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A Snapshot in Time – the New TRUplanner Database - 10400

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ABSTRACT

A new database was developed to augment transuranic (TRU) waste inventory information already captured within the Comprehensive Inventory Database (CID). This new database, known as the TRUplanner, includes information focused on site capability for TRU waste certification and availability to ship to either the Waste Isolation Pilot Plant (WIPP) or Idaho National Laboratory for final characterization and certification before coming to WIPP. Waste stream specific data is imported from the CID to the TRUplanner, and additional data is collected and entered as a result of interviews and site visits. This data is continuously updated as sites are visited.

TRU waste information such as facility, equipment, and container information for waste streams, has been captured within the TRUplanner, and supports the Department of Energy, Carlsbad Field Office (CBFO) decision making and strategic planning activities. This information is delivered via three built-in TRUplanner reports that are provided to CBFO management, Acceptable Knowledge (AK) Experts and the TRU Waste Inventory Team.

INTRODUCTION

The TRUplanner database was developed to augment the transuranic (TRU) waste inventory information already captured annually within the Comprehensive Inventory Database (CID) [1]. This new database was designed based upon input from Department of Energy (DOE), Carlsbad Field Office (CBFO) and lessons learned from over 6 years of data collection and analysis to support the Waste Isolation Pilot Plant (WIPP) compliance recertification application [2] and the publication of the Annual TRU Waste Inventory Report [3]. During this period it became apparent that facility and site information was needed in combination with waste stream specific information in order to better understand the capabilities of TRU waste generator sites for characterization, certification, and shipment of their waste.

The TRUplanner database was designed to provide current TRU waste information from DOE sites around the complex on a just-in-time basis. This includes inventory information imported from the CID [1] after annual data collection campaigns conducted at the sites, as well more recent information gathered from site visits and interviews conducted throughout the year. Since TRU waste is packaged, characterized, and shipped daily, the actual TRU waste inventory numbers fluctuate. Other inventory changes result from site management and programmatic decisions that affect how waste will be dispositioned. It is important, therefore, for the CBFO to have a just-in-time snapshot of what waste is currently WIPP-ready (i.e. available to be shipped directly to WIPP) or eligible to be shipped to an interim site, e.g., Idaho National Laboratory (INL), for additional characterization and WIPP-certification.

The TRUplanner database has already been successfully used in collecting information from several small quantity sites, e.g., Sandia National Laboratory, Albuquerque, NM; the Separations Process Research Unit, near Schenectady, NY, NRD near Buffalo, NY; and the Argonne National Laboratory, near Chicago, IL, and is being currently being used to update specific waste streams at Hanford Site near Richland, WA to gain a better understanding of the waste available for shipping there.

TRUplanner DATA ENTRY

The information captured within the TRUplanner is gathered from multiple sources. Waste specific information is imported from the CID [1] following the TRU waste inventory annual collection. Additionally, data is input and updated following site visits based on interviews with site representatives throughout the year. In all cases, the most recent of the information sources is used for reporting from the TRUplanner. Figure 1 provides a hierarchical overview of the data fields available in the TRUplanner.

TRUplanner Database Data Fields

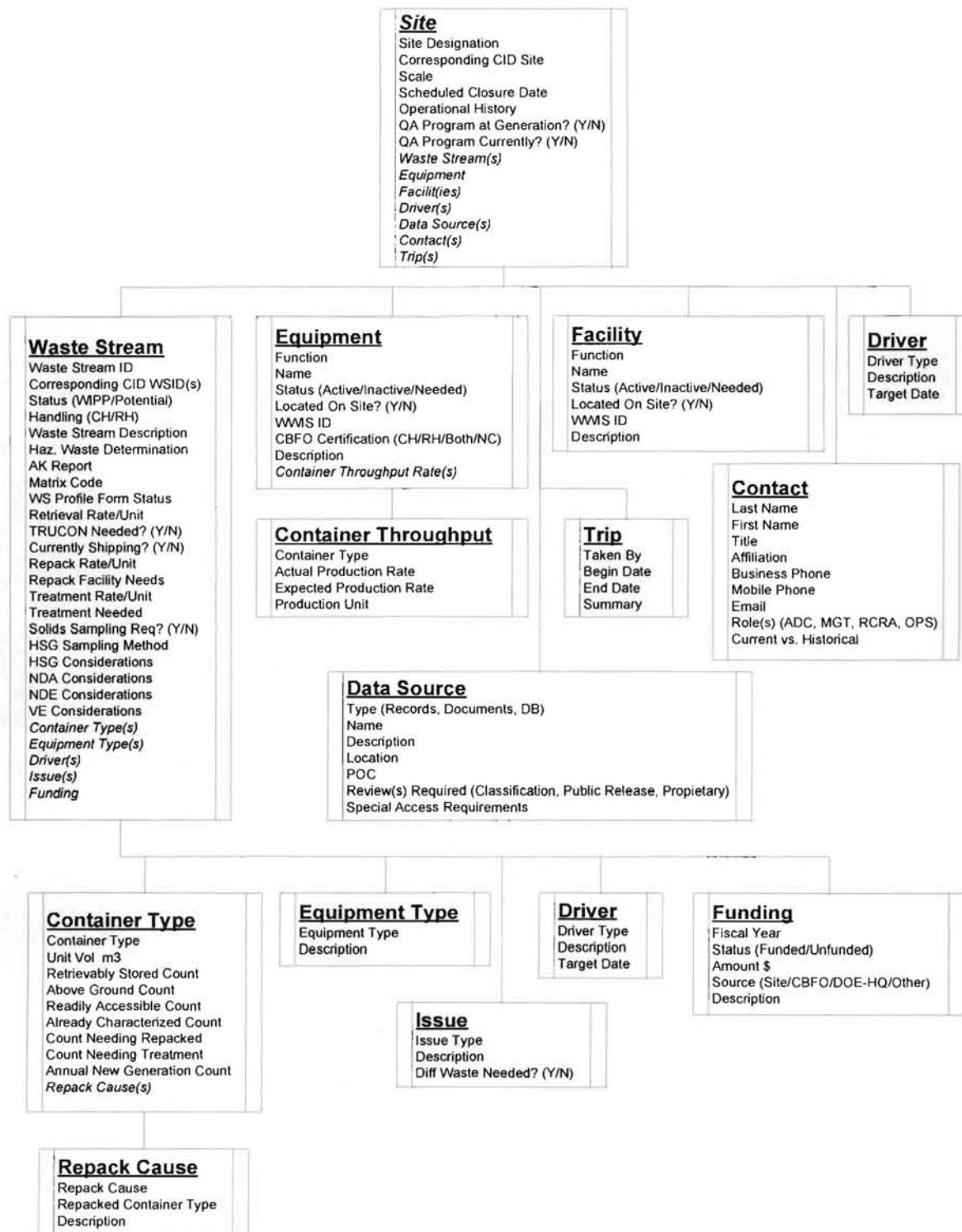


Fig. 1. Data Fields in the TRUplanner

The information imported from the CID [1] is specific to the waste streams themselves. The information helps define how the waste is being stored and how it will be treated in order to be shipped to WIPP. Specifically, this information includes:

- Waste stream identification numbers and descriptions
- Handling (i.e. contact handled or remote handled)
- Shipping status
- Waste matrix codes
- Hazardous waste codes
- Current container types and their respective counts
- Types of treatment and/or repackaging needed
- Ease of accessibility

Information gathered from site representatives during visits and interactions at meetings includes:

- The available characterization equipment at the site, and whether or not the equipment is certified under the Central Characterization Project. This may include: non-destructive assay (NDA), real time radiography (RTR), headspace gas (HSG), glove box(es), and overhead cranes, among others.
- Facilities available on site for repackaging, storage, characterization, and loading.
- Drivers imposed by the DOE, Environmental Protection Agency, site, state, or other regulatory agency that impact the schedule or milestones for waste removal and environmental cleanup.
- A list of contacts and phone numbers of people who are subject matter experts in the waste generation process, who have the knowledge of the defense relationship of the waste stream, or who have the information needed to certify the waste to meet the WIPP waste acceptance criteria. These may include: DOE oversight personnel, the manager(s) of operations, Resource Conservation & Recovery Act experts, and the waste generators, the records custodian, and the quality assurance (QA) manager.
- Data sources for TRU waste information and their respective locations and points-of-contact. Sources may include: data are maintained in databases, documents, or records.
- Availability of data generated under WIPP applicable QA programs

Additionally, waste stream specific information is verified and updated accordingly to represent the current inventory.

All of this information is readily updatable via data entry screens made available within the TRUplanner. An example data entry screen used for manual data input is shown in Figure 2.

The screenshot displays the 'Edit TRU Waste Info' window in the TRUplanner application. The interface includes a top navigation bar with tabs for Waste Streams, Equipment, Facilities, Drivers, Miscellaneous, Contacts, Data Sources, and Trips. On the left, a 'Select Site:' list shows various sites, with 'LANL' selected. The main area is divided into sections for 'Waste Stream' details and 'Container Type' information. The 'Waste Stream' section shows 'Waste Stream ID: LA-LAMIND045' and 'Waste Stream: new delete'. Below this, a list of waste streams is shown, with 'LA-LAMIND045 (CH)' selected. The 'Container Type' section shows 'Container Type(s): new delete' and lists '55-gal Drum Dir Ld w/ Liner (49 @ 0.208 m3 ea.)' and '55-gal POC - 12" w/ Liner (21 @ 0.208 m3 ea.)'. The 'Details' tab is active, showing 'Container Type: 55-gal Drum Dir Ld w/ Liner', 'Unit Vol (m3): 0.208', and 'Retr Strd Ct: 49'. A table below shows 'Above Ground: 9', 'Needing Repacked: 9', 'Readily Accessible: 0', 'Needing Treatment: 0', 'Already Characterized: 0', and 'Annual New Generation: 23'.

Fig. 2. Example TRUplanner Data Entry Screen

TRUplanner REPORTS

Once the information is updated within the TRUplanner, reports are generated which convey strategic information to end users supporting site set up, characterization and certification of TRU waste, Acceptable Knowledge (AK) development, and collection of annual TRU waste inventory data. The reports that are generated from the TRUplanner database include a *Site Summary Report*, an *AK Site Report*, and an *Inventory Report*.

The *Site Summary Report* is intended to provide an overview of the site's readiness to characterize, support operations, and ship TRU waste to WIPP or to INL for further characterization and disposal at WIPP. It includes information on facilities for repackaging, storing and loading waste. This report also provides a list of equipment available for characterizing waste, such as NDA, RTR, and HSG equipment, as well as a summary based on the *AK Site Report*.

The *AK Site Report* is intended to provide contacts and information to AK Experts (AKEs) that can be used to initiate the development of AK Summary Reports. It includes a list of waste streams, waste volumes, container counts, current contacts, availability of database and waste record information, and a trip report written following site visits.

The *Inventory Report* is used by the TRU waste inventory team to aid in the verification of the annual TRU waste inventory data collection. It includes waste stream information such as the identification, description, and current status of the waste stream. The *Inventory Report* provides

detailed packaging information about the waste, whether retrievably stored, above ground, readily accessible, already characterized, needing repackaging or treatment, and annual generation rate per waste stream for sites expecting to generate TRU waste in the future.

FUTURE EXPANSION

Currently, there are plans in place to implement new functionality within the TRUplanner. A need has been identified to capture container specific information from the sites in order to facilitate a better understanding of how waste streams are being managed, and to provide more information on a more granular level that will be useful in planning future shipments. This includes the specific identification of containers needing retrieval, treatment, or repacking, as well as summarized counts of containers already in the characterization process and under the purview of existing WIPP databases such as the WIPP Waste Information System (WWIS) [4]. Finally, the container specific information will be used to provide an independent verification of site data summaries that are provided to the TRU waste inventory team during annual site updates.

SUMMARY

In summary, the TRUplanner database is a user friendly database that provides a just-in-time status of current TRU waste in inventory and generated at DOE sites around the complex. It provides information that can be used by CBFO management for planning, AKEs for collection of AK, as well as the TRU waste inventory team for broad-based inventory and site information.

The TRUplanner database has already been successfully used in collecting and reporting information from several small quantity sites and is currently being used for one large quantity site. Though the TRUplanner information is already proving useful, a need for more granularity has been identified and planned for implementation.

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