

2.0 Implementation Actions

2.1 Safety

Each organization shall establish safety screening and hazards analysis under its own Health and Safety (H&S) Program. Each organization shall identify safety issues and concerns and OSHA reporting through that organization's processes and procedures. No unusual H&S concerns are expected as part of this activity. The tasks associated with this activity are expected to be performed in a normal office environment.

2.2 Responsibilities

Responsibilities for this activity will be shared by LANL and SNL. However, each organization will take a lead role for some of the steps carried out under this procedure. LANL staff will be responsible for technical work of data collection and entry and some calculations resulting in the data report. SNL will provide technical assistance and be responsible for providing a functional QA program for the activity. Both organizations will be responsible for following the SNL QA program for the duration of this task.

SNL staff will team with LANL counterparts on a technical basis as SNL receives the product of this effort and incorporates it into preparation activities for the Compliance Recertification Application (CRA). SNL QA staff will:

- Develop and deploy QA training for LANL personnel for this activity.
- Provide records support for this activity. Records will not be commingled with other SNL records. This facilitates future records management activities including eventual transfer of records to LANL.
- Participate in review and oversight activities as applicable.

The philosophy of the SNL QA program is that quality is an integral part of the work being performed and is built into the system. Technical and administrative workers under the SNL QA program integrate quality into their work. This approach will be applied to this task. The SNL QA staff will continue their role as QA consultants to the SNL QA program. However, SNL QA staff will not be "doing QA" for either the LANL or SNL technical personnel working on this task.

Both LANL and SNL program management will continue to provide appropriate oversight in regards to qualification, training, work quality, and cost/schedule control.

2.3 Quality Assurance Controls

The intent of the QA Program controls for this activity is to provide means that assure that the results of the activity are of known quality and acceptable for their intended use. As examples, these controls provide methods for assuring that data gathered is acceptable for use, that the computer codes used are qualified. Records of the activity are to be generated and maintained, and documents and other results are to be reviewed and approved for further use.

Within the SNL QA Program, controls are established by written procedures or instructions prepared in accordance with NP 5-1, Implementing Procedures, of the SNL WIPP QA Program. It is expected that the application of this QA program across a major organizational interface will require that some procedures will be modified for this activity. Revising procedures to accommodate this activity will be done as needed. The following procedures that are currently in place apply to this work. Notification of revisions to these procedures or any additional procedures needed for this activity will be made available to both organizations and the revised documents will be posted to the SNL project

documents web. It is the responsibility of the individuals working on the activity to assure that they work to the latest revision.

General Infrastructure QA Procedures

NP 1-1	Organization and QA Program
NP 2-1	Qualification and Training
NP 5-1	Implementing Procedures
NP 6-1	Document Review Process
NP 6-2	Document Control Process
NP 16-1	Corrective Actions

Note: each organization shall be responsible for its own corrective action analysis, response and implementation. SNL QA staff will provide QA management and administrative support for corrective actions.

NP 17-1	Records
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Note: the record generator or author shall take the responsibility for records submission to SNL's WIPP Records Center in Carlsbad. Records transfers to LANL will be as described in the Memorandum of Agreement.

NP 18-1	Audits and Surveillances
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Note: sections on surveillance activities only shall apply and be available to both organizations. External organizations may perform audits, surveillances, or inspections under their own QA programs or the SNL QA program.

NP 19-1	Software Requirements
SP 1-1	QA Grading (to be used by SNL only)

Technical Procedures

NP 9-1	Analyses
SP 9-6	Baseline Inventory Report (BIR) Change Report Data Collection and Entry
AP-092	Analysis Plan for Transuranic Waste Inventory Update Report, 2003

2.4 Performing the Implementing Actions

2.4.1 Organization and Structure

LANL shall identify as a minimum the following:

- A data lead to manage and oversee the data software and data in the electronic format and data QC.
- A lead to establish the interactions with the generators and the collection of information.
- A technical lead responsible for data input and calculations such as those for decay.
- A QA lead to provide a point of contact and communication for QA activities including procedure use and QA requirements. This person is the point of contact on QA with external organizations. Other identified individuals may hold one or more lead roles as determined by management.

SNL shall identify at a minimum the following:

- A technical lead responsible for the interfacing with LANL on technical issues. The technical lead is responsible for assuring that the activity meets data needs for performance assessment calculations.
- A QA lead to provide the QA interfaces with LANL and is responsible for QA oversight of SNL activities under this procedure. This assignment requires independence from the work being done.
- A records lead to provide the interface with LANL and SNL on records for this activity.

2.4.2 The following elements are currently included in the activity described in this procedure. Processes, process steps and schedule are more completely described in AP-092, and Appendix A and Appendix B of this procedure. The following summary steps are not necessarily in sequence.

- Participants shall have project generic and QA training for the activity described in this procedure and the Analysis Plan.
- The approved data collection method shall be updated if deficiencies in inventory information are identified. This process shall be done as described in Appendix A.
- Software shall be qualified per requirements of NP 19-1 as applicable.
- Existing information on wastes previously reported shall be compiled for the generators to establish the changes in waste quantity and description.
- A support system shall be established to aid generators and answer questions concerning the completion of the data gathering activities.
- Hard copy, and as necessary electronic media, shall be sent and responses gathered. Information will be checked for legibility and completeness. Comments and questions will be transmitted to the generators for response. Generators will provide requested information **and attest to its accuracy.**
- Gathered data will be evaluated to determine the types of changes to waste profiles at all levels and evaluate the amounts of waste impacted. Any inconsistencies will be investigated and causes established and documented. Process or other changes or improvements shall be made as necessary. This is an ongoing activity.
- Checked, accepted data will be entered into the databases. Database entries will be checked for accuracy and completeness.
- Data calculations and rollup will be performed to produce output consistent with the Rev 3 of the TWBIR. Data calculations and data packages shall meet the requirements of NP 9-1, Analyses.
- Data checks and quality assurance will be performed to assure that data are accurate and that data needs are met.
- Data reports shall be written, reviewed, approved, and distributed in accordance with NP 6-1 Document Review Process.

2.4.3 Data and Information Recording

LANL personnel will use EXCEL® or ACCESS® to accumulate and store information provided by TRU waste sites. This software is to be that used for previous TWBIR data collections to the greatest extent possible. Spreadsheets and databases used to generate previous TWBIR revisions will be used to prepare hard copy and CD-ROM information to be transmitted to generators to aid providing the information pertaining to this activity. The use of this software, any macros, mathematical formulas, etc, shall be subject to requirements spelled out in NP19-1. Code that has not been previously qualified shall be qualified in accordance with NP 19-1. The criteria for validation of the appropriate use of the software will be listed in AP-092. These criteria will be subject to technical review, prior to the start of the use of the software.

2.5 References

- Memo of Agreement, Los Alamos National Laboratories and Sandia National Laboratory August 2, 2002
- Analysis Plan for Transuranic Waste Inventory Update Report, 2003, AP-092 Rev. 2
- Transuranic Waste Baseline Inventory Report, Rev 2. DOE/CAO-95-1121, December 1995
- Transuranic Waste Baseline Inventory Report, Rev 3. DOE/CAO-95-1121, June 1996
- Title 40 CFR 191 Compliance Certification Application. DOE/CAO 1996-2184, October 1996

3.0 Records

Note: Copies of records generated under this activity will not be commingled with other SNL records. Copies of the records will be provided to LANL at the completion of this activity if requested. LANL may request hard copies of some records, without having to receive hard copies of all records. Any record generated by this activity and submitted to the SNL Certified Record Center, will remain in the record center independent of transfer to LANL. LANL may access any of these records via the SNL record center as needed.

Quality records are those records that 1) provide new data or change existing data, and/or 2) provide evidence of evolution of inventory data to arrive at database content. The following QA records, generated through implementation of this procedure, shall be prepared and submitted to the SNL Record Center by the preparer or qualified designee. Note that these records shall not be submitted without appropriate review.

Quality Records for SP 9-6

<u>QA Record</u>	<u>Preparer</u>	<u>Records Submitter</u>
• Data Requests	Inventory Team Lead	Records Custodian
• Site data submittals and subsequent documentation relevant to the submittal. Includes Form 9-6-1, Data Request Form, as applicable.	Data Collection/Entry Personnel	Records Custodian
• Form 9-6-2, Data Completeness Checklist	Data Collection/Entry Personnel	Records Custodian
• Form 9-6-3, Inventory Data Change/Addition Control Form	Data Collection/Entry Personnel	Records Custodian
• Documentation of Data Verification	Data Collection/Entry Personnel	Records Custodian

4.0 Appendices

- Appendix A: Data Collection Methodology for the Transuranic Waste Inventory Update Report, 2003
- Appendix B: Data Entry Methodology for the Transuranic Waste Inventory Update Report, 2003

Appendix A

DATA COLLECTION METHODOLOGY FOR THE TRANSURANIC WASTE INVENTORY UPDATE REPORT, 2003

1.0 Purpose and Scope

This appendix describes the methodology used to collect data from Department of Energy (DOE) transuranic (TRU) waste sites that contribute to waste disposition at the Waste Isolation Pilot Project (WIPP) in Carlsbad, New Mexico. This methodology is used to update baseline data as required for determination of the Transuranic Waste Inventory Update Report, 2003 published in support of the WIPP site compliance re-certification application. This methodology includes steps for acquisition of data not initially supplied by the sites and for resolution of discrepant data.

This methodology applies to all data and information collection activities performed for the purpose of this TWBIR update.

2.0 Definitions and Acronyms

2.1 Definitions

TRU Waste Sites/DOE Sites: Sites that generate and/or store defense TRU waste and are responsible for providing waste inventory information

Preliminary Inventory Information: Information provided by the sites from the first data request. Data and information are received as waste stream database disks, notes from discussions with cognizant waste management personnel, email correspondence, site literature, and data spread sheets. Preliminary inventory information is not in a final, approved, reviewed format.

Transuranic Waste: Waste containing alpha-emitting radionuclides with an atomic number greater than 92 with half-lives greater than 20 years, at concentrations greater than 100 nanocuries per gram of waste.

TRU Waste Baseline Inventory Waste Profile: A form that represents a summary of TRU waste at all DOE TRU waste generation / storage sites that have an identical Final Waste Form.

2.2 Acronyms

TWBID Transuranic Waste Baseline Inventory Database
TWBIR Transuranic Waste Baseline Inventory Report

3.0 Responsibilities

Inventory Team Lead

Person responsible for seeing that the overall methodology of data collection and entry is followed.

Data Collection Personnel

Staff responsible for collecting data using this methodology.

Data Entry Personnel

Staff responsible for entering data into the TWBID following the process described in this procedure. Data entry personnel have write access to the TWBID.

Data Entry Verification Personnel

Staff responsible for verifying that data collected from the site using form SP 9-6-1 and preliminary information as applicable has been entered without any data errors. Data entry verification must be performed by personnel independent of the personnel entering the data.

4.0 Implementing Actions

4.1 Request and Obtain Transuranic Waste Inventory Data Updates

Step	Action
1	Inventory Team Lead: Prepare a letter (see example Attachment 1 or 2) to all TRU Waste Sites identified in AP-092, Analysis Plan for the Transuranic Waste Inventory Update Report, 2003. Attach a copy of the blank waste profile form SP 9-6-1 with instruction for sites to fill out. Attach hard copies of the site-specific waste profiles from TWBIR Revision 2 (as applicable). This letter must include requests for the data requirements found in the Giambalvo letter (2002) see Attachment 3. Ensure that authenticated copies of the form letters sent to the sites (including the distribution list of all sites receiving letters) are placed in appropriate site files.
2	Data Collection Personnel: Visit all large quantity sites as needed, and any small quantity sites that request assistance in data collection.
Note – Preliminary inventory information collected from sites may include: waste stream database disks, notes from discussions with cognizant waste management personnel, email correspondence and site literature. Preliminary inventory information is placed in the appropriate site file. The files are protected from damage or loss as required by NP 17-1, <i>Records</i> , for “in-process” documentation until they are submitted to the records center (see section 4.7).	
3	Data Collection Personnel: Gather preliminary information at sites, as applicable, and place the information in the appropriate site file.
4	Inventory Team Lead: Ensure that the site file contents (information and data) are authenticated as appropriate and that the files are submitted to the record center. If data are in electronic format, print a hard-copy for records. Submit the electronic record as NQ and the hardcopy as QA per NP 17-1.
Note - Upon completion of steps 1-4 above, submit the “in-process” database to the records center. Note the database as preliminary if not yet reviewed by data verification entry personnel. The database must be authenticated by the record source (preferably the Inventory Team Lead).	

4.2 Site Data Submittal Record

Step	Action
	Note – All data received from the first data request shall be authenticated by the DOE site representative, the site sub-contractor, or the LANL Inventory Team Lead to attest to the accuracy and completeness of the data provided. This is accomplished by signing the response or a letter similar to the example provided in Attachment 4.
1	Data Entry and/or Data Collection Personnel: Review data for completeness and fill out the appropriate portions of Form SP 9-6-2, <i>Data Completeness Checklist</i> .
2	Data Entry and/or Data Collection Personnel: If discrepancies are identified, these must be resolved. To do this, contact the site, identify the discrepancy, and request a response. When the response is received, ensure that is authenticated, document the relevant information on Form SP 9-6-3, Inventory Data Change/Addition Control Form and fill out the applicable portions of the Data Completeness Checklist (Form SP 9-6-2) for that site.
3	Inventory Team Lead: Ensure that Form SP 9-6-2, Data Completeness Checklist, when complete, is authenticated and placed in the file for that site.
4	Inventory Team Lead: If additional data are needed or there has been no response to the first data call, ensure that a request for additional information is made (see process steps below).

4.3 Requesting Additional Information

If additional information is needed for completion from the site, contact the site to obtain the needed information and document the contact for submission to records.

Step	Action
1	Data Collection Personnel: Complete a second data request (see Attachment 2 for an example) providing a date for response.
2	Data Collection Personnel: If there was no response to the second data call or there is a lack of information, notify the Inventory Team Lead, and document this in the form of a memo to file (for that site) with a copy to the CBFO Inventory Manager.
3	Inventory Team Lead: Determine the extent of further pursuit of information and document this decision in the form of a memo to file for that site. This allows the Inventory Team Lead to stop soliciting information from a non-responsive site and allows the Inventory Team to stop the data collection process and finalize the file documentation for that site.
4	Data Collection Personnel: If data are received, complete Form SP 9-6-3, Inventory Data Change/Addition Control Form and fill out the applicable portions of the Data Completeness Checklist (Form SP 9-6-2). If discrepancies are identified, resolve them as described in Section 4.2.

4.4 Deleted Waste Streams

Step	Action
1	Data Collection Personnel: If information indicates a TWBIR Revision 2 waste stream has been deleted, line through the TWBIR Waste Profile and write “deleted”. Initial and date all entries.
2	Data Collection Personnel: Place the revised TWBIR Waste Profile and any other information that may cross-reference any new waste streams that resulted from the deletion of the waste stream in the file for that site.

4.5 Data Entry Methodology and Database Submittal Process

Note: Only approved data entry personnel have write access to the database. This is documented on the software baseline inventory list under approved users for the TWBID. Refer to Appendix B of this procedure for the data entry process.

4.6 Final Data Confirmation

Step	Action
1	Inventory Team Lead: Confirm that TWBID is fully populated and ready for final authentication by sites.
2	Data Entry Personnel: Send electronic or hard copies of populated TWBID to sites for verification. Attach a memo with instructions for review and authentication with the TWBID.
3	Data Entry Personnel: Collect response from sites and place in appropriate site file.
4	Data Entry Personnel: Bring any issues to the attention of the Inventory Team Lead for resolution following discrepancy resolution process described above.
5	Data Entry Personnel: Make any final changes, as approved by Inventory Team Lead, to the TWBID.

4.7 Files and Database Submittal Process

Step	Action
1	Inventory Team Lead: Confirm that site files are complete.
2	Inventory Team Lead: Ensure that the database and the site files are submitted to the records center in accordance with NP 17-1, <i>Records</i> .

5.0 Attachments

Attachment 1- Guidance for First Data Collection Request Cover Letter (Example)

Form SP 9-6-1 - Data Request Form

Form SP 9-6-2 - Data Completeness Checklist

Attachment 2 - Example Second Data Request

Attachment 3 - Criteria for Data Call

Attachment 4- Example Data Response Letter

Form SP 9-6-3 Inventory Data Change/Addition Control Form

6.0 Training

All personnel responsible in data and information collection activities performed for the purpose of updating the TWBIR shall read and understand this document.

Attachment 1- Guidance for First Data Collection Request Cover Letter (Example)

Date:

To: Distribution

Reply to: Dr. Clayton Gist, TRU Waste Inventory Manager, Carlsbad Field Office, Carlsbad,
New Mexico

Subject: Update to the Transuranic Waste Baseline Inventory Report

In accordance with the WIPP Land Withdrawal Act, the U.S. Environmental Protection Agency (EPA) must recertify that the WIPP Site is in compliance with the final disposal regulations every five years. It is time for WIPP's first recertification, and we need your help in gathering the inventory information for this recertification effort.

The EPA has informed us that they are interested in any changes (deltas) to your inventory data for the inventory information that goes into the performance calculations for this recertification. Enclosed are copies of your waste stream information that was used in the Transuranic Waste Baseline Inventory Report, Revision 3, June 1996. Only the changes in the waste stream information including volumes (stored and projected plus types of containers), final waste forms, radionuclide concentrations, waste material parameters, and the reasons for the changes are required. For the information that was requested outside the original questionnaire (e.g., organic ligands, nitrates, sulfates, and phosphates), changes will be discussed on a site-by-site basis. The number and size of containers that have been shipped to WIPP will also be needed.

Arrangements are being made for one- or two-person teams to go to the six large sites in September to assist in identifying and making the changes in inventory data. Arrangements will be made if any of the small quantity sites would like assistance in making their changes.

If you have questions, please contact Sheila Lott, Los Alamos National Laboratory-Carlsbad Operations, at 505-628-1372, cell phone 505-699-1534, or email at slott@lanl.gov.

Thank you for your cooperation.
Sincerely,

SIGNATURE ON FILE
Dr. Clayton Gist
RH-TRU Program Manager
Carlsbad Field Office



Data Request Form SP 9-6-1

TRU Waste BIR Waste Profile Form, Page 1 of 2

DL AO-95-1121

TWBIR ID:

TRU WASTE BASELINE INVENTORY WASTE PROFILE

HQ ID:	Handling:	NMVP #:	Stream Name:			Inventory Date:
Local ID:	Type:	Generator Site:	Final Waste Form:	Waste Matrix Code:	TRUCON Code:	

AS-GENERATED EPA CODES	WASTE MATERIAL PARAMETERS (kg/m3)	FINAL WASTE FORM DESCRIPTORS	SITE IDCS	FINAL FORM RADIONUCLIDES
	Avg Min Max			Isotope Activity (Ci/m3)
	Iron-base Metal/Alloys: 0.0 0.0 0.0	Defense: <input style="width: 100%;" type="text"/>		
	Aluminum-base Metal/Alloys: 0.0 0.0 0.0	Residues: <input style="width: 100%;" type="text"/>		
	Other Metals: 0.0 0.0 0.0	Asbestos: <input style="width: 100%;" type="text"/>		
	Other Inorganic Material: 0.0 0.0 0.0	PCBs: <input style="width: 100%;" type="text"/>		
	Vitrified: 0.0 0.0 0.0	Source: <input style="width: 100%;" type="text"/>		
	Cellulosics: 0.0 0.0 0.0			
	Rubber: 0.0 0.0 0.0			
	Plastics: 0.0 0.0 0.0			
	Solidified Inorganic Material: 0.0 0.0 0.0			
	Solidified Organic Material: 0.0 0.0 0.0			
	Cement (solidified): 0.0 0.0 0.0			
	Soils: 0.0 0.0 0.0			
	Packaging Material Steel: 0.0			
	Packaging Material Plastic: 0.0			

Container	As-Generated Waste Form Volumes					Final Waste Form Volumes							
	Stored	85-97	98-02	03-12	13-22	Totals	Container	Stored	95-97	98-02	03-12	13-22	Totals

As-Generated Form: Stored: Protected: Total: Final Waste Form: Stored: Protected: Total:

WASTE STREAM DESCRIPTION	
WASTE STREAM SOURCE DESCRIPTION	
CURRENT CONTAINER COMMENTS	

Figure 1-3. Blank Waste Stream Profile Form

December 1995

Data Request Form SP 9-6-1
TRU Waste BIR Waste Profile Form, Page 2 of 2

DOE/CAO-95-1121

TWBIR ID:

TRU WASTE BASELINE INVENTORY WASTE PROFILE

COMMENTS

EPA COMMENTS

MANAGEMENT
COMMENTS

ACCEPTANCE
COMMENTS

Figure 1-3. Blank Waste Stream Profile Form (continued)

1 - 12

December 1995

Department of Energy TRU Waste Manager or Designee

TRU Waste Manager Contractor

Instructions for Form SP 9-6-1

1. Mark the changes, if any, on the enclosed waste stream profile forms for the last revision to the TWBIR. Otherwise note that there are no changes to the waste stream on the profile form.
2. For new waste streams or those that have been changed significantly, complete the following fields on form SP 9-6-1:
 - a. Waste volume detail
 - i. Stored and projected
 - ii. Number and types of containers (volumes of containers that are not standard (i.e. standard waste box, 55-gallon drum, RH canisters etc.)
 - iii. As generated waste form volumes and final waste form volumes
 - b. Final Waste Form (i.e. solidified inorganic, salt, solidified organic, soils, uncategorized metal, lead/cadmium metal, inorganic non-metal, combustible, graphite, heterogeneous, filters, or vitrified waste as defined in Appendix 5 of the TWBIR revision 3)
 - c. Waste Matrix Code
 - d. Waste Material Parameters
 - e. Radionuclide concentrations
 - f. For consolidated waste streams, identify the waste streams and describe how they were consolidated
 - g. Waste Stream descriptions
 - h. Inventory Date
3. Indicate whether PCBs are included in the waste stream and provide the concentration. If no PCBs are present enter zero in the PCB field.
4. In management comments provide the following information:
 - a. For waste streams that have been changed, note the reason for the change under management comments.
 - b. If the waste stream includes solidified organic or inorganic material, provide the materials used for solidification and proportions used in management comments.
 - c. If the waste stream includes cement is the cement wet (reacted) or dry (unreacted)
 - d. Date waste was generated or if available the date the last assay was performed on the waste.
 - e. Identify pyrochemical salts that resulted from Direct Oxygen Reduction (DOR) or oxygen sparging.
 - f. Identify any other non-radioactive waste materials that contribute to greater than 5 volume or weight % of the waste.
 - g. Identify organic ligands (acetate, citrate, oxalate, or EDTA) sulfate, nitrate, or phosphate included in the waste.
5. Initial changes and sign and date the waste stream profile sheet.



Form SP 9-6-2
Data Completeness Checklist
Checklist, Page 1 of 3

Site: _____

Item #	Objective Evidence Required	Yes	No	N/A
1	Complete and adequate objective evidence that the site has no changes to their waste streams is present.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Complete and adequate objective evidence that the site has provided all available waste stream volumes and container types for the stored and projected waste streams for "as generated form" is present.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	For projected waste streams, the site has provided projected dates for the waste stream volumes for "as generated form."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Complete and adequate objective evidence that the site has provided all available waste stream volumes and container types for stored and projected waste streams for "final waste form" is present.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	For the projected waste streams, the site has provided projected dates for the waste stream volumes for "final waste form."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	There is complete and adequate objective evidence that the site has provided all available waste stream radionuclide inventory values for their waste streams.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	There is complete and adequate objective evidence that the site has provided the last assay date (or base date) for their waste streams.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	There is complete and adequate objective evidence that the site has provided all available non-radioactive waste material parameter values for their waste streams.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	If the site provided values for "solidified organic material" or "solidified inorganic material," they also provided all available objective evidence that specifies what materials were used to solidify the waste and in what proportions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	If the site indicated that cement was used for solidification of organic or inorganic materials, they also provided the type of solidification based on the following: <input type="checkbox"/> Unreacted (dry) cement <input type="checkbox"/> Reacted (hydrated) cement <input type="checkbox"/> Combination of both unreacted and reacted cement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	There is complete and adequate objective evidence that the site has provided a determination that: <input type="checkbox"/> there are no pyrochemical salts in their waste streams or <input type="checkbox"/> there are pyrochemical salts in their waste streams.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Form SP 9-6-2
Data Completeness Checklist
Checklist, Page 2 of 3

Site: _____

Item #	Objective Evidence Required	Yes	No	N/A
12	If the site has indicated that their waste streams contain pyrochemical salts, they also indicated whether the pyrochemical salts resulted from: <input type="checkbox"/> direct oxygen reduction, <input type="checkbox"/> oxygen sparging, or <input type="checkbox"/> other.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	There is complete and adequate objective evidence that the site has provided all available information on inventory of any other non-radioactive waste materials that account for a significant portion (greater than 5% by weight or volume of a waste stream) of any of their waste streams.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	For newly identified (since 1995) waste streams, the site has provided complete and adequate objective evidence for any inventory of organic ligands (acetate, citrate, oxalate, or EDTA) and of sulfate (SO ₄), nitrate (NO ₃), and phosphate (PO ₄) for their waste streams.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	If the site has consolidated waste streams, the site provided a crosswalk between old and new waste stream identifiers. (N/A indicates that the site has not consolidated any waste streams)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	If the site has indicated that they have waste stream description changes, the site provided complete and adequate objective evidence of these changes. (N/A indicates that the site has no waste stream description changes)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	The site responded to: <input type="checkbox"/> CBFO data call (initial letter from C. Gist), <input type="checkbox"/> LANL-CO follow-up data call (initial letter from B. Crawford), or <input type="checkbox"/> both.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	If routine calculations were necessary for this site's waste streams, these calculations were recorded in a "Routine Calculations Report" and included in the file for this site.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	There is complete and adequate objective evidence that the site submitted final verification that their data is correct in the TWBID.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Attachment 2 – Example Second Data Request
Letter from Dr. Crawford, Page 1 of 1**



Environmental Science and Waste Technology Division
Carlsbad Operations
115 North Main Street
Carlsbad, New Mexico 88220
(505) 628-3934 FAX (505) 628-3238

Subject: Final Data Request for TWBIR Rev. 4

Your site has been identified as a site that has not sent any update information for the current Transuranic Waste Baseline Inventory Report (Rev. 4). We would like to have an indication whether any of the areas in which we need to have updated information have been changed in your inventory.

Please use the attached form letter to indicate whether there are changes to your current inventory. If you have no changes, please refer to the question sheet attached, Dr. Giambalvo letter, and the TWBIR Rev. 2 Waste streams attachment for guidance. If you have no changes please indicate by writing “no changes” on the line provided in the form letter. When these forms are complete please sign and date the blocks provided for the subcontractor and the Department of Energy in the form letter. Provision of both signatures is meant to provide a witnessed record of your inventory changes.

Please provide this information by **November 8th**. If we do not have a response from you by that time, your inventory will remain unchanged in Revision 4 to the TWBIR and may ultimately affect your shipments to WIPP or Hub site.

Sincerely,

Dr. Beverly Crawford
Inventory/AK Lead
LANL – Carlsbad Office

Attachments:

Form letter response
TWBIR Rev. 3 Waste Streams
Giambalvo letter

Attachment 2 – Example Second Data Request for Additional Data Second Letter from Dr. Crawford, Page 1 of 2



Environmental Science and Waste Technology Division
Carlsbad Operations
115 North Main Street
Carlsbad, New Mexico 88220
(505) 628-3934 FAX (505) 628-3238

To: Distribution

Re: Additional Data for TWBIR Rev. 4

Upon review of our data needs for the upcoming revision of the Transuranic Waste Baseline Inventory Report (TWBIR Rev. 4), there may be some data missing from your response that was overlooked on our first request. Please refer to the areas identified below for data that has been requested for the repository model.

Please pay particular attention to the responses that you have provided to the following areas (refer to the Giambalvo letter attached for particular concerns):

Radionuclides:

Does the inventory of radionuclides you have provided include all of the radionuclides that are identified in Section 2 of the letter? (see page 2 of the letter, an all inclusive list is provided in the request for WIPP-scaled inventories with the addition of Cs-137 and Sr-90). If any of the radionuclides listed in Section 2 of the letter are not present in your waste, please indicate. Scaling factors and decay corrections will be applied by the LANL database and do not need to be applied to the data that you provide. However, if not provided, a data generated date is needed for LANL to apply the appropriate decay correction.

Waste Material Parameters:

Referring to Item 3 in the letter, does your inventory include solidified organic or inorganic material? If so please provide the materials used for solidification along with the proportions used.

Does the inventory provided include cement waste (portland cement or cement containing CaO or Ca(OH)₂)? If so has it been separated from inorganic material, solidified organic or inorganic material or other waste material parameters.

Please indicate wet (reacted) and dry (unreacted) quantities of cement in your inventory if present.

**Attachment 2 – Example Second Data Request for Additional Data
Second Letter from Dr. Crawford, Page 2 of 2**

Is vitrified, solidified inorganic material, solidified organic material or cement expected as a final waste form and data is not available at this time? If so, please estimate the partial densities of the waste material parameters using the estimation protocols found in appendix B-7 in the TWBIR rev. 3. Does your inventory contain pyrochemical salts? If so, please identify any salts that resulted from Direct Oxygen Reduction (DOR) or O₂ sparging. Have any other non-radioactive waste materials contributing to greater than 5% of the volume or weight of the waste reported been identified?

New Waste Streams:

If new waste streams have been generated as a change from hazardous waste to non-hazardous waste, please provide a justification for elimination of hazardous waste codes.

If organic ligands (acetate, citrate, oxalate or EDTA), sulfate, nitrate or phosphate are included in the waste stream as a result of environmental restoration, decontamination and decommissioning or similar activities include these waste components in your inventory.

Please provide the date of generation for any new waste streams.

Classified Material

Do you have classified material in your inventory? (Please provide only a “yes” or “no” answer). We will contact you concerning your waste stream if we need additional information or information has not already been provided.

Polychlorinated Biphenyls (PCBs)

Please indicate whether there are PCBs included in your waste inventory.

If you have identified PCBs, please provide the concentration on your waste stream profile. If no PCBs are present enter zero.

If any changes have been made to your inventory please provide justification for those changes reported. When all of the data has been reported or changed on your hardcopy waste profiles, please provide a copy of the cover sheet sent as an attachment with this letter signed by both the contractor and Department of Energy representative. These signatures are intended to attest to the accuracy of the data you are providing.

If we do not hear from you by November 8th there will be no changes made to your inventory other than what you may have already sent us. Please send the signed cover letter and any additional data requested above to Sheila Lott or Jerri McTaggart at the LANL Carlsbad office: 515 N. Main, Carlsbad, NM 88220.

Thank you for responding quickly to this additional request. If you have any questions please contact me at 505-628-1380 or Sheila Lott at 505-628-1372.

Sincerely,
Dr. Beverly Crawford
AK/Inventory Lead, LANL

Attachment 3 - Criteria for Data Call Giambalvo Letter, Page 1 of 5



Dr. Emily R. Giambalvo
Senior Member of Technical Staff

Performance Assessment and Decision Analysis Dept. 6821

4100 National Parks Highway
Carlsbad, NM 88220
Sandia National Laboratories
Phone: (505) 234-0176
(505) 234-2780 (Secretary)
Fax: (505) 234-0061
Internet: ergiamb@sandia.gov

April 22, 2002

Joe Harvill, T-141, GSA-101, (234-7652)
Westinghouse TRU Solutions
Carlsbad, New Mexico

Subject: Sandia's WIPP Inventory Data Needs for Performance Assessment

Per your request [Harvill, 2002], this letter details Sandia's additional data needs regarding the inventory data to be included in the 2002 update to the Transuranic Waste Baseline Inventory Report (TWBIR). In order to conduct a performance assessment of the WIPP for the Compliance Recertification Application (CRA) that (1) accounts for revisions to inventory estimates since certification of the repository, (2) accounts for both currently emplaced waste and to-be-emplaced waste, and (3) is defensible against concerns regarding heterogeneous waste emplacement, we will need the 2002 update to the TWBIR to include the following inventories:

1. **Waste stream volumes.**
2. **Inventory of radionuclides on a waste stream basis for both CH- and RH-TRU waste, decayed to a common base year.** For calculating releases due to cuttings, cavings, and spillings we need inventories on a waste-stream basis for the key radionuclides (i.e. those accounting for >99% of the EPA units in the WIPP plus some of their parents and daughters) [Sanchez et al., 1997]. For the Compliance Certification Application, the key radionuclides were determined to be ^{241}Am , ^{244}Cm , ^{238}Pu , ^{239}Pu , ^{240}Pu , ^{241}Pu , ^{233}U , ^{234}U , ^{137}Cs , and ^{90}Sr [Sanchez et al., 1997]. Because Sandia will re-evaluate the determination of key radionuclides, this list may grow.

For assessing the impact of heterogeneous waste emplacement on direct brine releases, we will require inventories on a waste-stream basis for a subset of the radionuclides accounted for in the direct brine release model. The required radionuclides are ^{241}Am , ^{243}Am , ^{244}Cm , ^{237}Np , ^{238}Pu , ^{239}Pu , ^{240}Pu , ^{241}Pu , ^{242}Pu , ^{244}Pu , ^{229}Th , ^{230}Th , ^{232}Th , ^{233}U , ^{234}U , ^{235}U , ^{236}U , and ^{238}U .

Attachment 3 - Criteria for Data Call Giambalvo Letter, Page 2 of 5

For performance assessment calculations of direct brine release and subsurface transport of radionuclides, for determining the waste unit factor, and for re-evaluating key radionuclide determinations, we will require inventories on a WIPP-scale basis for a greater number of radionuclides. Fifteen radionuclides contribute to the waste unit factor: ^{241}Am , ^{243}Am , ^{249}Cf , ^{251}Cf , ^{243}Cm , ^{245}Cm , ^{246}Cm , ^{247}Cm , ^{248}Cm , ^{237}Np , ^{238}Pu , ^{239}Pu , ^{240}Pu , ^{242}Pu , and ^{244}Pu [Sanchez, 1996]. Performance assessment models track 29 radionuclides on a WIPP-scale basis: ^{241}Am , ^{243}Am , ^{252}Cf , ^{243}Cm , ^{244}Cm , ^{245}Cm , ^{248}Cm , ^{137}Cs , ^{237}Np , ^{231}Pa , ^{210}Pb , ^{147}Pm , ^{238}Pu , ^{239}Pu , ^{240}Pu , ^{241}Pu , ^{242}Pu , ^{244}Pu , ^{226}Ra , ^{228}Ra , ^{90}Sr , ^{229}Th , ^{230}Th , ^{232}Th , ^{233}U , ^{234}U , ^{235}U , ^{236}U , ^{238}U [Garner, 1996; Sanchez et al., 1997]. Re-evaluation of key radionuclides may benefit from tracking 14 additional radionuclides that per EPA regulation contribute to the number of EPA units in the WIPP: ^{227}Ac , ^{14}C , ^{135}Cs , ^{129}I , ^{59}Ni , ^{63}Ni , ^{107}Pd , ^{79}Se , ^{151}Sm , $^{121\text{m}}\text{Sn}$, ^{126}Sn , ^{99}Tc , ^{232}U , and ^{93}Zr [Sanchez, 1996]. Radionuclide inventories for these purposes may be provided on a WIPP-scale basis prior to completion of the 2002 update to the TWBIR, if you wish to minimize the number of radionuclides that must be tracked on a waste stream basis, or may be provided on a waste stream basis within the update. If WIPP-scale inventories are provided prior to completion of the 2002 update to the TWBIR, the same inventories should be included in the 2002 update to the TWBIR.

In summary, please provide waste-stream level inventories of at least

^{241}Am , ^{243}Am , ^{244}Cm , ^{237}Np , ^{238}Pu , ^{239}Pu , ^{240}Pu , ^{241}Pu , ^{242}Pu , ^{244}Pu , ^{229}Th ,
 ^{230}Th , ^{232}Th , ^{233}U , ^{234}U , ^{235}U , ^{236}U , ^{238}U , ^{137}Cs , and ^{90}Sr .

Please provide WIPP-scale inventories of

^{241}Am , ^{243}Am , ^{249}Cf , ^{251}Cf , ^{252}Cf , ^{243}Cm , ^{244}Cm , ^{245}Cm , ^{246}Cm , ^{247}Cm ,
 ^{248}Cm , ^{137}Cs , ^{237}Np , ^{231}Pa , ^{210}Pb , ^{147}Pm , ^{238}Pu , ^{239}Pu , ^{240}Pu , ^{241}Pu , ^{242}Pu ,
 ^{244}Pu , ^{226}Ra , ^{228}Ra , ^{90}Sr , ^{229}Th , ^{230}Th , ^{232}Th , ^{233}U , ^{234}U , ^{235}U , ^{236}U , and
 ^{238}U .

Consider providing WIPP-scale inventories of

^{227}Ac , ^{14}C , ^{135}Cs , ^{129}I , ^{59}Ni , ^{63}Ni , ^{107}Pd , ^{79}Se , ^{151}Sm , $^{121\text{m}}\text{Sn}$, ^{126}Sn , ^{99}Tc ,
 ^{232}U , and ^{93}Zr .

- Inventory of all nonradioactive waste material parameters that were previously tracked in the TWBIR.** These inventories should be provided on a waste stream basis for both CH- and RH-TRU waste. Nonradioactive waste material parameters include: Iron Base Metal/Alloy; Aluminum Base Metal/Alloy; Other Metal/Alloy; Other Inorganic Materials; Vitriified; Cellulosics; Rubber; Plastics; Solidified Inorganic Material; Solidified Organic Material; Cement; Soils; Steel (container material); Plastic/Liners (container material); and Lead (container material for RH-TRU waste only) [US DOE, 1996].

The Cellulosics inventory should include plywood waste boxes and other waste container materials made of cellulosics. This inventory will contribute to gas generation.

If Solidified Organic Material or Solidified Inorganic Material occurs in a waste stream, please specify what materials were used to solidify the waste, and if feasible, in what proportions. The specification can be made within the waste stream

Attachment 3 - Criteria for Data Call Giambalvo Letter, Page 3 of 5

description or in a separate field. These materials may have implications for actinide solubility.

Include only portland cement (and concrete or other cements containing CaO or Ca(OH)₂) in the inventory of Cement. Specify whether the partial mass density of Cement is based on unreacted (dry) cement, reacted (hydrated) cement, or a combination. Do not list portland cement inventory under Other Inorganic Material, Solidified Organic Material, Solidified Inorganic Material, or other waste material parameter. Cement may affect the pH of WIPP brines.

If Vitrified, Solidified Inorganic Material, Solidified Organic Material, or Cement is expected to occur in the final waste form and final waste form inventory data is not yet available, please estimate the partial densities of these waste material parameters that will occur in the final waste form. Appendix B-7 in the TWBIR Rev. 3 [US DOE, 1996] provides an example of how final waste form partial densities may be estimated.

If possible, specify whether a waste stream contains pyrochemical salts, and whether the pyrochemical salts resulted from Direct Oxygen Reduction (DOR) or O₂ sparging. The specification can be made within the waste stream description or in a separate field. This information may have implications for actinide oxidation state.

4. **Inventory of any other nonradioactive waste materials that are discovered to account for a significant portion of a waste stream as a result of changes to the inventory.** We suggest that inventory should be taken for any material not included in the existing waste material parameters and accounting for >5% by weight or volume of a waste stream. These inventories, if they exist, should be provided on a waste stream basis for both CH- and RH-TRU waste.
5. **Inventory of Cellulosics, Plastics, Rubbers, and other biodegradable materials used to facilitate emplacement of waste and MgO in the WIPP.** Waste and MgO emplacement in the WIPP is facilitated by the use of plastic shrinkwrap, cardboard stabilizers, and other materials. Inventory estimates for these materials should be included on a WIPP-scale basis. These materials may contribute to gas generation.
6. **Inventory of organic ligands and of SO₄, NO₃, and PO₄.** We understand from informal conversations with you and members of your team that new estimates of organic ligand concentrations and of SO₄, NO₃, and PO₄ concentrations would not improve upon the estimates available in the TWBIR Rev. 3. Therefore, for waste streams included in the TWBIR Rev 3. (and similar waste streams), we do not need updated inventories of these waste components to be included in the 2002 update to the TWBIR.

If organic ligands (acetate, citrate, oxalate, or EDTA), SO₄, NO₃, or PO₄ will be added to new waste streams during environmental restoration, decontamination and decommissioning, or similar activities, include inventory estimates for these waste components in the new waste streams. These components may affect actinide solubility or gas generation rates.

The 2002 update to the TWBIR should have the following characteristics:

Attachment 3 – Criteria for Data Call Giambalvo Letter, Page 4 of 5

1. Waste-stream level inventories of radionuclides and nonradioactive waste material parameters for waste currently emplaced in the WIPP should be included. The currently emplaced inventory should be distinct from the inventory remaining at waste generator sites. Inventories supplied by the waste generator sites should not include waste already sent to the WIPP.
2. Waste-stream level inventories of radionuclides and nonradioactive waste material parameters supplied by the waste generator sites should include estimates for (1) stored inventory, (2) projected inventory, (3) stored plus projected inventory (anticipated inventory), and (4) inventory scaled to fill the WIPP (disposal inventory). A definition for each type of inventory is given in the TWBIR Rev. 3 [US DOE, 1996].
3. To the extent possible, the waste streams identified in the 2002 update to the TWBIR should remain the same as the waste streams identified in previous versions of the TWBIR. Such consistency will (1) ensure that inventory data is available at the level of detail required for performance assessment calculations, and (2) allow us to continue to reference previous versions of the TWBIR for any information not collected for the 2002 update.

In order for the 2002 update to the TWBIR to be fully incorporated into CRA performance assessment calculations, we will need to receive it by your proposed deadline of the end of October, 2002. If any of the preliminary assessments of inventory issues that we carry out prior to October, 2002 indicate a need for additional or more specific data, we will notify you immediately in writing.

Sincerely,

Dr. Emily R. Giambalvo
(Senior Member of Technical Staff)

References:

- Garner, J.W., 1996. "Radioisotopes to be used in the 1996 CCA calculations," Memo to C. T. Stockman, 15 March 1996, Albuquerque, NM: Sandia National Laboratories, WPO 35202.
- Harvill, J., 2002. "Inventory Information," Email to E. R. Giambalvo, 9 April 2002, Carlsbad, NM.
- Sanchez, L.C., 1996. "Identification of important radionuclides used in 1996 CCA WIPP performance assessment," Memo to "Distribution," 25 April 1996, Albuquerque, NM: Sandia National Laboratories, WPO 37431.

Attachment 3 – Criteria for Data Call Giambalvo Letter, Page 5 of 5

Sanchez, L.C., J. Liscum-Powell, J.S. Rath and H. Trellue, 1997. "WIPP PA Analysis Report for EPAUNI: Estimating Probability Distribution of EPA Unit Loading in the WIPP Repository for Performance Assessment Calculations, version 1.01," 17 February 1997, Sandia National Laboratories, Albuquerque, NM, WPO 243843.

US DOE, 1996. "Transuranic Waste Baseline Inventory Report, Revision 3," June 1996, United States Department of Energy, Carlsbad, NM.

ERG:6821:erg/(2002-1002, Rev. A)

Copy to:

R. Patterson, DOE, CBFO
D. Mercer, DOE, CBFO
R. Nelson, DOE, CBFO
S.C. Casey, Westinghouse
J.R. Fudge, Westinghouse
J.J. Cotton, Westinghouse
S. Chakraborti, Weston
MS-1395, P.E. Shoemaker [Dept. 6820]
MS-1395, M.K. Knowles [Dept. 6821]
MS-0779, L.C. Sanchez [Dept. 6849]
MS-1395, D.E. Wall [Dept. 6821]
MS-1395, J. W. Garner [Dept. 6821]
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MS-1395, N.A. Wall [Dept. 6822]
MS-1395, Y. Wang [Dept. 6822]
MS-1395, L.H. Brush [Dept. 6822]
MS-1395, E.R. Giambalvo [Dept. 6821]
MS-1395, Day File [Dept. 6821]

Attachment 4 – Example Data Response Letter
Form letter example to provide to sites for use in response to data call
Form Letter, Page 1 of 1

Dr. Beverly Crawford
LANL-Carlsbad Operations Office
115 North Main St.
Carlsbad, NM 88220

Subject: Final Data Request for Transuranic Waste Baseline Inventory Report, Revision 4

Dear Dr. Crawford:

_____ Site is responding to your letter dated October 31, 2002, Final Data Request for Transuranic Waste Baseline Inventory Report, Revision 4. As you requested in your letter, we have verified that all the parameters found in the Giambalvo letter have been covered or that there are no changes.

There are no changes to the inventory information. Please indicate in writing that there are no changes
_____.

There are changes to the inventory information and we have complied with the attachments for your letter dated October 31, 2002.

Please sign below and fax a copy to Sheila Lott at 505-628-3238.

_____ Date

_____ Date

Department of Energy
TRU Waste Manager/Designee

TRU Waste Manager Contractor



Form SP 9-6-3
Inventory Data Change/Addition Control Form
Page 1 of 2

This form is used to document resolution of data discrepancies and acquisition of additional data for the Transuranic Waste Inventory Update Report, 2003.

1. This form documents: Additional Data Required Change to Existing Data

2. Date: _____

3. Site: _____

4. Contact Name (include phone or email address as appropriate):

5. Identify Electronic File Names and Types (N/A if none received):

6. Comments:

7. Discrepancy Resolution:

8. Changes/Additional Data Requested:

Form SP 9-6-3
Inventory Data Change/Addition Control Form
Page 2 of 2

9. Date Requested: _____

10. Changes/Additional Data Received:

11. Date Received: _____

Data Collection/Entry Personnel

Print Name	Signature	Date
------------	-----------	------

Inventory Team Lead (for concurrence on resolution)

Print Name	Signature	Date
------------	-----------	------

REFERENCES AND DEFINITIONS

REFERENCES

Giambalvo, E.R. 2002, "Sandia's WIPP Inventory Data Needs for Performance Assessment." Letter to J. Harvill, April 22, 2002, Carlsbad, NM: Sandia National Laboratories

US Department of Energy, 1995, Transuranic Waste Baseline Inventory Report, DOE/CAO-95-1121, Revision 2, December 1995.

US Department of Energy, Transuranic Waste Baseline Inventory Report, DOE/CAO 95-1121, Revision 3, June 1996.

Appendix B

DATA ENTRY METHODOLOGY FOR THE TRANSURANIC WASTE INVENTORY UPDATE REPORT, 2003

1.0 PURPOSE

This document describes the steps that must be taken to enter data into the Transuranic Waste Baseline Database (TWBID), to update Revision 2 for the development of the Transuranic Waste Inventory Update Report, 2003. The database is maintained in Microsoft® Access 2000 and is run on Microsoft Windows NT® platform. This document also describes the configuration control and data verification steps that are taken to assure the data entered is accurate and cannot be changed without documentation of changes.

2.0 SCOPE

This document applies to all data entry and verification activities performed for the purpose of updating the TWBID.

3.0 REFERENCES AND DEFINITIONS

3.1 REFERENCES

1. US Department of Energy, Transuranic Baseline Inventory Report, Revision 2 "TWBIR Data Requirements," Appendix C, Revision 8, April 14, 1995.

3.2 DEFINITIONS AND ACRONYMS

TWBID Transuranic Waste Baseline Inventory Database

TWBIR Transuranic Waste Baseline Inventory Report

WTWBIR: WIPP TRU Waste Baseline Inventory Report.

WS: Waste stream.

ID: Identifier

4.0 RESPONSIBILITIES

Database Administrator: The database administrator (DBA) is responsible for maintaining the database, troubleshooting, adding user accounts, assigning passwords, controlling database access, providing verification authority, creating functionality, and building customized queries for the development of the TWBID and the Transuranic Waste Inventory Update Report, 2003.

Data Entry Personnel: The data entry personnel are responsible for data entry into the database from the information provided by the sites on a waste stream or a container-by-container basis using this methodology.

Data Entry Verifiers: The data entry verifiers are responsible for reviewing the data after final entry of information and acknowledging completion of data review for each waste stream record in the database. This person must be independent from the person responsible for entering data into the record being reviewed.

5.0 PROCESS

5.1 Logging In

5.1.1 Click on the TWBID shortcut (see Figure 1) icon to open the TWBID database.



TWBID

FIGURE 1

5.1.2 At the **Logon** screen, enter your username and password (See Figure 2). Select **OK**. A successful login will display the Main Menu screen (Figure 3).

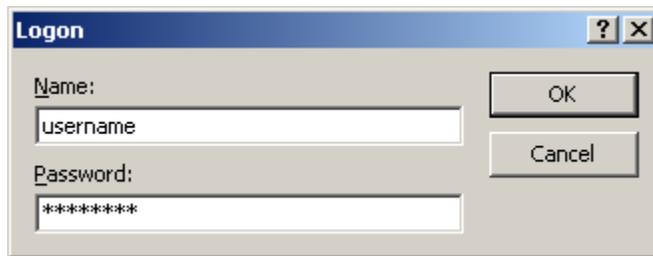


FIGURE 2

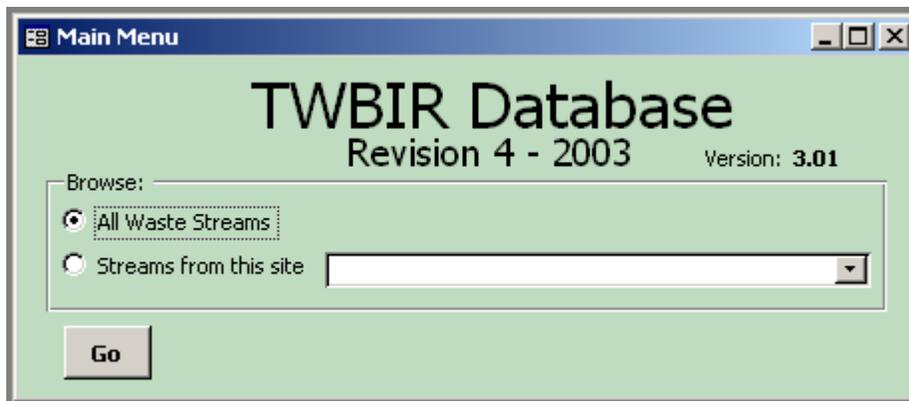


FIGURE 3

5.2 Waste Stream Data Entry

Information gathered from the data collection methodology shall be used for waste stream data entry. Data entry will result in the following:

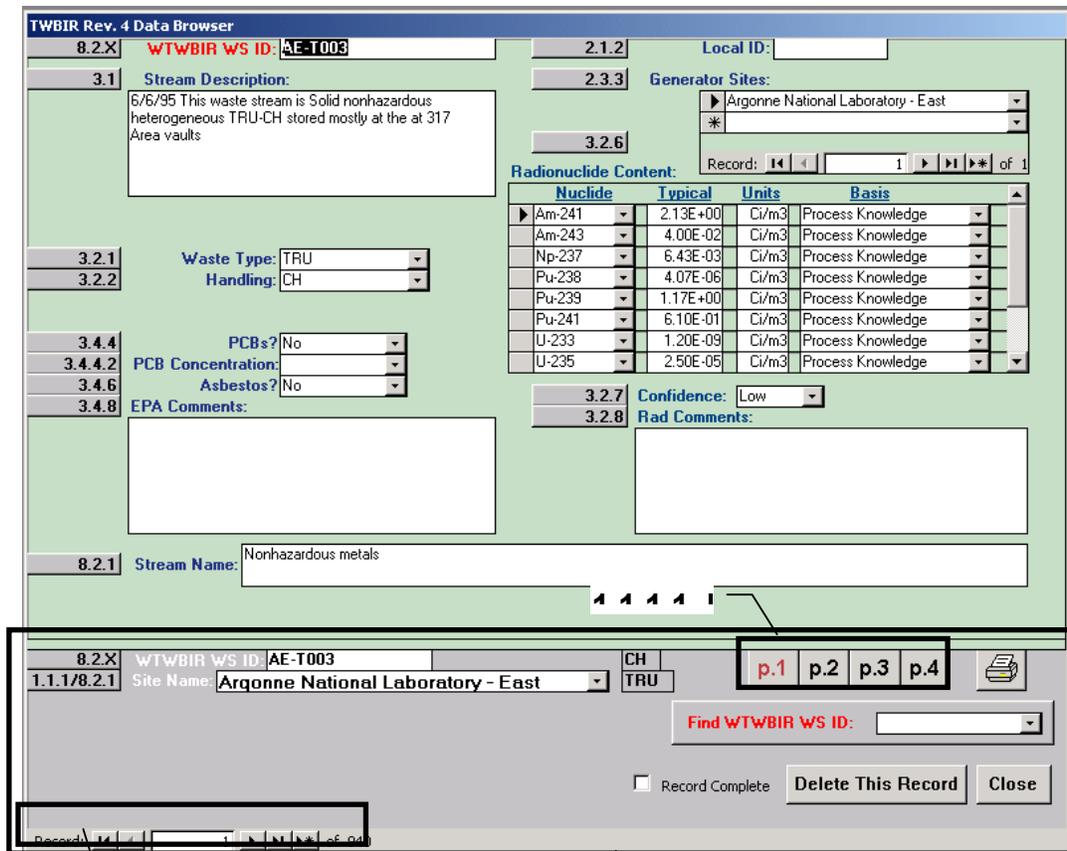
- Creating records for new waste streams

- Changing records of existing waste streams
- Deleting records of deleted waste streams. (The waste streams are actually archived in the database and will not be used in analyses)
- The key field for all waste stream records is WTWBIR WS ID

5.2.1 Navigating Waste Stream Records

5.2.1.1 From the Main Menu screen, select the desired radio button under Browse. The first option will display all Waste Stream records from the TWBID. The second option will display Waste Stream records for the selected site only.

5.2.1.2 Click **Go**. This will display the first Waste Stream record of the selected TRU waste site list, in alphabetical order by WTWBIR WS ID.



Scroll

Lower Area of Screen

FIGURE 4

5.2.1.3 The Scroll Control Bar is located in the lower-left corner of the window. The controls on this bar allow the user to browse the list of Waste Stream records of TRU Waste sites as selected on the main menu (See Figure 4).

- 5.2.1.4** There is a search utility to find a waste stream directly by selecting the WTWBIR WS ID from the drop down-list located on the lower-right portion of the window. You may also type the WTWBIR WS ID in manually in the box and press **ENTER** (See Figure 4).

5.2.2 Creating a New Waste Stream Record

- 5.2.2.1** On the Scroll Control Bar in the lower left corner of the screen (See Figure 4), click the New Record button (▶✱) to display a new blank record.
- 5.2.2.2** Enter the WTWBIR WS ID in associated field in lower area of the screen (See Figure 4).
- 5.2.2.3** Enter TRU waste site name in associated field in lower area of the screen or use the pull down menu by typing the first few characters of the site.
- 5.2.2.4** Select any field in upper area of the screen. The WTWBIR WS ID Field in the upper area of the screen should populate with correct ID number.
- 5.2.2.5** Enter the TRU waste site descriptions, comments and data into correct fields utilizing pull down menus when available. Use the **p.1** – **p.4** tabs to navigate through the pages of the record.
- 5.2.2.6** When no further changes are required, check the box “Record Complete” This also applies to records that have “No Changes”
- 5.2.2.7** When data entry is complete, and an attempt is made to leave the new Waste Stream record, a prompt will appear requesting comments. Enter comments briefly but thoroughly describing changes, additions, etc. that occurred for this new Waste Stream (See Figure 5).

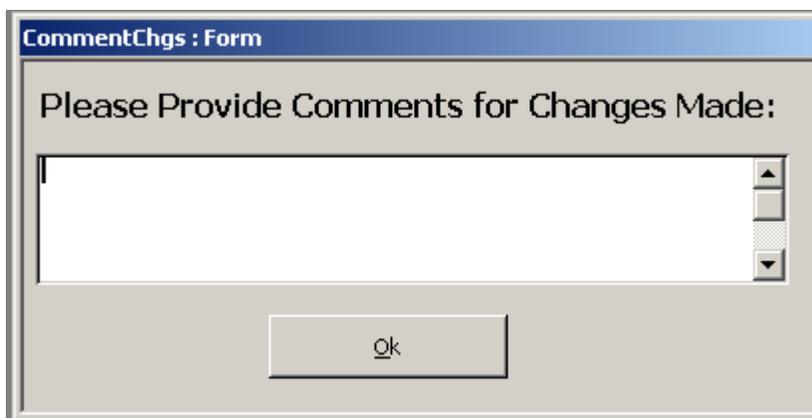


FIGURE 5

- 5.2.2.8** After the comments are entered, click Ok (the record is now saved in the TWBID). It is now possible to navigate to a new Waste Stream record for additional data entry for a different waste stream.

5.2.3 Updating an Existing Waste Stream Record

- 5.2.3.1 Navigate to the appropriate Waste Stream record using either the Scroll Control Bar or the **Find** TWBIR WS ID dropdown-list box.
- 5.2.3.2 Verify WTWBIR WS ID number for the waste stream of interest.
- 5.2.3.3 Compare new data gathered by Data Collection Methodology for the Transuranic Waste Inventory Update Report, 2003 Appendix A with the existing database record and make changes accordingly. Use pull down menus where available. Use the **p.1** – **p.4** tabs to navigate through the pages of the waste stream record.
- 5.2.3.4 When no further changes are required, check the box “Record Complete,” navigate to a different record to save data and exit record.
- 5.2.3.5 At the prompt, enter appropriate comments into comment screen. These comments should indicate the reason for the change(s) and be detailed enough to enable verifier to easily track changes (See Figure 5)
- 5.2.3.6 Click **OK**, the record is now saved in the TWBID. You may now proceed to the next record.

5.2.4 Deleting a Waste Stream Record

- 5.2.4.1 Navigate to the appropriate Waste Stream record using either the Scroll Control Bar or the **Find** TWBIR WS ID dropdown-list box.
- 5.2.4.2 Verify WTWBIR WS ID number.
- 5.2.4.3 Click **Delete This Record**.
- 5.2.4.4 At the prompt, click **Yes** to confirm the deletion, or **No** to cancel the delete function (this is the last chance for backing out of the delete function).
- 5.2.4.5 At the prompt, enter appropriate comments into comment screen. These comments should indicate the reason for the deletion(s) and be detailed enough to enable verifier to easily track your work (See Figure 5).

5.3 Electronic Import of Data

- 5.3.1 If data from the sites was electronically imported into the TWBIR, Revision 4 database rather than entered manually, then it will only be necessary to verify each different update scenario on a minimum of one record in order to qualify the entire batch. The different update scenarios are as follows:

1. New Waste Stream record added
2. Existing Waste Stream record updated.
3. Deletion of an existing Waste Stream record.

For scenarios 1 & 2, the verification should involve careful inspection by the database administrator in the following areas to ensure accuracy:

NOTE: When updating existing Waste Stream records, existing data should always be overwritten with new data provided. If the site didn't provide complete data, it should be determined if the absence of data implies that it should no longer exist or simply be left unchanged, and the respective verification approach should be taken.

- All high level affected fields (WTWBIR WS ID, Stream Description, etc.)
- Radionuclide inventory sub-records
- EPA Code sub-records
- TRUCON Code sub-records
- Generator site sub-records
- IDC sub-records
- Associated Storage Container types (As-Generated)
 - All affected fields for each type (Container Type, Internal Volume, etc.)
 - Estimated generation (yearly) sub-records for each type
- Associated Shipping Container types (Final Form)
 - All affected fields for each type (Container Type, Internal Volume, etc.)
 - Estimated generation (yearly) sub-records for each type
 - Waste Parameter sub-records for each type

For scenario 3, the verification should ensure that an affected record has the following fields populated with the respective values: Deleted = true, DeletedBy = "AutoUpdate", DeletedDate = <Date/Time stamp>. This verification will need to be accomplished by the database administrator by viewing the data in raw form.

The database administrator should also verify that a minimum of one record is generated in the change log table (CurChanges) for each affected Waste Stream record. The purpose of this is to keep a record that the change occurred. The change log record should also be recorded as being "Reviewed" (Reviewed=true) in order to prevent data verifiers from having to manually review the affected Waste Stream record.

5.4 Reviewing and Verifying Data

NOTE: The person who entered the data or made the changes to a waste stream record shall not be the person performing the verification of the same record. Only users with verification authority from the DBA have access to this option.

- 5.4.1** On the Main Menu screen, check the Review Current Changes box (only visible to designated "verifiers"). Click **Go** (See Figure 6). This will display the first Waste Stream record of the selected list, in alphabetical order by WTWBIR WS ID.

NOTE: To see the records that are complete and have not been reviewed, check the "Review Current Changes" and click **Go**.

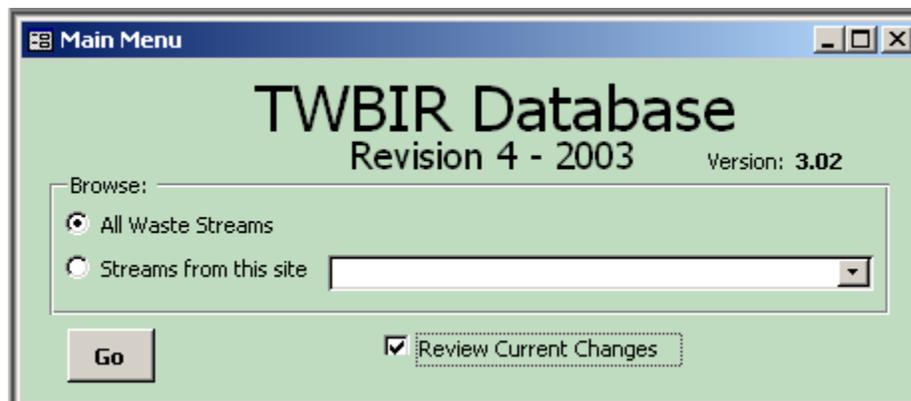


FIGURE 6

- 5.4.2 The **Review Changes** section will appear in the lower left area of the screen displaying a list of changes made to the Waste Stream record, including comments entered at the time of the change as well as other pertinent information (See Figure 7).

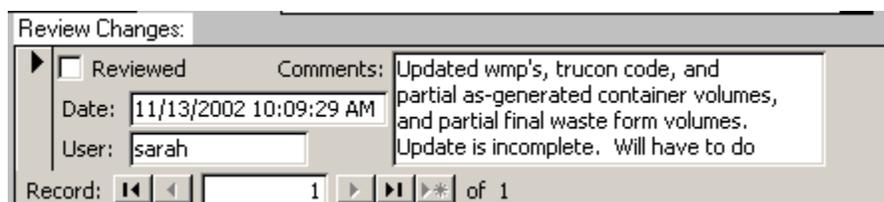


FIGURE 7

- 5.4.3 Use the data gathered by the Data Collection Methodology for the Transuranic Waste Inventory Update Report, 2003 (Appendix A of this document) to compare generator site data with database record and verify correctness. Use the **p.1 – p.4** tabs to navigate through the pages of the record.
- 5.4.4 For an additional review tool, you may opt to print a hardcopy version of the data for this waste stream. This can be accomplished by clicking the Printer button (See Figure 4) in the lower-right section of the screen. At the prompt, select the “Print This Record” option (See Figure 8). Select **OK** at each additional prompt to view in Print Preview mode. While in Print Preview mode, click the Printer button at the top of the screen to send the print job to the printer.



FIGURE 8

NOTE: There can be multiple changes logged for review on a given Waste Stream record. Be sure to read through the entire list of changes before verifying data in order to account for all changes when reviewing.

- 5.4.5 If there is a discrepancy with the data, the verifier shall print out a hardcopy report of the Waste Stream record with the discrepancy marked on it and give it back to the Data Entry person to make a correction in the database.
- 5.4.6 When satisfied that the Waste Stream record is correct, the verifier shall check the **Reviewed** box for each of the change log entries in question (See Figure 7). The verifier shall not check any change log entries as **Reviewed** until the Waste Stream record is in satisfactory condition.
- 5.4.7 Using the scroll controls in the **Review Changes** section, select the next change log entry to verify. All verified changes will no longer display in the **Review Changes** section the next time you view the Waste Stream record.

6.0 ATTACHMENTS

Attachment 1 – Screen shots of pages 1-4 of the TWBID Database.

7.0 TRAINING

All personnel responsible for data entry and data verification must read and understand this document and Appendix C from the Transuranic Baseline Inventory Report, Revision 2 “TWBIR Data Requirements” Revision 8, dated April 14, 1995.

Attachment 1 – Screen Shots of Pages 1-4 of the TWBID, Rev. 4 Database

TWBIR Rev. 4 Data Browser

8.2.X **WTWBIR WS ID:** W026-221F-HET 2.1.2 Local ID: SR-w026

3.1 **Stream Description:**
200 Areas (F and H Separations Facilities). This waste is primarily solids consisting of mainly booties, lab coats, floor sweepings, rags, labware, and other job control wastes. Small Hepas, liquids, sludges and resins may also be found in this stream. The waste is generated primarily through separation activities in the

2.3.3 **Generator Sites:**
Savannah River Site

3.2.1 **Waste Type:** MTRU
3.2.2 **Handling:** CH

3.4.4 **PCBs?** Unknown
3.4.4.2 **PCB Concentration:**
3.4.6 **Asbestos?** Unknown

3.4.8 **EPA Comments:**
Process knowledge was used to characterize this waste stream, and therefore the confidence is medium.

3.2.7 **Confidence:** Medium
3.2.8 **Rad Comments:**
the radiological characteristics are based on the 1994 IDB, less estimated MLLW.
This stream contains Transuranic contaminants (>100 nCi/g) consisting of beta/gamma and alpha emitters. The waste is contact handled. The confidence level is medium based on

3.2.6 **Radionuclide Content:**

Nuclide	Typical	Units	Basis
Am-241	2.77E-01	Ci/m3	Process Knowledge
Other	1.68E-01	Ci/m3	Process Knowledge
Pu-238	7.71E+01	Ci/m3	Process Knowledge
Pu-239	1.28E+01	Ci/m3	Process Knowledge
Pu-240	3.17E-01	Ci/m3	Process Knowledge
Pu-241	1.54E+01	Ci/m3	Process Knowledge

8.2.1 **Stream Name:** CH Mixed TRU/Thirds Heterogeneous debris from 221F

8.2.X **WTWBIR WS ID:** W026-221F-HET CH
1.1.1/8.2.1 **Site Name:** Savannah River Site MTRU

p.1 p.2 p.3 p.4

Find TWBIR WS ID: W026-221F-HET

Record Complete **Delete This Record** **Close**

Record: 908 of 940

PAGE 1

TWBIR Rev. 4 Data Browser

8.2.3 **Final Waste Form:** Microcapsules Waste Matrix Code: 35400

8.2.5 **Stream Ownership:** Defense TRU Waste 8.2.4 **Residuals?** No

8.2.7 **TRUCDN Codes:** SR225A 8.2.8 **IDC:** 1001

8.2.9.1 **Source Description:**
The stream was produced in 221F, a separation facility for Pu-239 production.

8.2.9.2 **Source Category:** Other/Multiple Sources

8.2.10.1 **EPA/State Code and Contaminant List**

EPA/ST
0001
0003
0004
0005
0007
0008
0009
0011
0015
0019

6.4 **Management Comments:**
All the waste in this stream is currently stored on YFRU Pads 7 through 17. Pads 15-17 are enclosed and plans are to enclose pads 18 and 19 in the near future. As part of a mixed waste management plan, SRS is reorganizing the containers so that all mixed waste on pads 7-14 will be placed in covered storage on pads 15-19. The current plan is to at least assay, sort, size

7.1 **Acceptance Comments:**
Waste is double-bagged and placed in a 50-ml polyethylene drum liner inside a 55-gallon carbon steel drum. The liner lid is glued in place. Drums with greater than 0.5 Ci total activity are placed inside concrete culverts for additional shielding. In addition, large carbon steel boxes are used to store waste equipment from the Canyon processes and other large, bulky

8.2.X **WTWBIR WS ID:** W026-221F-HET CH
1.1.1/8.2.1 **Site Name:** Savannah River Site MTRU

p.1 p.2 p.3 p.4

Find TWBIR WS ID: W026-221F-HET

Record Complete **Delete This Record** **Close**

Record: 905 of 940

PAGE 2

Attachment 1 – Screen Shots Pages 1-4 of the TWBID, Rev 4 Database

TWBIR Rev. 4 Data Browser

8.2.12] **As-Generated Data**
 Container Type: **55-gallon**
 Comments: None

8.2.14.1.4] Internal Volume: 0.193 m3
 8.2.14.1.9] # Containers Stored: 486 on 9/30/2000 Date
 8.2.14.1.11] Total # Projected: 0

8.2.2.14.1.13] **WAC Containability**
 Certifiable? No Num non Cert: 100
 Repack Required? Yes Num Repack Req: 100
 Repack Cause: Particulates 1
 Record: 1 of 4
 8.2.14.1.13.3.2] Treatment Req? Yes Req:
 Treat Cause: % Cont Affect:
 Record: 1 of 1

8.2.14.1.12] **Estimated Rate of Generation**
 Year # Cont. Comments

Records: 14 of 2
 8.2.X] WTWBIR WS ID: W026-221F-HET
 1.1.1/8.2.1] Site Name: Savannah River Site

Find WTWBIR WS ID: W026-221F-HET

Record Complete Delete This Record Close

Record: 905 of 940

PAGE 3

TWBIR Rev. 4 Data Browser

8.2.15.X] **Final Form Data**
 Container Type: **55 Gallon Drum**

8.2.15.1.4] Internal Volume: 0.203 m3
 8.2.15.1.9] # Containers Stored: 486 on 12/31/1994 Date
 8.2.15.1.11] Total # Projected: 0

8.2.15.1.12] FFComments

8.2.15.1.14] **Waste Parameter Info**

Parameter	Avg (kg/m3)	LL (kg/m3)	UL (kg/m3)
Aluminum-Base Metal/Alloys	0.0		0.1
Cellulosics	24.0		48.0
Iron-Base Metal/Alloys	112.0		224.0
Other Inorganic Materials	28.0		56.0
Packaging Material, Plastic	4.8	0.0	0.0
Packaging Material, Steel	151.0	0.0	0.0
Plastics	6.8		13.2
Rubber	0.0		0.3

8.2.15.1.13] **Estimated Rate of Generation**
 Year # Cont. Comments

Records: 14 of 2
 8.2.X] WTWBIR WS ID: W026-221F-HET
 1.1.1/8.2.1] Site Name: Savannah River Site

Find WTWBIR WS ID: W026-221F-HET

Record Complete Delete This Record Close

Record: 905 of 940

PAGE 4

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