mercury containing equipment as described in §273.4; and lamps as described in §273.5.

Waste Acceptance Criteria (WAC): Criteria that must be met before a waste is accepted for treatment, storage, or disposal. Waste acceptance criteria may involve the physical form of a waste, a waste's container, its radioactivity, packaging, labeling, etc.

Waste Generators: "Individuals and their line management having direct responsibility for operations that generate waste. Waste generators have the responsibility for waste minimization, characterization, storage, and disposal of the waste they generate" (LANL, 2013).

Waste Management Coordinator (WMC): “The individual responsible for coordinating waste management activities on behalf of waste generators, line managers, facility managers, field project leaders, waste management groups, and other Laboratory organizations” (LANL, 2013).

## 5.0 RESPONSIBILITY

### 5.1 Waste Stream Profile RCRA Reviewer

- Perform waste stream profile reviews, rejections, and approvals of all LANL waste stream profiles.
- Review waste stream profiles for accuracy and completeness.
- Coordinate with the generator and/or WMC to resolve waste stream profile characterization discrepancies.
- Review and verify the waste stream characterization meets the applicable LANL Waste Acceptance Criteria (WAC).
- Evaluate, concur or amend the selected waste type.
- Determine and apply the appropriate EPA hazardous waste codes/subcategories to include biennial source and form codes and applicable ancillary waste types.
- Evaluate the characterization and classification of WSPs in accordance with the Resource Conservation and Recovery Act (RCRA), Toxic Substances Control Act (TSCA), New Mexico Administrative Code (NMAC), LANL WAC, and the LANL Hazardous Waste Facility Permit.

### 5.2 Assumptions

- The generator will follow all applicable LANL directives particularly the “Waste Compliance and Tracking System User's Manual, MAN-5004, R2.”
- The generator is the subject matter expert of their waste stream and is responsible for ensuring their waste stream profile is accurate and up-to-date.
- The waste management coordinator (WMC) will assist the generator to characterize and sufficiently document their waste stream profile in WCATS.

- The WMC will perform a pre-RCRA review of the waste stream prior to committing their electronic signature.
- The WMC is the primary point of contact between the RCRA reviewer and the LANL generator.
- The RCRA reviewer will possess the ability to navigate through each WCATS panel.


*Figure 1*. General Information Panel. From Waste Compliance and Tracking System User's Manual by LANL, 2012, p. 49. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 6.0 GENERAL INFORMATION

The General Information panel indicates the waste stream identification number, waste stream name, Legacy WPF number, site location, and the *waste type* of the waste stream. A *waste type* identifies whether the stream is a non-solid waste, solid waste, municipal refuse, RCRA hazardous waste, PCB waste, New Mexico Special Waste, low-level waste, mixed low-level waste, transuranic waste, mixed transuranic waste or destined to one of the on-site TSDFs (e.g. SWWS, RLWTF, RLWTP, TA-16 HE burn ground).

NOTE: The waste stream identification number and Legacy WPF number are sequential and automatically populated by WCATS. A profile search may be performed with the use of either unique number.

- Verify the waste stream name (e.g. "used organic solvents") reflects the waste stream characterization (e.g. "used organic solvents").
- Verify the WSP characterization supports the waste type (e.g. waste type *solid waste* = neither RCRA hazardous nor radioactive, waste type *hazardous* = characteristic and/or listed waste, or waste type *mixed low-level waste* = RCRA hazardous and radioactive).
- If, the waste *type* indicates “TBD” to be determined for unused/unspent streams, refer to section #10.1.1, *Unused/Unspent.*
- If a discrepancy exists with the waste stream name or waste type, then refer to section #30.0, *Resetting/Revoking a WSP in WCATS.*

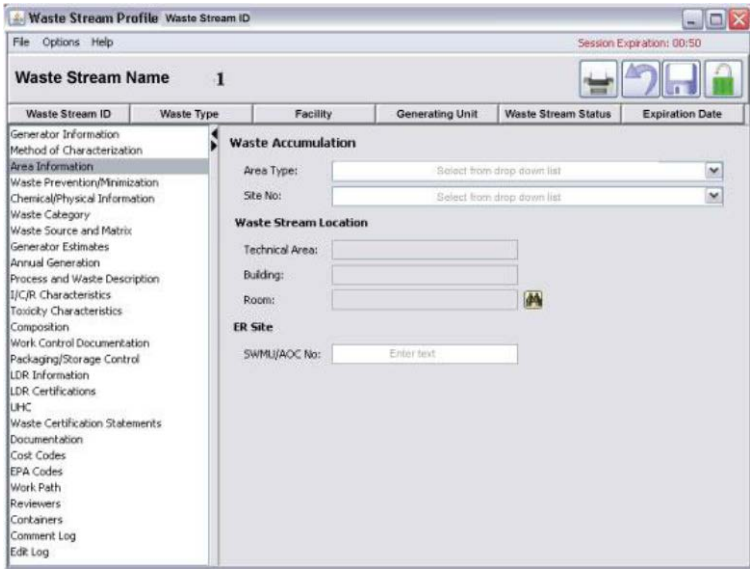


*Figure 2.* Site Area**.** From Waste Compliance and Tracking System User’s Manual by LANL, 2012, p.52. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 7.0 SITE AREA

The site area indicates the waste stream location, generating group, waste accumulation type (e.g. satellite accumulation area, <90 day storage area etc.), site number, and ER site identification field for either a Solid Waste Management Unit (SWMU) or Area of Concern (AOC).

- For an ER site, verify the waste characterization strategy form environmental protection number and waste characterization strategy form waste stream number is indicated in the waste stream profile (e.g. additional information panel).

NOTE: Any data (e.g. N/A) populated under the ER site number field will trigger the ER signature.

- Verify the SWMU number or AOC number is indicated under the ER site field.
- If, a generator indicates the waste stream is from a potential release site (PRS) but is not from an ER site, then, this information should be included in the body of the waste stream profile.

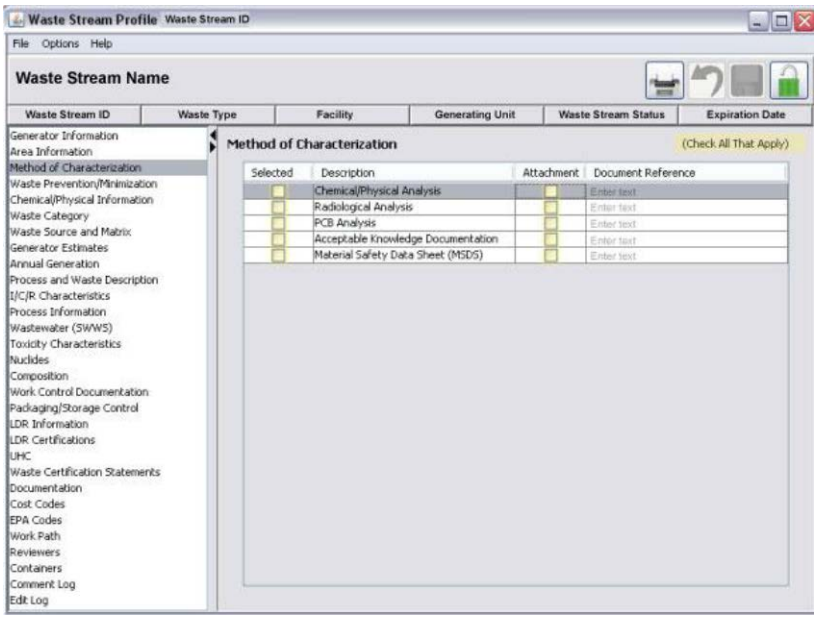

*Figure 3.* Method of Characterization. From Waste Compliance and Tracking System User's Manual by LANL, 2012, p.53. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 8.0 METHOD OF CHARACTERIZATION

The Method of Characterization panel indicates the methods by which a generator will use to properly characterize their waste to include a manufactures' document (e.g. Safety Data Sheets), chemical/physical analysis, radiological analysis, PCB analysis, and/or acceptable knowledge documentation. The generator may upload any of these documentations under the documentation panel.

"NOTE: Analysis is required when a waste stream has an unknown origin, a chemical reaction has occurred that may have created an unknown chemical compound" (LANL, 2012). Also, analysis may be required if the "AK documentation does not provide sufficient information to characterize the waste" (LANL, 2012).

- Verify the reference number(s), sample number(s) and/or acceptable knowledge documentation number(s) are appropriately identified in the method of characterization and documentation panels.
- Verify the document reference numbers support and/or agree with the WSP characterization.
- Verify all acceptable knowledge and/or analytical data are uploaded under the documentation panel, if possible.
- If, additional clarification or amendments are required, then, refer to section #30, *Resetting/Revoking a WSP in WCATS.*

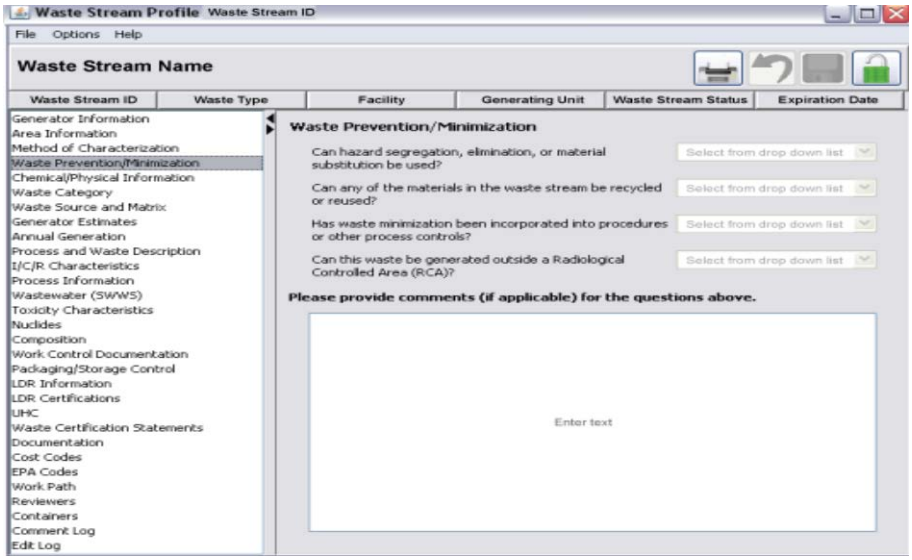


*Figure 4.* Waste Prevention/Minimization. From Waste Compliance and Tracking System User's Manual by LANL, 2012, p.54. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 9.0 WASTE PREVENTION/MINIMIZATION

As required by LANL directives (e.g. P930-2 Waste Certification Program, Hazardous Waste Facility Permit and P409 Waste Management), "waste generators must evaluate their processes prior to generating waste to ensure that waste minimization opportunities have been identified and implemented" (NMED, 2010). These criteria selections are a yes or no response which may require additional information.

- Verify all criteria have a yes or no response.
- If required, verify the comment supports the applicable selection (e.g. "Will any materials in the waste stream be recycled or reused"? (LANL, 2012). A yes response will require a comment entry in the comment box provided indicating how the stream will be recycled or reused).
- Verify the WSP characterization supports the yes or no selection (e.g. a yes response indicating the waste may be generated outside of a radiological controlled area should also prompt a yes response indicating the waste was generated outside of an RCA under the chemical and physical panel).

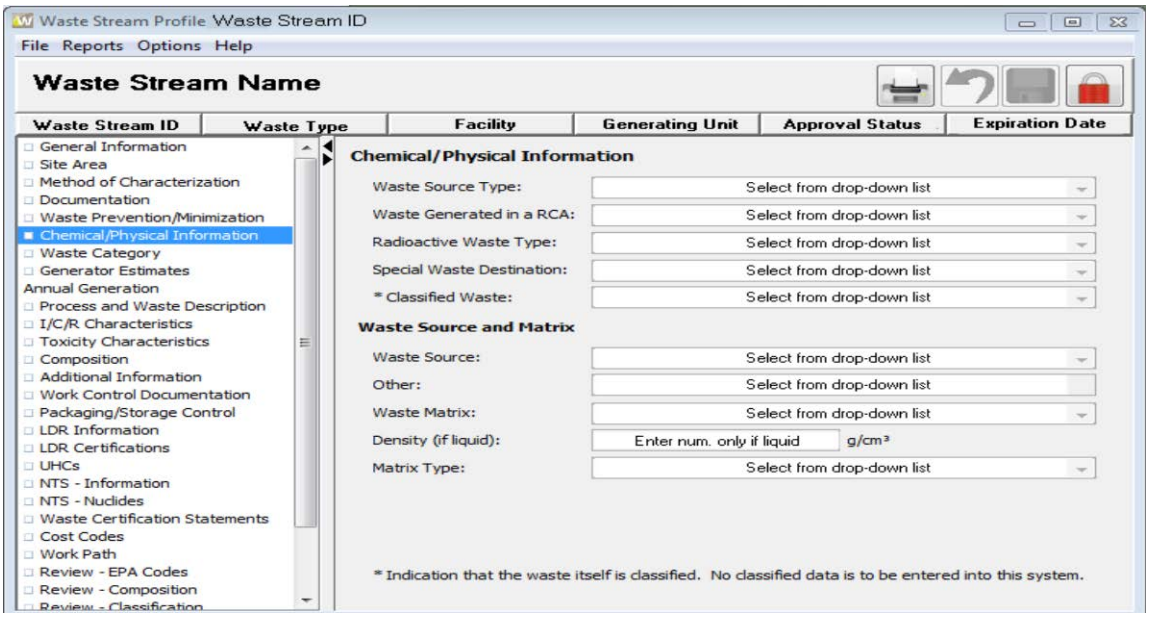


*Figure 5.* Chemical/Physical Information Panel. From Waste Compliance and Tracking System User's Manual by LANL, 2012, p.55. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 10.0 CHEMICAL/PHYSICAL INFORMATION PANEL

The chemical/physical information panel is made up of a number of specified selections to include the waste source type, waste generated in a radiological controlled area (RCA), the radiological waste type, special waste destination and a yes or no selection for classified waste. The guidance and/or criteria for each of these selections are described below.

### 10.1 Waste Source Type

There are two options available for a generator to choose from under this selection. One is for an unused/unspent chemical and the other is for a process waste or spent chemical.

NOTE: For an unused/unspent chemical the RCRA classification is determined by the waste disposal request reviewer (e.g. Department of Transportation reviewer) based on the manufactures' data provided by the waste management coordinator.

### 10.1.1 Unused/ Unspent

- If, the unused/unspent chemical is selected, then, the generator may elect to submit a generic profile in which some of the panels are not populated, such as the waste category panel, ignitability, corrosivity, reactivity characteristics panel, toxicity characteristics panel, composition panel and/or the land disposal restriction information panel (LDR).
- If, the generator has selected the waste type "TBD" then, verify the waste type is one of the following:
  - "TO BE DETERMINED BY THE CWDR REVIEWER-NON RAD" or
  - "TO BE DETERMINED BY THE CWDR REVIEWER-LLW" or
  - "TO BE DETERMINED BY THE CWDR REVIEWER-TRU"

### 10.1.2 Process Waste/ Spent Chemical

NOTE: "TBD" waste stream profiles (WSP) for management (e.g. repacking, lab packing activities) of mixed low-level waste, transuranic waste, or mixed transuranic waste are acceptable; however, prior approval is required before a WSP may be submitted via WCATS.

- Verify all applicable panels on the WSPs are filled out completely.
- Verify and/or ensure the waste type identified under the General Information panel is correct and consistent with the waste stream profile characterization, refer to section #6.0, *General Information or* section #30, *Resetting/Revoking a WSP in WCATS.*
- If the waste type is a "TBD" then some of the panels are not populated, such as the waste category panel, I/C/R characteristics panel, toxicity characteristics panel, composition panel and/or the LDR Information panel.
- If the waste stream is a RCRA hazardous waste, refer to section #26.0, *Review EPA Codes*.

- For the determination of LDRs, refer to section #21.0, LDR Information/LDR Certifications/LDR UHCs.

**10.2 Waste Generated in an RCA**

- Verify the generator has selected a yes or no response indicating whether or not a stream was generated in a radiological controlled area (RCA).
- Verify a response indicates whether the stream is non-radioactive, low-level or transuranic.
- If, a stream is low-level destined to National Nevada Security Site, then, refer to section #10.3.5, *National Nevada Security Site*.
- If, the stream is a mixed low-level waste, then, refer to section #23.0, *Mixed Low Level Waste*.
- If the waste stream is a transuranic wastewater destined to the Radioactive Liquid Waste Treatment Facility, refer to section #10.3.2.
- If the waste type reflects a special destination, proceed to section #10.3, Special Destination. If not, proceed to section #10.4, Waste Source and Matrix.

**10.3 Special Destination**

NOTE: The special destination criteria acceptance determination is performed by a LANS subject matter expert. Refer to Appendix A, *External Reviewers*.

- Sanitary Waste Water System, refer to section #10.3.1
- Radioactive Liquid Waste Treatment Facility, refer to section #10.3.2
- Radioactive Liquid Waste Treatment Plant, refer to section #10.3.3
- HE Wastewater Treatment Facility, refer to section #10.3.4
- Nevada Test Site (name changed to National Nevada Security Site), refer to section #10.3.5

### 10.3.1 Sanitary Wastewater System

The Sanitary Wastewater System review and acceptance is initiated by selecting the correct waste type under the general information panel. By selecting the correct waste type, WCATS will automatically populate the SWWS signature and attachment panels, based on the <= 100 gallon/day or > 100 gallon/day flow rate criterion. The applicable SWWS WAC requirements are found under P930-1 LANL WAC, Attachment 16, "Sanitary Wastewater System (SWWS)."

NOTE: A stream that contains any detectable amount of PCBs is not allowed to be treated at the SWWS.

[1] Verify the waste type reflects one of the following:

- "NON-SOLID WASTE FOR THE SANITARY WASTEWATER SYSTEM (SWWS)" or
- "NON-HAZARDOUS WASTE FOR SANITARY WASTEWATER (SWWS)"

[2] Verify the aqueous stream has been analyzed for Microtox or Biological Oxygen Demand (BOD5) parameters.

- Verify the Sanitary Wastewater System panels are consistent and accurate with the attached acceptable knowledge documentation, analytical data and/or WSP characterization.
- Verify the WSP characterization is not a RCRA characteristic/listed waste, low-level/mixed low-level waste, or a transuranic/mixed transuranic waste.
- If, the SWWS reviewer has determined a LANL Waste Acceptance Criteria Exception Form (WEF) is required, then, verify a completed/signed WEF is uploaded under the documentation panel prior to providing the WSP electronic signature.

### 10.3.2 Radioactive Liquid Waste Treatment Facility

The Radioactive Liquid Waste Treatment Facility review and acceptance is determined by selecting the correct waste type under the general information panel. By selecting the correct waste type, WCATS will automatically populate the RLWTF signature and attachments. The applicable, RLWTF requirements are found under P930-1 LANL WAC, Attachment 1, "Radioactive Liquid Waste Treatment Facility (RLWTF)."

NOTE: A separate WAC governing the wastewaters generated from TA-55 is not defined under P930-1, LANL WAC.

[1] Verify the waste type reflects one of the following:

- "NON-HAZARDOUS WASTE FOR THE RADIOACTIVE LIQUID WASTE TREATMENT FACILITY (RLWTF)" or
- "HAZARDOUS WASTE FOR THE RADIOACTIVE LIQUID WASTE TREATMENT FACILITY (RLWTF)" or
- "LOW LEVEL WASTE FOR THE RADIOACTIVE LIQUID WASTE TREATMENT FACILITY (RLWTF)" or
- "MIXED LOW LEVEL WASTE FOR THE RADIOACTIVE LIQUID WASTE TREATMENT FACILITY (RLWTF)" or
- "TRANSURANIC WASTE FOR THE RADIOACTIVE LIQUID WASTE TREATMENT FACILITY (RLWTF)" or
- "MIXED TRANSURANIC WASTE FOR THE RADIOACTIVE LIQUID WASTE TREATMENT FACILITY (RLWTF)"

[2] Verify the applicable Radioactive Liquid Waste Treatment Facility panels are consistent and accurate with the attached acceptable knowledge documentation, analytical data and/or WSP characterization.

- Verify the WSP characterization is not a RCRA characteristic (e.g. unless the stream is corrosive with a volume of "<50 gallons per discharge") (LANL, 2014).
- Verify the WSP characterization is not a listed waste nor contains any detectable amount of “DDT, dioxins or pesticides “or Polychlorinated Biphenyls (PCBs)” (LANL, 2014). If applicable, verify the attached radionuclide information (e.g. radiological assay characterization, AKD, PK) is consistent with the nuclides panel.
- If, the Radioactive Liquid Waste Treatment Facility reviewer has determined a LANL WEF is required, then, verify a completed/signed WEF is uploaded under the documentation panel prior to the WSP activation.

### 10.3.3 Radioactive Liquid Waste Treatment Plant

The Radioactive Liquid Waste Treatment Plant (RLWTP) review and acceptance is initiated by selecting the correct waste type under the general information panel. By selecting the correct waste type, WCATS will automatically populate the Radioactive Liquid Waste Treatment Plant signature and attachments. Assigned personnel from the Radioactive Liquid Waste Treatment Facility will perform all waste acceptance and reviews on behalf of the Radioactive Liquid Waste Treatment Plant. The applicable Radioactive Liquid Waste Treatment Plant requirements are found under P930-1 LANL WAC, Attachment 18, “TA-53 Radioactive Liquid Waste Treatment Plant (RLWTP).”

[1] Verify the waste type reflects one of the following:

- "NON-HAZARDOUS WASTE FOR THE RADIOACTIVE LIQUID WASTE TREATMENT PLANT (RLWTP)" or
- "LOW LEVEL WASTE FOR THE RADIOACTIVE LIQUID WASTE TREATMENT PLANT (RLWTP)"

[2] Verify the Radioactive Liquid Waste Treatment Plant panels are consistent and accurate with the attached acceptable knowledge documentation, analytical data and WSP characterization.

- Verify the waste stream profile characterization is not a RCRA characteristic or listed waste, low-level/mixed low-level waste, or a transuranic/mixed transuranic waste or contains any detectable amount of "DDT, dioxins or pesticides "or Polychlorinated Biphenyls (PCBs)" (LANL, 2014).
- If, the Radioactive Liquid Waste Treatment Plant reviewer has determined a LANL WEF is required, then, verify a completed/signed WEF is uploaded under the documentation panel prior to providing the WSP electronic signature.

### 10.3.4 HE Wastewater Treatment Facility

The HE Wastewater Treatment Facility at TA-16 acceptance is initiated by selecting the correct *waste type* under the general information panel. By selecting the correct *waste type*, WCATS will automatically populate the HE Wastewater Treatment Facility signature for review/acceptance under the signature panel.

NOTE: There is no specific LANL Waste Acceptance Criteria attachment for the HE Wastewater Treatment Facility nor are there any additional panels populated by WCATS when treating wastewater at the HE Wastewater Treatment Facility.

- Verify the waste type reflects “NON-HAZADOUS HE WASTE FOR PROCESSING AT TA-16”
- Verify the WSP characterization is not a RCRA characteristic or listed waste, low-level/mixed low-level waste, or a transuranic/mixed transuranic waste

- Verify the LDR is included with the WSP characterization as this is a TSDF requirement. Refer to section #21.0, *LDR Information/LDR Certifications/LDR UHCs*

### 10.3.5 National Nevada Security Site (Formerly Nevada Test Site)

Low-level waste destined to the National Nevada Security Site is governed under P930-1 LANL WAC, Attachment 17, “Waste Acceptance at the Nevada National Security Site (NNSS).” The correct waste type is Low *Level Waste Shipment to NTS*. By initiating the correct waste type, WCATS will automatically populate the LANL “NTS LLW Review” electronic signature in the Signatures panel.

- Verify the waste type is not a RCRA characteristic/listed waste, mixed low- level waste, transuranic waste, or mixed transuranic waste.
- Verify all nuclides are identified under the NTS –Nuclides panel with the appropriate units (e.g. $Bq/M^3$, $Ci/M^3$).
- Verify the acceptable knowledge documentation (AKD) cover letter is completed in accordance with Waste Management TOOL-313 and attached in the documentation panel.
- Verify the AKD cover letter and WPS characterization meets the specified criteria as described under Attachment 17, Waste Acceptance *at the Nevada National Security Site (NNSS).*

NOTE: A waste stream destined to a LANL controlled TSDF that contains a parameter outside of the LANL Waste Acceptance Criteria (WAC) will require a LANL Waste Acceptance Criteria Exception Form (WEF). Refer to section #24, *Waste Certification Statement*.

NOTE: A waste stream sent from a LANL facility directly off-site to the Nevada National Security Site that contains a parameter outside of the LANL Waste Acceptance Criteria will not require a LANL WEF. These unique low-level waste streams are "evaluated on a case-by-case basis" (LANL, 2012) and managed by the LANL Waste Certifying Official via a Nevada National Security Site Waste Acceptance Criteria deviation.

- If, the LANL Nevada National Security Site reviewer has determined a LANL WEF is required, then, verify a completed and signed WEF is uploaded under the documentation panel prior to activating the WSP.
- If, the LANL NNSS reviewer rejects the WSP then revoke the RCRA review signature and indicate the reason why the WSP was rejected. Refer to Resetting/Revoking a WSP in WCATS section #30, *Resetting/Revoking a WSP in WCATS.*
- If, the WSP is re-signed by the generator and WMC, then, re-review the WSP to verify the discrepancy has been corrected.
- Re-sign the WSP.

### 10.3.6 Classified Waste

Classified information is not allowed to be entered on a WSP. Refer to the WCATS User's manual section 3.2.6 Chemical Physical Information to include P930-1 LANL Waste Acceptance Criteria attachment 3, section 3.7.5 Classified Waste for disposal guidance.

## 10.4 Waste Source and Matrix

### 10.4.1 Waste Source

The waste source type designation requires the generator to select from two options known as waste source A and waste source B. Waste Source A is derived from routine "operations that is considered ongoing in nature" (LANL, 2012) such as schedule maintenance, production operation, R&D laboratory operations, and/or TSD operations. Waste Source B is derived from non-routine operations which are "generated or occurs on an unscheduled basis" (LANL, 2012) such as abatements, investigation derived, orphan/legacy or accidental spill cleanups.

- Verify a selection of waste source A or waste source B is provided.
- Verify the waste source type agrees with the WSP characterization (e.g. routine R&D laboratory operations would prompt a waste source A selection or accidental spills that would prompt a waste source B selection).
- If, other is selected for either waste source A or waste source B, verify a comment is provided in the "Other" field.

### 10.4.2 Waste Matrix

The waste matrix is defined by three categories to include a gas, a liquid and a solid. The gas (e.g. <=1.5 atmospheres, > 1.5 atmospheres, or liquefied) waste matrix category is typically found in lecture bottles and/or DOT gas cylinders. A liquid (e.g. aqueous or non-aqueous etc.) waste matrix category is based on the "Paint Filter Liquids Test" SW846, Method 9095B and/or acceptable knowledge. The solid (e.g. powder, sludge, debris etc.) waste matrix category by contrast will pass the paint filter liquids test. For a detailed description of these three matrix categories and/or subcategories, refer to the Waste Matrix Reference Table, under the WCATS user's manual section 3.2.6, Chemical/Physical Information.

NOTE: Unused/unspent LANL WSPs do exist for gas cylinders and/or lecture bottles.

- Verify the WSP characterization supports the waste matrix selection of a solid or liquid waste.
- If, a liquid waste matrix is selected, then, the density must be identified in $g/cm^3$.
- Verify the matrix type homogenous is selected for a single material or substance.
- Verify the matrix type heterogeneous is selected for streams that possess a different density or specific gravity.

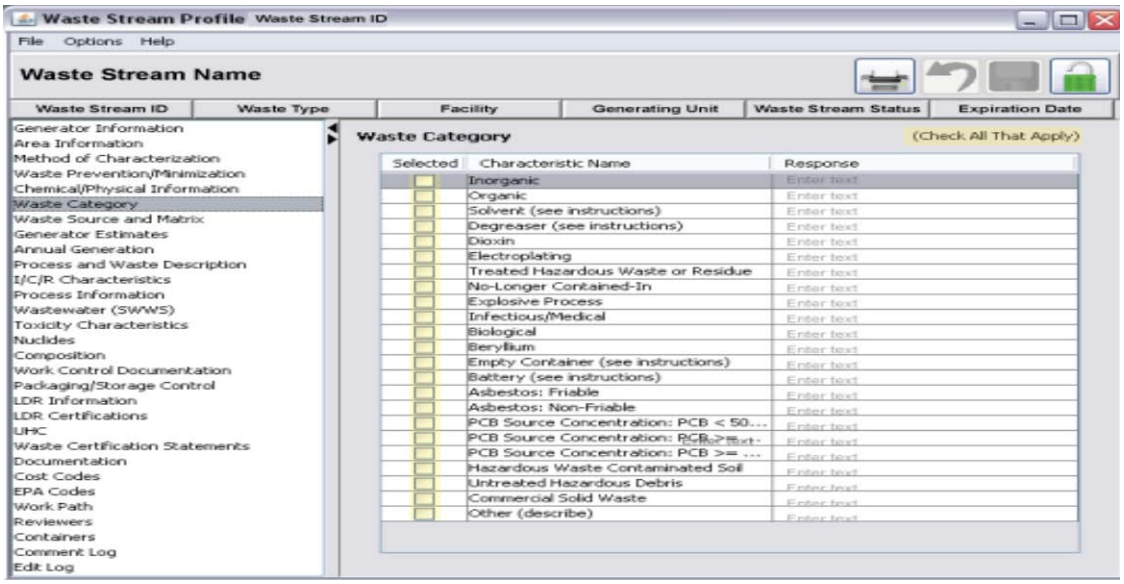


*Figure 6.* Waste Category. From Waste Compliance and Tracking System User's Manual by LANL, 2012, p.59. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 11.0 Waste Category

The waste category panel is made up of a series of defined criteria used by the generator to further characterize their waste. This section is also used by the RCRA reviewer to verify/determine the appropriate waste type, waste classification, EPA waste codes, LDRs, and ancillary waste type, as applicable. The following criteria are defined under the WCATS User's Manual, MAN-5004, R2 (LANL, 2012).

NOTE: If, additional clarification or amendments are required, then, refer to Resetting/Revoking a WSP in WCATS section #30.0, *Resetting/Revoking a WSP in WCATS.*

**11.1 Inorganic**

"A chemical compound that do not contain carbon as the principle element (except carbonates and cyanides)" (LANL, 2012).

- As applicable

**11.2 Organic**

"Composed of chemical compounds based on carbon chains/rings and containing hydrogen with/without oxygen, nitrogen, and other elements" (LANL, 2012).

- As applicable

**11.3 Solvent/Degreaser**

A solvent is a "Substances that dissolve or mobilize other constituents (examples: degreasing, cleaning, fabric scouring, diluents, extractants, reaction, and synthesis media). Still bottoms from recovery or recycling of listed solvents are also listed solvents" (LANL, 2012).
A degreaser is a chemical used to "clean or dissolve organic contamination from an object" such as a "mechanical or electrical component" (LANL, 2012).

NOTE: In addition to the WCATS user's guide mentioned above, also refer to 40 CFR 261.31 for a complete definition and chemical listing criteria of an F001- F005 solvent and/or degreaser.

NOTE: For a characteristic waste stream, refer to section #15.0, *Ignitability, Corrosivity, and Reactivity (I/C/R) and section #16.0, Toxicity Characteristics.*

NOTE: For applicability of LDRs, refer to section #21.0, LDR Information/LDR Certifications/LDR UHCs.

- Verify if the listing applies per the derived from rule and/or contained-in policy. If applicable, assign the appropriate F001-F005 RCRA waste codes, refer to section # 26.0, *Review EPA Codes*.
- Verify a waste description of solvent/degreaser use is provided under the process and waste description panel.
- Verify a list of chemicals used as solvents and/or degreasers that meet the solvent listing are indicated under the process and waste description or the additional information panels.
- Verify a Land Disposal Restrictions Information/Land Disposal Restriction Certifications/Land Disposal Restrictions Underlying Hazardous Constituents, as applicable, is included within the WSP characterization, prior to providing a WSP electronic signature. For applicability of LDRs, refer to section #21.0, LDR Information/LDR Certifications/LDR UHCs.

### 11.4 Dioxin

Dioxin is a “discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these formulations" such as a “polychlorinated dibenzo-para-dioxin" (LANL, 2012).

- If, pentachlorophenol, 2, 4, 5-trichlorophenol and/or 2, 4, 6-trichlorophenol are an unused/unspent chemical and identified under the toxicity characteristic panel, then determine the applicability of EPA waste code F027. For examples of dioxin waste, refer to refer to 40 CFR 261.33 Discarded commercial chemical products, off-specification species, container residues, and spill residues thereof.

### 11.5 Electroplating

Electroplating is typically associated with operations in which a thin layer of metal coats an object by electrolysis. “The process can generate corrosive and toxic metal-containing wastewater, treatment sludges and rinsates” (LANL, 2012).

NOTE: Refer to 4.2.1.6 *Waste Category*, Table #4, of the WCATS user's guide or 40 CFR 261.31, Hazardous waste from non-specific sources for examples of wastewater treatment sludges from electroplating operations for waste sources that will or will not receive an F-listing.

- If, electroplating is selected, then determine the applicability of the following F- listings:
  - F006 wastewater treatment sludge, or
  - F007 spent cyanide plating solutions, or
  - F008 plating bath residues derived from cyanide solutions, or
  - F009 spent stripping and cleaning bath solutions derived from cyanide use, or
  - F019 regulated waste sludge (e.g. derived from chemical conversion coating of aluminum)

### 11.6 Treated Hazardous Waste or Residue

"Waste or residue generated from the treatment of listed or characteristic hazardous waste” (LANL, 2012).

- Verify a complete and concise description of the treated waste is described under the process and waste description.

- Verify the *waste type* is a New Mexico Special Waste, and the ancillary waste type reflects Treated Formerly Characteristic Hazardous Waste. Refer to section #28.0, Review Classification.

- Verify the *waste type* for a listed waste remains as a RCRA *hazardous waste* and maintains all applicable F-listings; verify an LDR and LDR certification(s) are included in the waste stream characterization.

- If, after treatment the stream still contains a characteristic waste, then, verify the *waste type* remains a RCRA *hazardous waste*. Verify an LDR and LDR certification(s) and UHCs, as applicable, are included in the waste stream characterization.

- Ensure the RCRA waste codes are included as applicable. Refer to section #26.0, *Review EPA Codes*.

### 11.7 No-longer Contained-In

"This applies only to hazardous debris and/or hazardous environmental media for which the generator has received a no-longer contained-in determination from the State" (LANL, 2012).

- Verify the contained-in determination is approved by NMED.
- Verify the no-longer contained-in check box is selected under the waste category panel.
- Verify the no-longer contained-in letter is uploaded under the *Documentation Panel* prior to activating the WSP.
- Verify a complete and concise description of the “no-longer contained-in” waste determination is indicated under the process and waste description, the additional information panel and/or the comment log (e.g. site location, media/debris type, applicability of LDRs).

### 11.8 Explosive Process

"High Explosive (HE) or HE contaminated waste. Treated explosive waste does not fall under this category but falls under the "Treated Hazardous Waste or Residue" category" (LANL, 2012). Technical Areas 16, 36, and/or 39 are the only LANL TSDFs allowed to accept and treat high explosive waste (i.e. EPA waste code D003, *reactivity characteristics*).

- If a stream is a High Explosive waste (i.e. EPA waste code D003, *reactivity characteristics*) then, verify the waste type is one of the following:
  - HAZARDOUS HE WASTE For DX TA-36, 39, 14
  - HAZARDOUS HE WASTE FOR PROCESSING AT TA-16
- If a stream is derived from a high explosive process and does not meet the definition of a high explosive waste stream (i.e. EPA waste code D003, *reactivity characteristics*) then, verify the appropriate waste type is selected (e.g. solid waste, hazardous waste etc.).
- If, a high explosive or high explosive contaminated waste has been treated and is no longer reactive, then, refer to section #10.6, *Treated Hazardous Waste or Residue*.
- For applicability of LDRs, refer to section #21.0, LDR Information/LDR Certifications/LDR UHCs.

### 11.9 Infectious/Medical

"Waste materials that carry a probable risk of transmitting disease to human disease to humans or animals (e.g. regulated medical waste, infectious substances (etiologic agents), and other potentially infectious materials)" (LANL, 2012).

- If the waste stream is non-RCRA hazardous waste and nonradioactive, verify the waste type is a New Mexico Special Waste and verify the infectious/medical checkbox under the waste category and ancillary waste type are selected.
- If the stream is a low-level waste, verify the infectious/medical checkbox under the waste category and ancillary waste type are selected.
- Verify a description of the regulated infectious/medical stream is provided under the process and waste description panel or additional information panel.

### 11.10 Biological

"A waste that cannot be classified as an infectious substance or as a regulated medical waste and is not subject to federal or state regulations of infectious waste" (LANL, 2012).

- Verify the stream is not regulated as an infectious/medical waste (i.e. New Mexico Special Waste).
- Verify the ancillary waste type for an infectious waste is not selected.

### 11.11 Beryllium

"Includes beryllium metal, beryllium oxide, alloys containing 0.1% or more beryllium, and beryllium compounds, such as beryllium sulfate" (LANL, 2012).

- Verify the beryllium contamination does not exceed 1% for a low-level waste destined to the National Nevada Security Site.
- Verify the beryllium in a low-level waste stream destined to area G does not exceed 20% by weight.
- If a specified LANL WEF is required, verify a signed WEF is uploaded to documentation panel. Refer to section #23, *Waste Certification Statement.*
- If the waste type is "Beryllium Waste" then selecting beryllium as an ancillary waste type is not required.

- If the waste type does not reflect “Beryllium Waste” (e.g. hazardous waste, low-level waste, mixed low-level waste, transuranic waste, mixed transuranic waste), then, ensure beryllium is selected as an ancillary waste type.

### 11.12 Empty Container

Refer to 40 CFR 261.7 Residues of hazardous waste in empty containers for a complete description of an empty container.

- Verify the empty container check box is selected under the waste category panel.
- Verify a comment describing empty container is provided under the Process and Waste Description panel.
- Verify and/or ensure a comment as to the applicability of a P-listing is indicated in the waste and process description panel, additional information panel and/or the comment log panel.
- If a RCRA empty container held a P-listed constituent, apply the appropriate P-listed waste code under the Review-Classification panel and verify an LDR is included in the WSP characterization.

### 11.13 Battery

Hazardous-waste batteries (e.g., mercury, lithium, and nickel-cadmium). Note: Alkaline and carbon batteries may be discarded as municipal refuse” (LANL, 2012).

NOTE: Generators may use a lab-wide universal waste stream profile (WSP) for intact batteries provided the batteries are generated outside of a radiological controlled area.

- If the generator submits a WSP for intact hazardous waste batteries, verify the *waste type* under the general information panel is “UNIVERSAL WASTE.”

- If, the integrity of a hazardous waste battery is breached, then, the battery must be managed as a hazardous waste to include LDRs as applicable.
- If the hazardous waste battery cannot be free released, then, verify the *waste type* under the general information panel is a “MIXED LOW LEVEL WASTE” to include LDRs as applicable.

### 11.14 Asbestos

Asbestos wastes" means a solid waste that contains 1 percent or more of "naturally occurring crystalline minerals: chrysotile, amosite, crocidolite, tremolite, actinolite, and anthrophylillite (Refer to section #4, *Definitions*).

NOTE: There are existing LANL-wide profiles for both friable and non-friable asbestos.

- If, the generator elects to submit a WSP for friable or non-friable asbestos, then, verify the *waste type* reflects "New Mexico Special Waste."
- If, the generator is attaching the analytical data and/or acceptable knowledge documentation, then, verify this data is uploaded under the *documentation* panel.
- If, the *waste type* is a New Mexico Special Waste, then, verify or ensure asbestos is selected as an ancillary waste type under the *review-classification* panel.
- If the *waste type* is not a New Mexico Special Waste (e.g. hazardous waste, LLW, MLLW, TRU, or MTRU), verify or ensure asbestos is selected as an ancillary waste under the *review-classification* panel.

### 11.15 PCB Source

“Regulated by the source concentration of polychlorinated biphenyls PCBs in the material.”

NOTE: The selection of a PCB source concentration checkbox will trigger the PCB review signature.

- If the *waste type* selected is "PCB WASTE" (i.e. regulated PCB medium concentration >= 50 ppm - < 500 ppm or PCB high concentration >500 ppm), then, do not select the PCB as an ancillary waste type waste under the *review-classification* panel.
- If, another waste type is selected (e.g. hazardous waste, LLW, MLLW, TRU, or MTRU) and the stream contains a PCB medium concentration or PCB high concentration, then, ensure the PCB ancillary waste type is selected under the *review-classification* panel.
- If the PCB source concentrations is <50 ppm, then, do not select PCB as a *waste type* or *ancillary waste type*.

### 11.16 Hazardous Contaminated Soil

A hazardous contaminated soil is “Soil that contains a hazardous waste listed in subpart D of part 261, or that exhibits a characteristic of hazardous waste identified in subpart C of part 261. For a complete definition of soil and/or hazardous waste soil, refer to 4.2.1.6 *Waste Category*, Table #4, of the WCATS users guide for a complete description of “Soil.”

- Verify the appropriate *waste type* is selected (e.g. Hazardous Waste).
- Verify the hazardous contaminated soil check box is selected under the *waste category* panel.
- Verify the WSP characterization is complete and accurate as indicated under the toxicity characteristics panel, composition panel and/or uploaded in the documentation panel (i.e. verify each panel along with the analytical data or acceptable knowledge documentation are consistent).
- For applicability of LDRs, refer to section #21.0, *LDR Information/LDR Certifications/LDR UHCs*.

### 11.17 Untreated Hazardous Debris

"Debris that contains a hazardous waste listed in Subpart D of part 261, or that exhibits a characteristic of hazardous waste identified in subpart C of part 261 (e.g., PPE)" (LANL, 2012).

NOTE: Refer to 40 CFR 268.3, *Dilution prohibited as a substitute for treatment* for additional requirements regulating hazardous debris.

NOTE: As a best management practice, all potential UHCs are identified to facilitate the TSDF's determination and treatment of the hazardous debris to ensure compliance in accordance with 40 CFR 268.45 Treatment standards for hazardous debris.

- Verify the WSP characterization is complete and accurate as indicated under the toxicity characteristics panel, composition panel and/or uploaded in the documentation panel (i.e. verify each panel along with the analytical data or acceptable knowledge documentation are consistent).
- Verify a description of the untreated hazardous debris is provided under the Process and Waste Description panel or Additional Information panel.
- Verify all potential UHCs are identified under the UHCs panel.
- For applicability of LDRs, refer to section #21.0, *LDR Information/LDR Certifications/LDR UHCs*.

### 11.18 Commercial Solid Waste

A [commercial] solid waste does not include wastes that are "hazardous, mixed, TSCA, NM Special Waste, wastes in liquid form, or concrete or asphalt waste destined for use, reuse or recycling, or any waste destined for an industrial landfill" (LANL, 2012).

NOTE: The LA County Eco Station is a transfer station, only. No LANL solid waste is disposed of at this site.

NOTE: ENV-CP review/approval signature is required to dispose any municipal refuse waste off-site via the LA County ECO Station.

- If, the commercial solid check box is selected, verify the *waste type* selection under the general information panel is “Municipal Refuse.”

Verify the waste stream does not contain a "hazardous, mixed, TSCA, NM Special, wastes in liquid form, or concrete or asphalt waste destined for an industrial - waste landfill" (LANL, 2012).

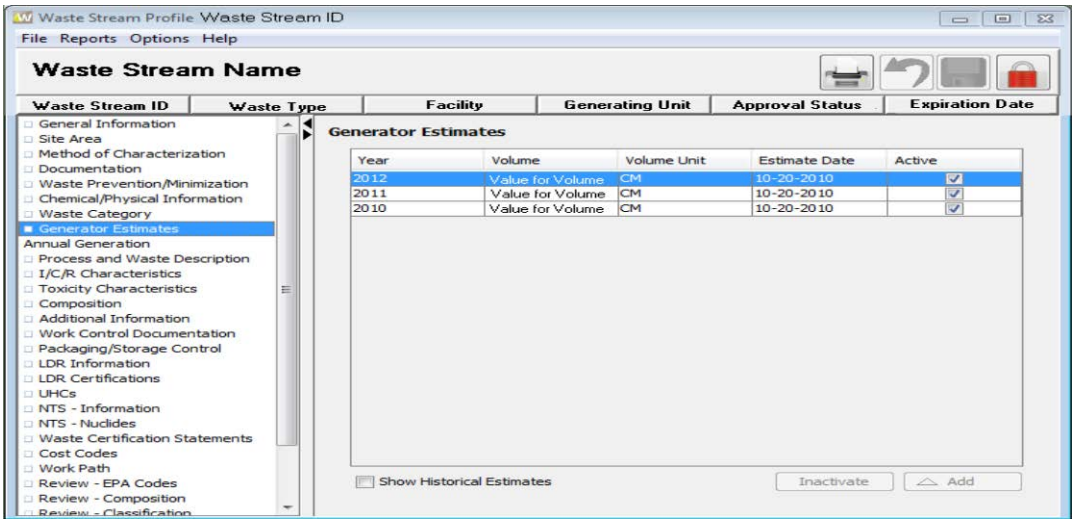


*Figure 7.* Generator Estimates. From Waste Compliance and Tracking System User’s Manual by LANL, 2012, p.65. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 12.0 Generator Estimates

“Generators are expected to provide a general estimate of the waste stream’s annual volume per calendar year” (LANL, 2012). This criterion will include at a minimum of three years beginning with the current year (e.g. 2015, 2016, and 2017). If the review process continues

into a new calendar year, verify that the generator estimates are also updated (e.g. 2016, 2017, and 2018); otherwise, the electronic signature will not activate.

NOTE: A generator and/or WMC may adjust these estimates on an on-going basis without resetting or revoking the electronic signature of a WSP.

## 13.0 Annual generation

"Annual generation application keeps track of the amount of waste generated on a given waste stream for the year to date" (LANL, 2012). Thus, this panel is for informational purposes only in which there is no requirement in the RCRA review process.

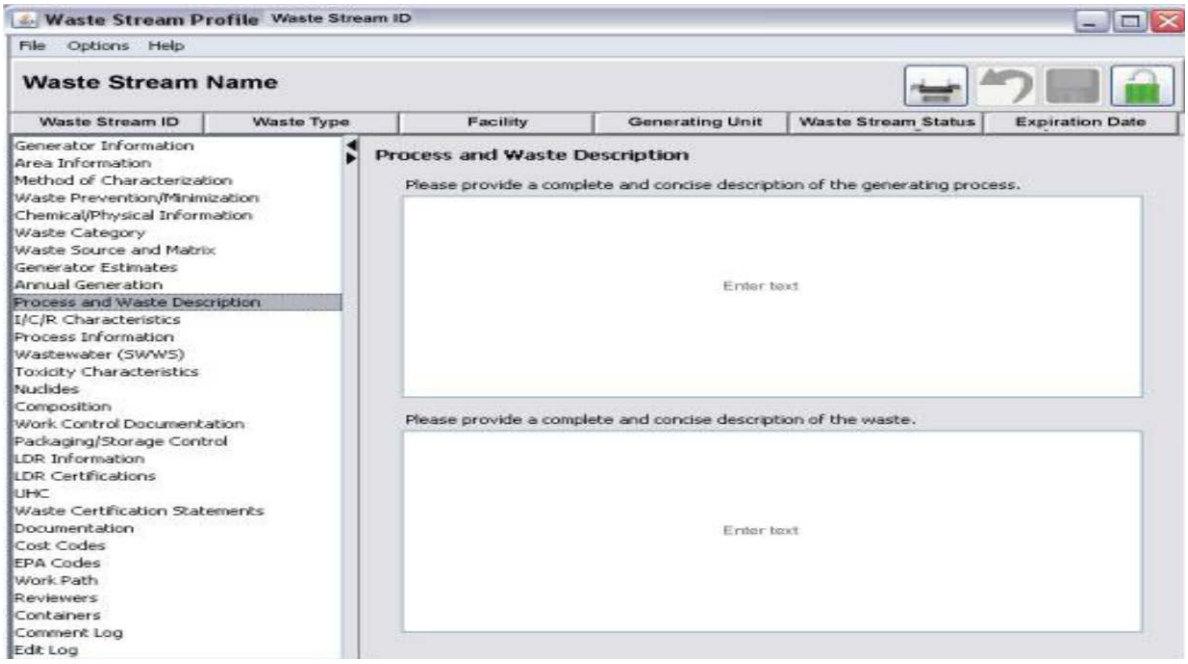


*Figure 8.* Process and Waste Description. From Waste Compliance and Tracking System User's Manual by LANL, 2012, p.65. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 14.0 Process and Waste Description

The process and waste description panel is integral in the determination and application of EPA waste codes and the EPA source and form codes. The process description should aid the RCRA reviewer in the determination between a characteristic or listed waste. Also included in this panel is the waste description. The waste description details the waste of a stream and should be consistent with the WSP characterization.

- Verify the generator has sufficiently described the process to facilitate the determination of a characteristic, listed and EPA source and form codes.
- Verify the process and waste description supports the WSP characterization of other panels such as the I/C/R panel, toxicity characteristic panel, composition panel and/or the documentation panel. This would also include LDRs.
- Verify the waste characterization supports other criteria such as the waste type, waste category panel and/or ancillary waste type (e.g. a non-radioactive waste description of friable asbestos requires the waste type selection of New Mexico Special Waste, selection of asbestos friable under the waste category panel and as an ancillary waste type under the review classification panel etc.).

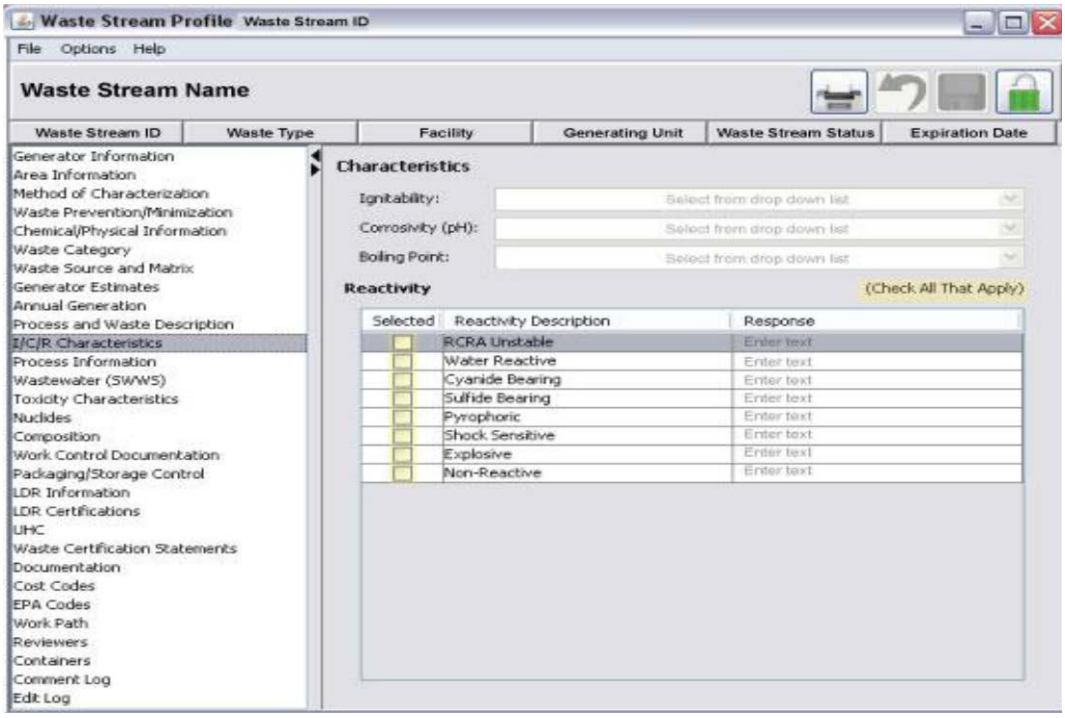


*Figure 9.* Ignitability, Corrosivity, and Reactivity (I/C/R). From Waste Compliance and Tracking System User's Manual by LANL, 2012, p.65. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 15.0 Ignitability, Corrosivity, and Reactivity (I/C/R)

I/C/R applicability is determined in accordance with the WCATS Unser's Manual, MAN-5004, R2, section 4.2.1.10 I/C/R, Table 5, and/ or under the following citation as defined:

## 15.1 Ignitability (i.e. D001)

- Ignitable: refer to 40 CFR 261.21 (a) (1)
- EPA Ignitable non-liquid: refer to 40 CFR 261.261.21 (a) (2)
- DOT Flammable Gas: refer to 40 CFR 261.21 (a) (3) in which RCRA defers the criteria to 49 CFR 173.115(a)
- DOT Oxidizer: refer to 40 CFR 261.21 (a) (4) in which RCRA defers the criteria to 49 CFR 173.127 (a)
- Not Ignitable

### 15.2 Corrosivity (i.e. D002)

- An aqueous solution refer to 40 CFR 261.22 (a) (1) or
- A solid matrix refer to 40 CFR 261.22 (a) (2)

### 15.3 Reactivity (i.e. D003)

- RCRA unstable refer to 40 CFR 261.23 (a)(1)
- Water reactive refer to 40 CFR 261.23 (a)(2) or 40 CFR 261.23 (a)(3) or 40 CFR 261.23 (a)(4)
- Cyanide bearing refer to 40 CFR 261.23 (a)(5)
- Sulfide bearing refer to 40 CFR 261.23 (a)(5)
- Pyrophoric refer to 40 CFR 261.23 (a)(1) or 40 CFR 261.23 (a)(6) or 40 CFR 261.23 (a)(7)
- Shock sensitive refer to 40 CFR 261.23 (a)(7)
- High explosive refer to 40 CFR 261.23 (a)(8) which is defined as a forbidden explosive as described under 49 CFR 173.54 or 49 CFR 173.50 and 173.53.

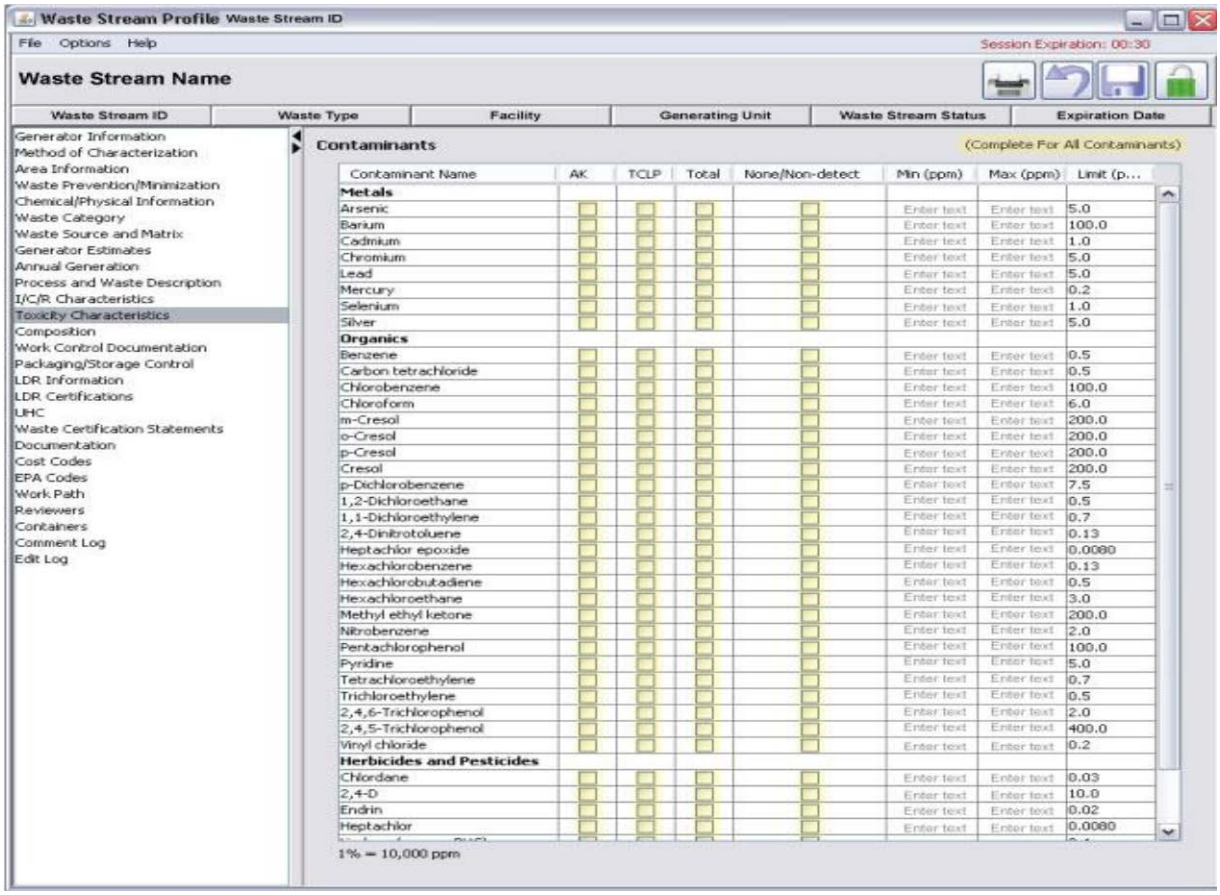


*Figure 10.* Toxicity Characteristics. From Waste Compliance and Tracking System User's Manual by LANL, 2012, p.69. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 16.0 Toxicity Characteristics (e.g. D004- D043)

The toxicity characteristics panel identifies eight metals, 24 organic chemicals and eight pesticides/herbicides (per 40 CFR 261.24, Toxicity Characteristic, Table 1-Maximum Concentration of Contaminants for the Toxicity Characteristic). The toxicity characteristics panel is based on the toxicity characteristic leaching procedure (TCLP) in which a constituent is compared at or above the stated regulatory limit.

- Verify, all TC detects include a minimum and maximum range (ppm).

- Verify, the generator has characterized their waste via acceptable knowledge and/or analysis (i.e. totals analysis and/or TCLP).
- If, a solid matrix is analyzed via totals method, the “20 times rule” may be applied. That is, verify all analytical detects are indicated “as-is” in accordance with the uploaded laboratory report and divide the maximum value by 20, then, compare these results directly to the regulatory limit (e.g. analytical detect for barium = 500 ppm/20 = 25 ppm < 100 ppm regulatory limit = a non-RCRA hazardous waste). Refer to 40 CFR 261.24 “Toxicity characteristic,” Table 1- Maximum Concentration of Contaminants for the Toxicity Characteristic and/or Appendix # 5, POTENTIAL EPA WASTE CODES FOR A CHARACTERISTIC AND/OR LISTED WASTE.
- If, a process waste meets the definition of an F-listed solvent/degreaser, then, apply the appropriate F-listing (e.g. benzene = F005; carbon tetrachloride = F001; chlorobenzene = F002; cresols = F004; MEK =F005, nitrobenzene =F004; pyridine =F005; tetrachloroethylene = F001, F002; and/or trichloroethylene =F001, F002. Refer to 40 CFR 261.31 “Hazardous waste from non-specific sources” for a detail description of these F-listings and/or 40 CFR 261.33 “Discarded commercial chemical products, off-specification species, container residues and spill residues thereof.”
- If, additional clarification or amendments are required, then, refer to Resetting/Revoking a WSP in WCATS section #30, *Resetting/Revoking a WSP in WCATS.*

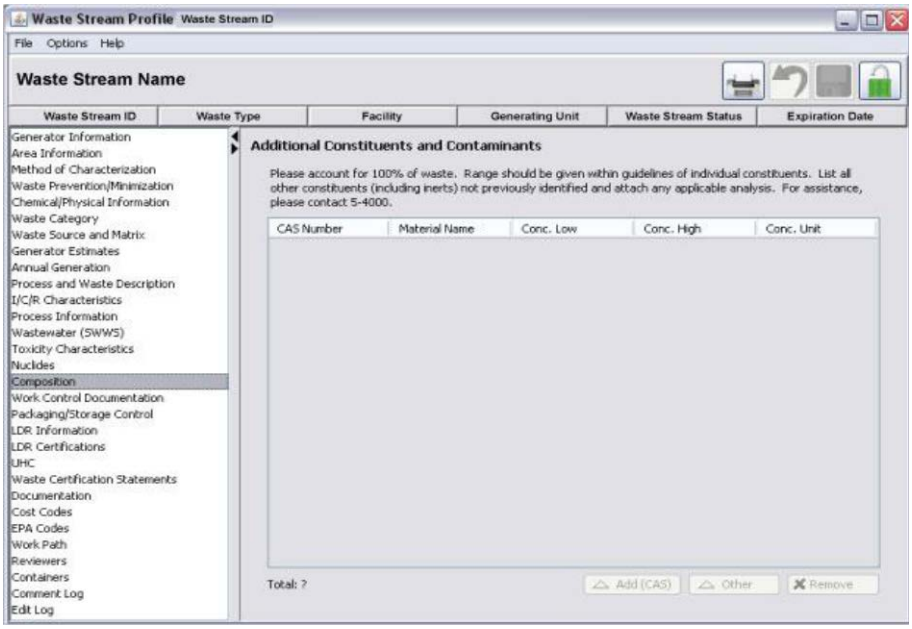


*Figure 10.* Composition. From Waste Compliance and Tracking System User's Manual by LANL, 2012, p.71. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 17.0 Composition

The composition panel accounts for all additional constituents and contaminants that have not been identified under the toxicity characteristics panel. The minimum and maximum range of these additional contaminates are indicated by weight % or PPM, respectively.

NOTE: The generator should not exceed a maximum range of 130%.

NOTE: Any waste stream with a maximum range above 130% will be reviewed and activated on a case-by-case basis.

Verify all "additional constituents and contaminants" and those indicated under the TC panel account for at least 100% of the waste stream "including inerts" (LANL, 2012).

- Verify all analytical detects are accounted for under the composition panel.
- If, a constituent has been identified under the TC panel, then, verify the constituent is not identified under the composition panel.

## 18.0 Additional Information

The additional information panel is a free form text used to further define or document additional information in support of the WSP characterization (e.g. chemical, physical, biological or radiological characteristics).

- Verify information in the additional information panel supports the WSP characterization (e.g. ER Waste Characterization Strategy Form EP #, waste stream #s, reference regarding a due-diligence or a no-longer contained letter, or a list of constituents used as F-listed solvents etc.).

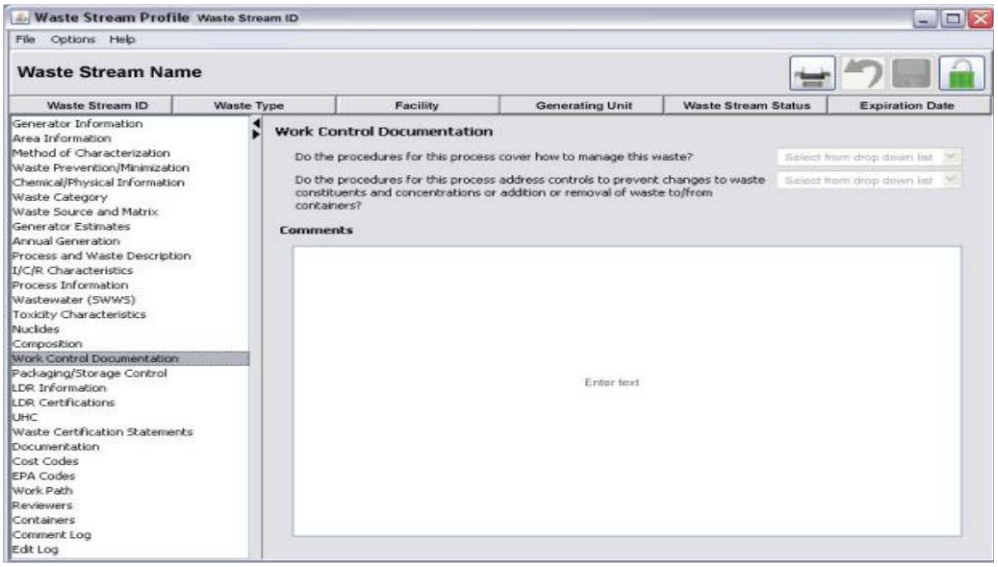


*Figure 11.* Waste Control Documentation. From Waste Compliance and Tracking System User's Manual by LANL, 2012, p.73. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 19.0 Waste Control Documentation

In accordance with P930-2 "*Waste Certification Program*," waste generators must ensure that their procedures address how waste is managed and controlled" (New Mexico, 2010).

- If, there is a “No” response to either question, verify whether or not the “No” response is in error.
- If, a “No” response is selected, then, verify a comment is indicated within the comment box.

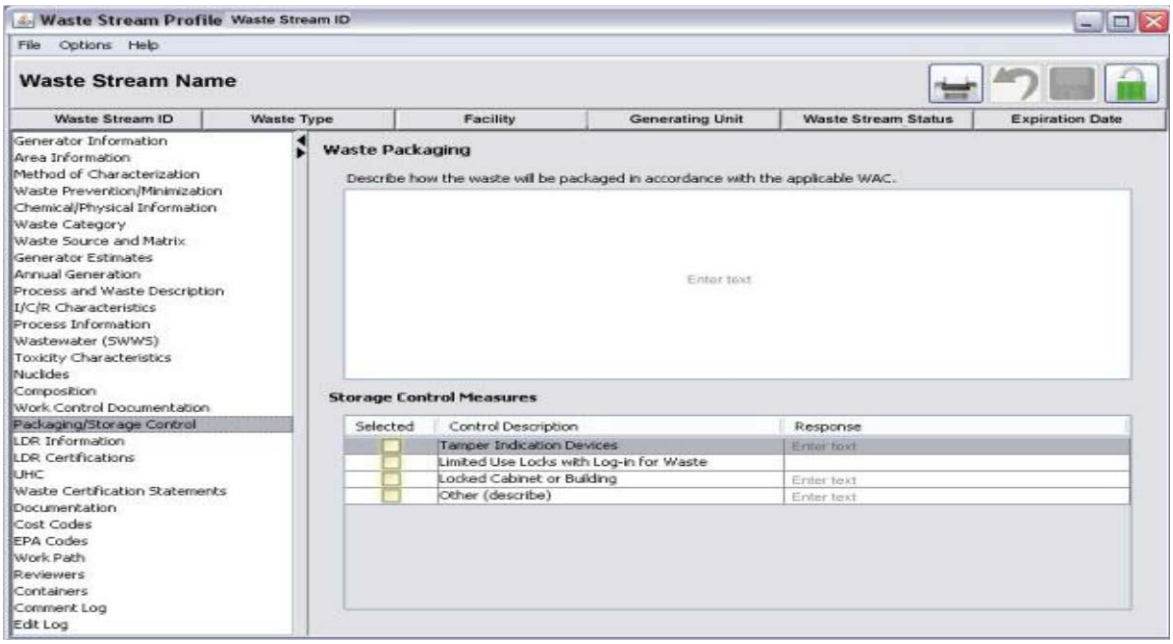


*Figure 12.* Packaging/Storage Control. From Waste Compliance and Tracking System User’s Manual by LANL, 2012, p.73. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 20.0 Packaging/Storage Control

This panel indicates “how the waste stream will be packaged in accordance with the applicable WAC” and “the controls that will be implemented to prevent contents from being added to the waste container.”

- Verify the waste packaging or storage control measures panel describes how the waste is or will be packaged.
- Verify sealed drum containers are not destined to the LA County Eco Transfer Station.
- Verify there is no missing or blank information in this panel. If required contact the waste management coordinator to populate the panel as necessary.

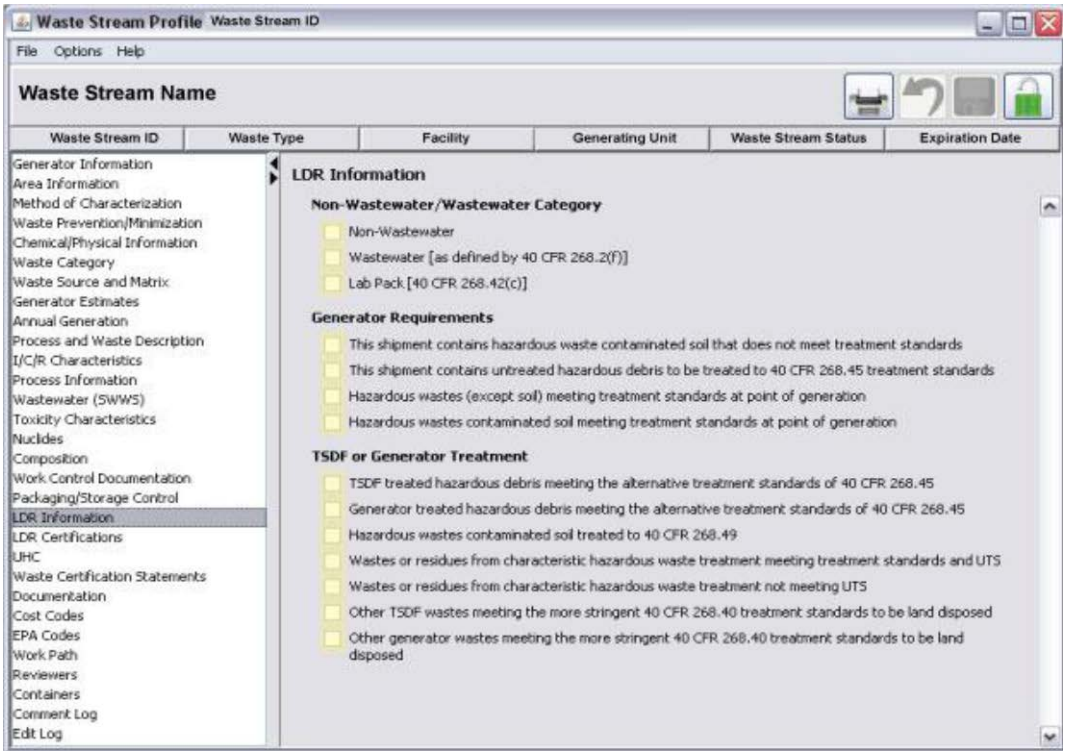


***Figure 13.*** LDR Information. From Waste Compliance and Tracking System User's Manual by LANL, 2012, p.80. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 21.0 LDR Information/LDR Certifications/LDR UHCs

LDRs apply to all RCRA hazardous waste. Under, 40 CFR 268.40, the criteria of LDRs are defined as concentration based limits of wastewaters and nonwastewaters and by the best available technology also known as BDAT. The applicability of Underlying Hazardous Constituents is determined in 40 CFR 268.40 *Treatment Standards for Hazardous Waste*. That is, if the wastewaters or nonwastewaters concentration column indicates "and meet 268.48 standards" then UHCs apply. Underlying hazardous constituents are identified under 40 CFR 268.48 *Universal Treatment Standard.*

NOTE: Refer to section 3.2.1.20, *LDR Information* of the WCATS User's Guide for examples detailing information regarding the applicability of LDRs.

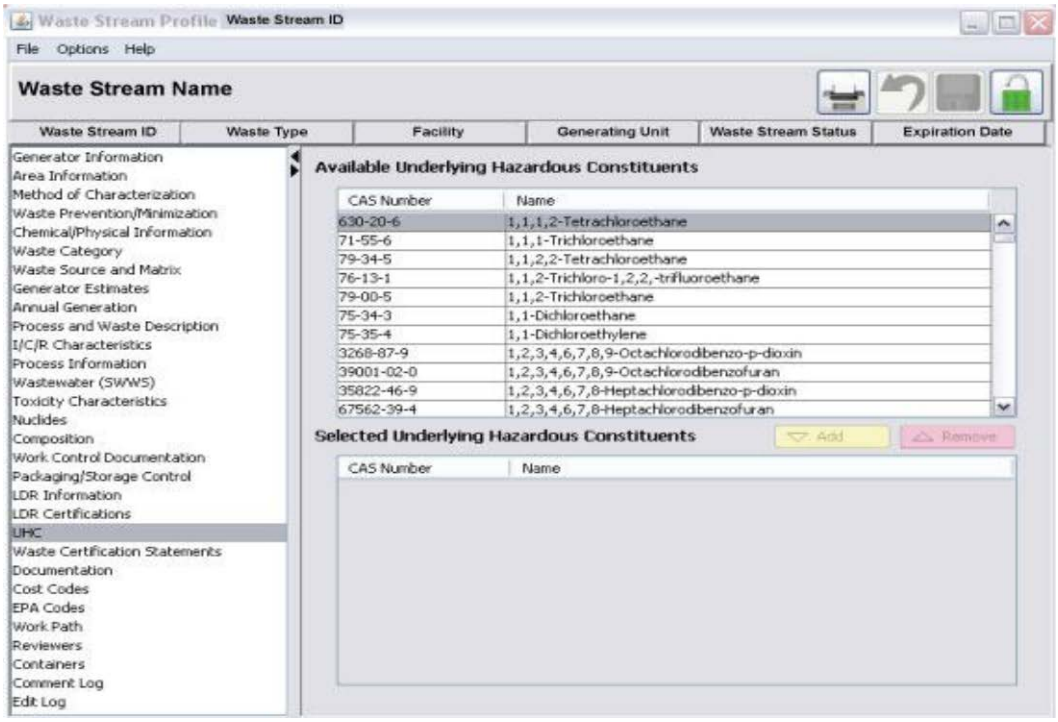


*Figure 14.* UHC. From Waste Compliance and Tracking System User's Manual by LANL, 2012, p.86. Copyright 2012 by Chris Echohawk. Reprinted with permission.

- If, a constituent under 40 CFR 268.40 indicates a BDAT code, then, the identification of UHCs is not required.
- If, the waste stream is a RCRA characteristic hazardous waste (i.e. characteristic) verify the LDR information, LDR certification(s), and underlying hazardous constituents, as applicable, are included with the WSP characterization.
- If, the waste stream is a RCRA listed hazardous waste, then, verify a LDR and LDR certification, as applicable, are included with the WSP characterization.

NOTE: In accordance with 40 CFR 268.49, the UHCs regulatory limits for hazardous waste soil (i.e. characteristic and/or listed) are determined by multiplying the universal treatment standard of each non-wastewater constituent by 10 or by comparing each constituent concentration directly to the treatment standards for hazardous waste as indicated under 40 CFR 268.40.

- If, the waste stream is hazardous waste contaminated soil (i.e. characteristic and/or listed), then, verify all applicable UHCs greater than 10X the universal treatment standards are identified on the LDR.
- Verify a LDR, LDR certification(s), and UHCs, as applicable, are included with the WSP characterization.

"NOTE: In order for the treatment facility to determine the best treatment technology for the waste, all potential UHCs need to be identified to comply with 40 CFR 268.45" (LANL, 2012).

- For untreated hazardous debris (i.e. characteristic and/or listed), verify the NWW check box is selected and all potential UHCs are identified in accordance with the above "NOTE."
- If, the waste stream is a treated characteristic waste, then, verify a LDR and LDR certification, as applicable, are included in the WSP characterization.
- If, the waste steam is not a RCRA hazardous waste, then, LDRs does not apply.

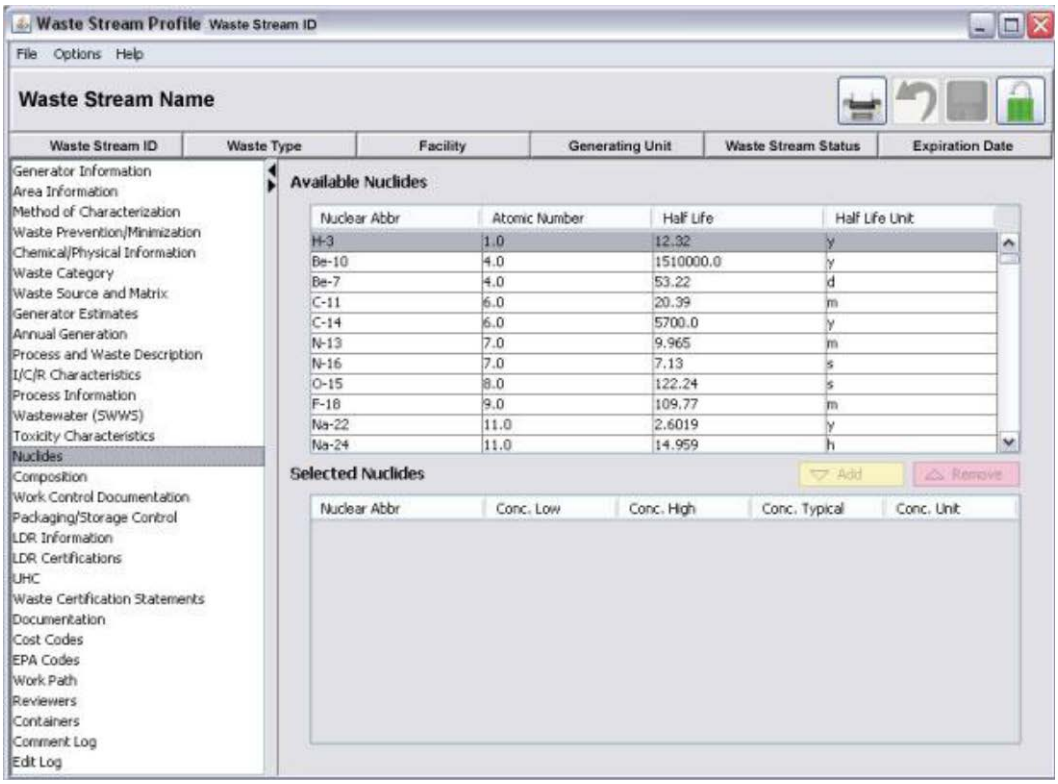


*Figure 15.* Nuclides. From Waste Compliance and Tracking System User's Manual by LANL, 2012, p. 99. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 22.0 Nuclides

- If, a low-level waste is destined to the National Nevada Security Site (formerly NTS), then, the identification of nuclides are required under the nuclides panel prior to providing a RCRA review electronic signature.
- If a waste stream is a low-level waste (LLW) not destined to the NNSS, then, the identification of nuclides are not required and may be provided on the Container form or Waste Disposal Request form.
- If, a waste stream is a TRU or MTRU waste, then, the identification of nuclides is not required under the nuclides panel prior to providing a WSP electronic signature.

## 23.0 Mixed Low Level Waste

The MLLW acceptance review is performed by the MLLW reviewer to ensure that the waste meets the prospective off-site TSDF's WAC.

- Verify and/or ensure the waste type under the general information panel indicates *Mixed Low Level Waste.*
- Verify the MLLW review signature is populated under the signatures panel.
- Verify the low-level waste check box is selected under the chemical/physical information panel.
- Verify the stream is a RCRA characteristic and/or listed waste.
- If, the MLLW has no disposal path, then, refer to section #24.0, *Waste Certification Statements*.

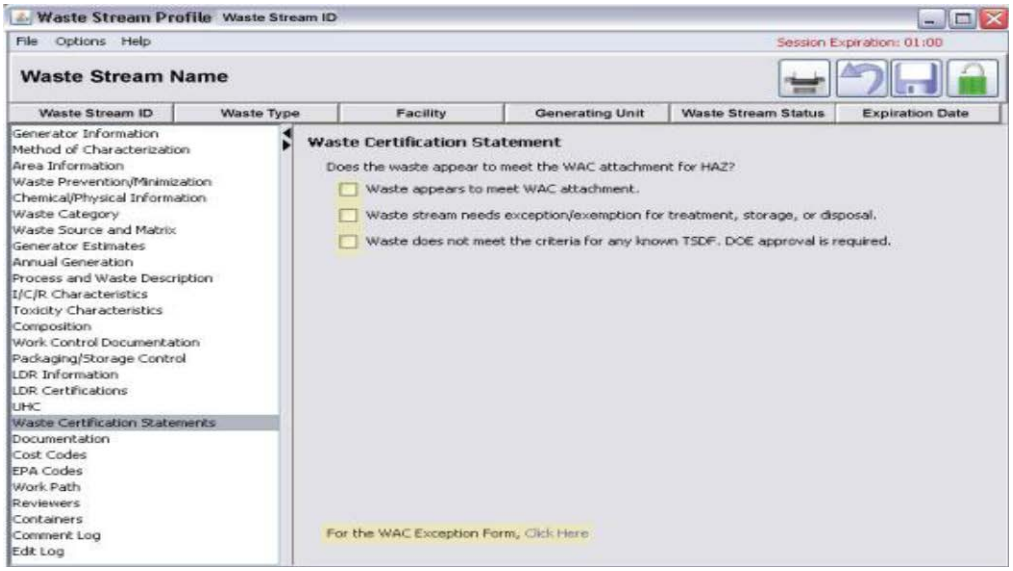


***Figure 16.*** Waste Certification Statements. From Waste Compliance and Tracking System User's Manual by LANL, 2012, p.74. Copyright 2012 by Chris Echohawk. Reprinted with permission.

**24.0 Waste Certification Statements**

If the waste stream characterization meets the applicable LANL WAC, verify the selection is "Waste appears to meet WAC attachment" (LANL, 2012).

NOTE: A waste stream destined to a LANL controlled TSDF that contains a criterion outside of the LANL WAC will require a WEF.

- If the waste stream characterization exceeds or does not meet all specified criteria of the LANL WAC, verify the selection is "Waste steam needs exception/exemption for treatment, storage or disposal." A signed WEF is required.
- If the waste stream characterization does not meet the LANL WAC, verify the selection is “Waste does not meet the criteria for any known TSDF, DOE approval is required."

NOTE: The Principal Associate Directorate for Weapons Programs (PADWP) works with the generator in preparing a no-disposal path waste stream package for DOE Los Alamos Site Office (LASO) approval.

- As a no-disposal path WSP, refer to the below instructions:

[1] If, there is no disposal path for a waste stream, then, reset the WSP under the signature panel; refer to section #30, *Resetting/Revoking a WSP in WCATS*.

[2] Add a comment indicating the reason why the stream has a no disposal path and refer the generator to follow ENV-RCRA TOOL 211 “WASTE WITH NO DISPOSAL PATH/PROBLEMATIC WASTE.”

[3] Ensure the Los Alamos Site Office approval request letter is uploaded in the documentation panel prior to providing the RCRA electronic signature.

## 25.0 Cost Codes

- Cost codes are a function performed by the generator/WMC.
- Cost codes may be amended by the WMC without electronically resetting or revoking the signature panel.

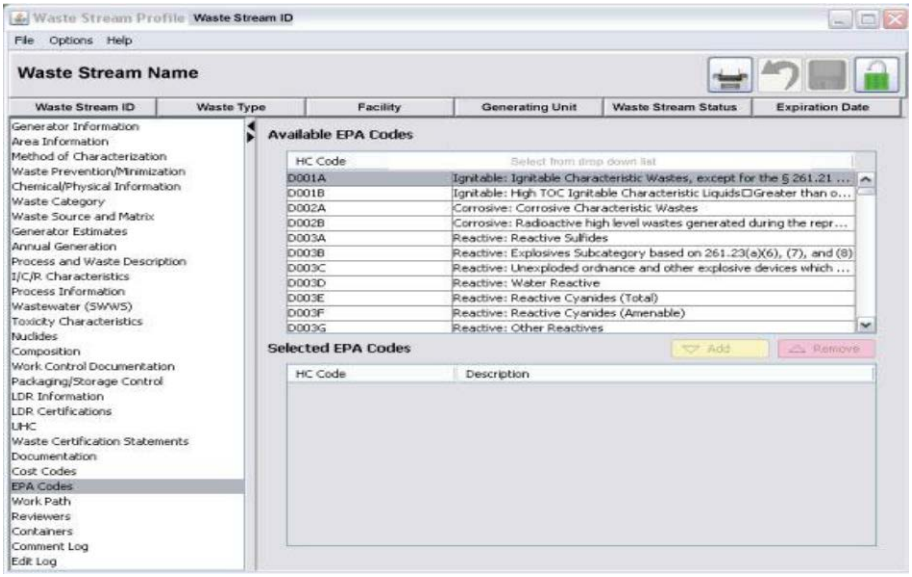


*Figure 17.* EPA Codes. From Waste Compliance and Tracking System User's Manual by LANL, 2012, p.93. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 26.0 Review EPA Codes

- If a stream is a RCRA characteristic waste (e.g. D-code), then, ensure all applicable EPA hazard codes to include the correct subcategories are identified under the Review-EPA Codes panel.
- If a stream is a listed waste (e.g. F, K, P, or U), then, ensure all applicable RCRA hazard codes are identified under the Review-EPA Codes panel.

- If the waste stream is a RCRA hazardous waste carrying EPA waste codes D001, D002 and/or D003, then, ensure additional information (e.g. two compounds) describing the waste are provided under the Review-EPA Codes panel.
- If the waste stream is a non-solid waste, solid waste, New Mexico Special Waste, TSCA, low-level waste or transuranic waste, then, EPA waste codes are not applicable.

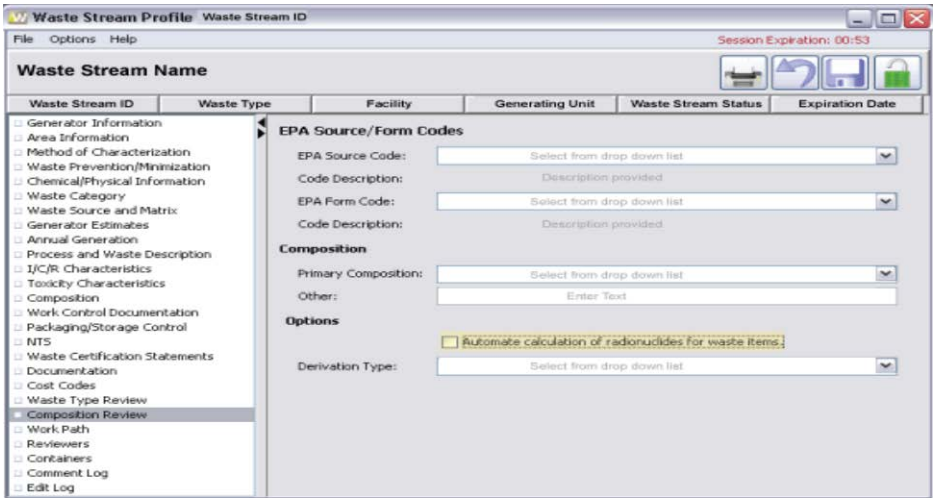


*Figure 18.* Composition Review. From Waste Compliance and Tracking System User's Manual by LANL, 2012, p.95. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 27.0 Composition Review

The disposition of LANL's RCRA hazardous waste must be identified in the Biennial Report and submitted to the New Mexico Environment Department. Information identified under the composition review panel is included in the Biennial Report. For a RCRA hazardous waste, determine and select the appropriate EPA Source Code and EPA Form Code.

NOTE: An EPA Source Code describes the process or activity which generated the waste.

- If the waste stream is from on-going production or service processes then select a code G01-G09.

- If the waste stream is from an intermittent event or process then select a source code G11, G12, G13, G14, G15, G16, G17, or G19.
- If the waste stream is from a pollution control or waste management processes then select a source code G21 - G27.
- If the waste stream is from a spill or accidental release then select a source code G31, G32, G33, or G39.
- If the waste stream is from remediation of past contamination then select a source code G41, G42, G43, G44, G45, or G49.
- If a waste stream is not physically generated on-site then refer to the source codes G61 through G75.

NOTE: The EPA Form Code describes the chemical and physical characteristics of the waste.

- If the waste stream is mixed media, debris or devices then select a form code W001, W002, W004, W005, W301, W309, W310, W320, W512 or W801.
- If the waste stream primarily inorganic liquids then select a form code W101, W103, W105, W107, W110, W110, W113, W117 or W119.
- If the waste stream is primarily organic liquids then select a form code W200, W202, W203, W204, W205, W206, W209, W210, W211 or W219.
- If the waste stream is primarily inorganic solids then select a form code W303, W304, W307, W312, W316 or W319.
- If the waste stream is primarily organic solids then select a form code W401, W403, W405, W406 or W409.
- If the waste stream is primarily inorganic sludges then select a form code W501, W503, W504, W505, W506 or W519.
- If the waste stream is primarily organic sludges then select a form code W603, W604, W606 or W609.

- If the waste stream is a RCRA exempt waste (not a solid waste) or non-RCRA hazardous waste (solid waste) select "n/a" from the drop down list for both the source/form code listing.

NOTE: If the generator selects “automate calculation for waste type,” WCATS will automatically populate the radiological data on the container or waste disposal request form.

- If the “automate calculation for waste type” is selected, then, verify nuclides are identified under the nuclides panel; otherwise, the RCRA review signature is not allowed.
- If the stream is not a low-level waste or the generator does not elect to automatically populate the Container or WDR form with the nuclides data, then, the box must be left blank prior to providing the WSP electronic signature.

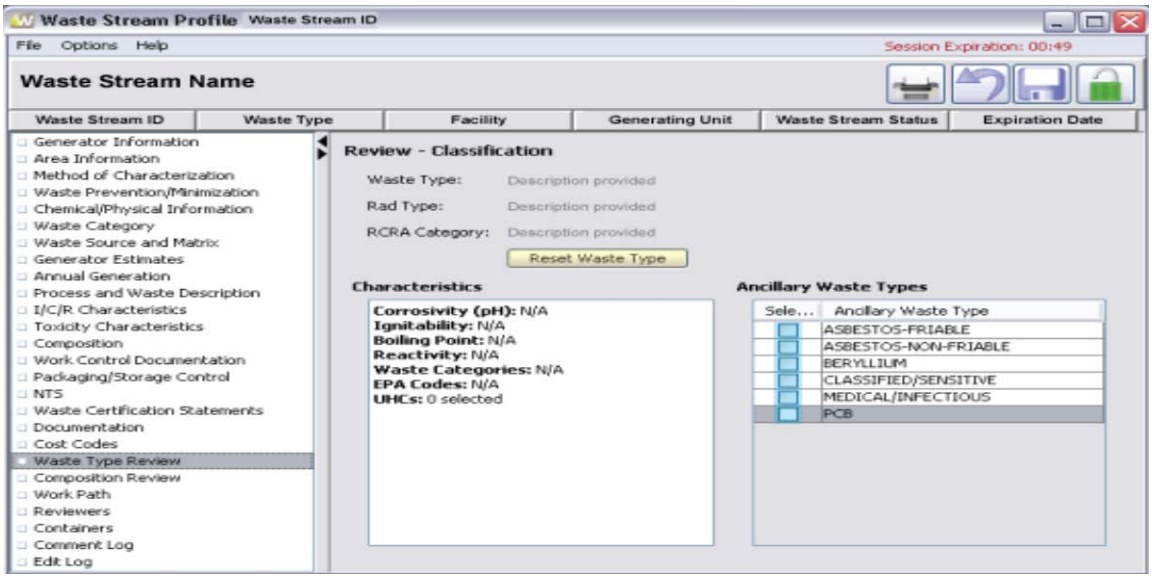


*Figure 19.* Review Classification. From Waste Compliance and Tracking System User’s Manual by LANL, 2012, p.94. Copyright 2012 by Chris Echohawk. Reprinted with permission.

## 28.0 Review Classification

The review classification panel populates the waste type, rad type, and RCRA category to include selected, I/C/R, boiling point, EPA waste codes and all applicable UHCs. This panel also allows the Waste Certifying Official and/or RCRA reviewer to select various ancillary waste types such as New Mexico Special Waste, beryllium, or PCBs.

- If, the waste type is a hazardous waste, LLW, MLLW, TRU, or MTRU waste, then, ensure the applicable ancillary waste type is selected (e.g. beryllium, friable asbestos, PCB etc.).

- If the ancillary waste type selected includes beryllium, friable asbestos and/or PCBs, then, refer to section #11.0, Waste Category for additional information.
- If, the waste type is a New Mexico Special Waste, then, ensure the applicable ancillary waste type is selected (e.g. treated formerly characteristic hazardous waste, packing house and killing plant offal, regulated asbestos, ash, infectious waste, sludge, industrial solid waste, spill of a chemical substance or commercial product, or petroleum contaminated soils).

## 29.0 Signatures

In order for a WSP to become “Active” all electronic signatures must be obtained and performed in sequence. For example, an electronic signature is indicated with a green color dot. A yellow color dot indicates the WSP requires a signature or has been reset for additional information. A red color coded dot indicates the WSP has been cancelled or revoked (i.e. Additional information or amendments are required). Electronic signatures are performed as follows:

[1] Generator signature is required

[2] Waste Certifying Official (i.e. WMC) signature is required.

[3] RCRA reviewer signature is required (i.e. WSP reviewer).

(A) Highlight the RCRA review signature line

(B) Click the "Sign" button

(C) Then click the "Approve" button

NOTE: Other required signatures are determined by selections made from the *waste type*, site area or *waste category* and may be performed simultaneously. The following are a list of these required signatures:

- ENV-CP Review (e.g. PCB reviewer, Municipal Refuse, and ER reviewer)
- TSD Review (e.g. SWWS, RLWTF, RLWTP, and HE Waste Review for TA-16)
- NTS (i.e. National Nevada Security Site)
- MLLW (Mixed Low Level Waste)

## 30.0 Resetting/Revoking a WSP in WCATS

Once the WSP reviewer commits a signature to WCATS the database automatically locks the data to prevent any changes. At this point, only the authorized reviewer may subsequently reset or revoke a WSP to amend any changes and/or corrections.

NOTE: The reset/revoke feature will require re-signatures, refer to section #29, Signatures.

NOTE: Once the WSP ID# has been used for a waste shipment a reset/revoke is not allowed in WCATS. If an active WSP is identified on a Container/WDR and has not been used for shipment purposes, then any amendments to the WSP will require the generator to contact wastehelp@lanl.gov for assistance.

### 30.1 Reset all signatures

All steps below are performed by the WSP reviewer.

[1] Highlight the RCRA review signature line

[2] Click on the reset button, a blank box will populate, then

[3] Provide a comment indicating the reason for the reset.

[4] Acknowledge by clicking the ok button

[5] A WCATs notification with the comment will be emailed to the generator and WMC.

### 30.2 Revoke the RCRA review signature

All steps below are performed by the WSP reviewer.

[1] Highlight the RCRA review signature line

[2] Click on the sign button, a blank box will populate, then

[3] Provide a comment indicating the reason for the revoke.

[4] Acknowledge by clicking the ok button

[5] A WCATs notification with the comment will be emailed to the generator and WMC.

## 31.0 Containers

The container “application keeps a log of all containers assigned to a waste stream” (e.g. container ID, label ID, origin date, container type and status of shipment). This log information is uploaded by the WMC for shipment purposes.

- There is no requirement for the WSP reviewer to perform.

## 32.0 Comment Log

“The application allows users to document comments on a waste stream for further viewing” (LANL, 2012).

## 33.0 Edit Log

"The application keeps a log of all edits made to any profile created" (LANL, 2012).

## 34.0. REFERENCES

Los Alamos National Laboratory (LANL). (2013). Acceptable Knowledge Package Guidance for Low-Level Waste. WM-TOOL-313.1, P1-P3.

Los Alamos National Laboratory (LANL). (2009). ENV-RCRA-TOOL-101.0: Waste Management Glossary.

Los Alamos National Laboratory (LANL). (2012). MAN-5004, R2: Waste Compliance and Tracking System (WCATS) User's Manual.

Los Alamos National Laboratory (LANL). (2014). P930-1: LANL Waste Acceptance Criteria

Los Alamos National Laboratory (LANL). (2013). WM-TOOL-111.3: Waste Characterization.

New Mexico Environment Department (NMED) and all approved modifications. (2010) *Los Alamos National Laboratory Hazardous Waste Facility Permit.* New Mexico Environment Department, Santa Fe, New Mexico. Issued November 30, 2010.

Solid Waste Management General Requirements, 20 NMAC 9.2 (2007).

Special Waste Requirements, 20 NMAC 9.8 (2007).

# APPENDIX 1

## LANL REVIEWERS

Upon signature approval of the generator, Waste Certifying Official, and the RCRA reviewer, WCATS electronically notifies all applicable LANL SMEs of needed WSP characterization reviews and waste acceptances. Below are the relevant SME reviewers:

**Sanitary Wastewater System Waste Acceptance (SWWS)**

The TA-46 SWWS review is used for waste acceptance according to the SWWS WAC. Authorized personnel (the SWWS Committee) from TA-46 will perform the TA-46 waste acceptance/denial of a WSP.

**TA-50 Radioactive Liquid Waste Treatment Facility (RLWTF)**

The TA-50 RLWTF review is used for waste acceptance according to the RLWTF (TA-50) WAC. Authorized personnel from RLWTF will perform the TA-50 waste acceptance/denial of a WSP.

**TA-53 Radioactive Liquid Waste Treatment Plant (RLWTP)**

The TA-53 RLWTP review is used for waste acceptance according to the RLWTP (TA-53) WAC. Authorized personnel from RLWTF (TA-50) will perform the waste acceptance/denial of a WSP on behalf of the TA-53 RLWTP.

**DX TA-36, 39, 14**

The DX review is used for waste acceptance according to the TA-36, 39, 14 burn cage WAC. Authorized personnel from TA-36, 39, 14 will perform the waste acceptance/denial of a WSP.

**TA-16 Waste Acceptance**

The TA-16 review is used for waste acceptance according to the TA-16 Burn Grounds Facility WAC or HE Wastewater Treatment Facility WAC. Authorized personnel from TA-16 will perform the TA-16 waste acceptance/denial of a WSP.

**National Nevada Security Site (NNSS)**

The NNSS review is used for waste acceptance according to the NNSS WAC. Authorized personnel from the LANL NNSS team will perform the waste acceptance/denial of a WSP.

**Environmental Restoration (ER)**

WCATS will notify an ER representative to verify and determine authorization of a waste stream disposal under an existing Waste Characterization Strategy Form. ENV-RCRA authorized personnel will perform the ER review for criteria acceptance/denial of a WSP.

**Mixed Low-Level Waste Review (MLLW)**

The MLLW review is used for waste acceptance according to the MLLW WAC. The MLLW SME will perform the review/acceptance of a WSP.

**Municipal Refuse Waste Acceptance**

The municipal refuse review is used for the waste acceptance of a commercial solid waste destined to a municipal landfill via the Los Alamos County ECO- Station. ENV-RCRA authorized personnel will perform the municipal refuse review acceptance/denial of a WSP.

**PCB Review**

A PCB review is used to classify the waste information provided by the generator according to 40 CFR, Part 761. Authorized personnel from ENV-RCRA will perform the PCB review acceptance/denial of a WSP.

# APPENDIX 2
# COPYRIGHT PERMISSION

**Elicio, Andy U**

**From:** Elicio, Andy U
**Sent:** Friday, December 12, 2014 1:51 PM
**To:** Echohawk, Chris
**Cc:** Gammon, Ellen (eboyea@lanl.gov); Garcia, Ronnie A
**Subject:** Copyright Permission
**Attachments:** Guidance for Reviewing and Approving a Waste Stream Profile in the Waste Compliance and Tracking System _92.docx

Dear Chris Echohawk,

My name is Andy U. Elicio. I am a Waste Stream Profile reviewer with Waste Management Services in the Associate Directorate of Environmental Safety and Health (ADESH). At the present, I am pursuing an M.S. in Environmental and Resource Management from Arizona State University. One of the requirements for my master's degree is to complete and defend an applied project. The applied project I have chosen is titled, "Guidance for Reviewing and Approving a Waste Stream Profile in the Waste Compliance and Tracking System." I have attached a draft copy of my applied project for your convenience.

The guidance I have presented directly correlates with certain figures indicated within our Waste Compliance and Tracking System User's Manual, MAN-5004, R2. I would like to seek and obtain copyrighted permission to use these figures in my applied project. The specific figures for which I am seeking copyrighted permission are:

| | |
|---|---|
| Figure 4-1, Create New Waste Stream Profile | Section 4.2 Creating a New Waste Stream Profile (i.e. General Information) |
| Figure 4-3, Site Area Panel | Section 4.2.1.2 Site Area |
| Figure 4-4, Method of Characterization Panel | Section 4.2.1.3 Method of Characterization |
| Figure 4-5, Waste Prevention/Minimization Panel | Section 4.2.1.4 Waste Prevention/Minimization Information |
| Figure 4-6, Chemical/Physical Panel | Section 4.2.1.5 Chemical/Physical Information |
| Figure 4-7, Waste Category Panel | Section 4.2.1.6 Waste Category |
| Figure 4-8, Generator Estimates | Section 4.2.1.7 Generator Estimates |
| Figure 4-9, Process and Waste Description Panel | Section 4.2.1.9 Process and Waste Description |
| Figure 4-10, I/C/R Characteristics Panel | Section 4.2.1.10 I/C/R Characteristics |
| Figure 4-11, Toxicity Characteristics Panel | Section 4.2.1.11 Toxicity Characteristics |
| Figure 4-12, Composition Panel | Section 4.2.1.12 Composition |
| Figure 4-14, Work Control Documentation Panel | Section 4.2.1.13 Work Control Documentation |
| Figure 4-15, Packaging/Storage Control Information | Section 4.2.1.14 Packaging/Storage Control Information |
| Figure 4-16 Waste Certification Statements Panel | Section 4.2.1.15 Waste Certification Statements |
| Figure 4-29 LDR Information Panel | Section 4.2.1.19 LDR Information Panel |
| Figure 4-31 UHC Panel | Section 4.2.1.21 Underlying Hazardous Constituents (UHC) |
| Figure 4-38, EPA Codes Panel | Section 4.2.2.1 EPA Codes |
| Figure 4-40 Waste Type Review Panel | Section 4.2.2.3 Waste Type Review |
| Figure 4-41 Composition Review Panel | Section 4.2.2.4 Composition Review |

1

If you are my point of contact and do possess the authority to grant my request, please sign below and return to me via email (aue@lanl.gov) or interoffice mail (MS J586). Your call...

If I may answer any questions, please feel free to contact me at your convenience.

Sincerely,

Andy

Andy U. Elicio, CHMM
Waste Management Services
Los Alamos National Laboratory
Work Phone: (505) 667-6956
Cell Phone: (505) 227-4880
Email: aue@lanl.gov
Mailstop: J586

Permission granted for the use of the material as described above:

Agreed to: _____ Name & Title: CHRIS ECHOHAWK ADESH-OIC PROGRAM OFFICE DIRECTOR

Company: LANS Date: 1/14/2015



APPENDIX 3

| Waste Stream Profile RCRA Review | |
|---|---|
| WSP # (i.e. WCATS ID #): | |
| Waste Type (e.g. solid waste, NMSW, hazardous waste, LLW, MLLW) | |
| RCRA Category (Non-RCRA, RCRA solid waste, RCRA hazardous waste) | |
| Rad Type (e.g. Non-Radioactive, LLW, Transuranic Waste) | |
| EPA Waste Code(s) | |
| Land Disposal Restrictions/Underlying Hazardous Constituents (LDR/UHCs) | |

*NOTE:*

*If a waste stream is a RCRA characteristic hazardous waste, Land Disposal Restrictions form and determination of Underlying Hazardous Constituents apply.

*If a waste stream is a RCRA characteristic/listed waste, Land Disposal Restrictions form and determination of Underlying Hazardous Constituents apply.

*If a waste stream is debris and a RCRA characteristic and/or listed waste, LDR/UHCs apply.

| | |
|---|---|
| If a waste stream is a RCRA hazardous waste, include the appropriate biennial source and form code. | Source Code:<br><br>Form Code: |
| Ancillary Waste Type (e.g. asbestos, beryllium, PCBs) | |
| Questions or Comments: | |

APPENDIX 4

WASTE TYPE CATEGORY

| Waste Type | Solid Waste | New Mexico Special Waste | Characteristic/ Listed Waste | Radioactive Waste |
|---|---|---|---|---|
| **Solid Waste** | Solid Waste | N/A | N/A | N/A |
| **Sanitary Waste Water System** | Sanitary Waste Water System | X | N/A | N/A |
| **New Mexico Special Waste** | N/A | New Mexico Special Waste | N/A | N/A |
| **TSCA** | TSCA | N/A | N/A | N/A |
| **RCRA Hazardous Waste** | N/A | N/A | RCRA Hazardous Waste | N/A |
| **Low-Level Waste** | N/A | N/A | N/A | Low-Level Waste |
| **Mixed Low-Level Waste** | N/A | N/A | X[1] | Mixed Low-Level Waste |
| **Transuranic Waste** | N/A | N/A | N/A | Transuranic Waste |
| **Mixed Transuranic Waste** | N/A | N/A | X[1] | Mixed Transuranic Waste |
| **Radioactive Liquid Waste Treatment Facility** | N/A | N/A | X[2] | Radioactive Liquid Waste Treatment Facility |
| **Radioactive Liquid Waste Treatment Plant** | N/A | N/A | N/A | Radioactive Liquid Waste Treatment Plant |

[1] A radioactive waste carrying an EPA waste number(s)

[2] An aqueous radioactive waste carrying EPA waste number D002. Refer to section #10.3.2 Radioactive Liquid Waste Treatment Facility

## APPENDIX 5

## POTENTIAL EPA WASTE CODES FOR CHARACTERISTICAND/OR LISTED WASTE

| Constituent | Characteristic | Listed (unused/off spec) | Listed (process) |
|---|---|---|---|
| Toxicity Characteristic Metals | | | |
| Arsenic | D004 | - | - |
| Barium | D005 | - | - |
| Cadmium | D006 | - | - |
| Chromium | D007 | - | - |
| Lead | D001, D008 | - | - |
| Mercury | D009 | U151 | - |
| Selenium | D010 | - | - |
| Silver | D011, D001 | - | - |
| Toxicity Characteristic Organics | | | |
| Benzene | D001, D018 | U019 | F005 |
| Carbon tetrachloride | D019 | U211 | F001 |
| Chloroform | D022 | U044 | - |
| O-cresol | D023 | U052 | F004 |
| M-cresol | D024 | U052 | F004 |
| P-cresol | D025 | U052 | F004 |
| Mixed Cresol | D026 | - | - |
| 1,4-dichlorobenzene | D027 | U072 | - |
| 1,2-dichloroethane | D001, D028 | U077 | - |
| 1,1-dichloroethylene | D001, D029 | U078 | - |
| 2,4-dinitrotoluene | D030 | U105 | - |
| Hexachlorobenzene | D032 | U127 | - |
| Hexachlorobutadiene | D033 | U128 | - |
| Hexachloroethane | D034 | U131 | - |
| Methyl ethyl ketone | D001, D035 | U159 | F005 |
| Nitrobenzene | D036 | U169 | F004 |
| Pentachlorophenol | D037 | F027 | - |
| Pyridine | D001, D038 | U196 | F005 |
| Tetrachloroethylene | D039 | U210 | F001, F002 |
| Trichloroethylene | D040 | U228 | F001, F002 |
| 2,4,5-trichlorophenol | D041 | F027 | - |
| 2,4,6-trichlorophenol | D042 | F027 | - |
| Vinyl chloride | D001, D043 | U043 | - |

| Constituent | Characteristic | Listed (unused/off spec) | Listed (process) |
|---|---|---|---|
| Pesticides/Herbicides | | | |
| 2,4-D | D016 | U240 | - |
| Endrin | D012 | P051 | - |
| Heptachlor | D031 | P059 | - |
| Lindane | D013 | U129 | - |
| Methoxychlor | D014 | U247 | - |
| Toxaphene | D015 | P123 | - |
| 2,4,5-TP (silvex) | D017 | F027 | - |

## APPENDIX 6

Reserved