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2009 Auto-TCR for Tank 241-T-204

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Abstract: The purpose of this report is to publish the AUTO-Tank Characterization Report (AutoTCR) that was automatically generated by the TWINS database. The archiving and retrieval of tank information will be performed using a tank-by-tank full document issuance system in the future. This is necessary because the software that generates the AutoTCR is no longer compatible with modern hardware operating system(s), and/or interfacing software packages. The purpose of issuing the AutoTCR document is to provide a snapshot of the inventories and to preserve a historical record of tank data. The text description for the TCR has not been updated since 2005, with the exception of the Best Basis Inventory. The text contains tank historical data, procedures used in sample analysis, waste transfer history, and physical and chemical data. The information here was that available in the AutoTCR as of August 2009.

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2009 Auto-TCR for Tank 241-T-204

Some of the reports herein may contain data that has not been reviewed or edited. The data will have been reviewed or edited as of the date that a Tank Interpretive Report (TIR) is prepared and approved. The TIR for this tank was approved on May 16, 2003.

Tank: 241-T-204

Sampling Events:

188

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- Analytical Methods and Procedures
- Best Basis Inventory Without Details
- Best Basis Inventory Without Details Supplementals
- Core Profiles
- Data Source Reference Index
- Data Source Reference List
- Description of Tank
- Dilution and Mixing Studies
- Dilution and Mixing Studies Index
- Major Transfers
- Means and Confidence Intervals
- Rheology Report
- Riser Configuration for Tank
- Sample Breakdown Diagrams
- Standard Acronym Definitions
- Tank Interpretive Report
- Tank Subsampling Scheme and Sample Description
- Tank Surface Level
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Constituent Groups:

- Anions
- Inorganics
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Data Dictionary to Reports in this Document

Report	Field	Description
Tank Interpretive Report		Interprets information about the tank answering a series of standard questions covering areas such as information drivers, tank history, tank comparisons, disposal implications, data quality and quantity, and unique aspects of the tank.
Description of Tank		Provides an executive summary of information about the tank including tank description, tank status, sampling dates, and service status.
	Tank Description	Section provides basic physical information for the tank.
	Type	Single or Double Shell Tank
	Constructed	Year(s) the tank was constructed
	In-Service	Month/Year the tank was put into service
	Diameter	Distance across the tank (in meters and feet)
	Operating Depth	Depth of allowable operation (referenced to the tank bottom) (in centimeters and feet)
	Design Capacity	Tank waste volume if filled to its operating capacity (in kiloliters and kilogallons)
	Bottom Shape	Shape of the tank bottom (flat or dish)
	Ventilation	Type of ventilation system on the tank (active or passive)
	Tank Status (as of date)	Section provides current status information for the tank. Date reported is the effective date of the most recent BBI effective date
	Volumes: Total Waste Volume Supernatant Volume Retained Gas Volume Ret Gas Sludge Volume Ret Gas Saltcake Volume Saltcake Liquid Volume Saltcake Solid Volume Sludge Volume	Tank vols from the most recent Best Basis Inventory (BBI) update. All BBI waste phases are listed, but the vol is left as NA if the BBI does not have an estimate for that phase. For example, tank AN-103 does not contain sludge, so the Sludge vol is reported as NA. In most DSTs, the saltcake liquid and saltcake solids are combined into a single total saltcake phase. These are reported under the saltcake solids category and the liquid vol is left blank, though liquid does exist in the tank. Retained gas vols are only reported if retained gas measurements were taken. It may be reported as associated with a particular phase (saltcake or sludge), or simply as the retained gas vol. All vols are listed in kL and kgal.

Data Dictionary to Reports in this Document

Report	Field	Description
	Surface Level (date)	Surface level provided in PCSACS that corresponds to the BBI volume effective date (effective date shown). Provided in centimeters and inches.
	PCSACS Surface Level (date)	Most recent surface level provided in the PCSACS database (effective date shown). Provided in centimeters and inches.
	Temperature (date range)	Minimum and maximum temperature of tank over the one year range preceding BBI volume effective date (range shown). Data is from the PCSACS database. Data is provided in degrees Celsius and Fahrenheit.
	Temperature (date)	Minimum and maximum temperature of tank (all thermocouples) of the most recent readings (date specified). Data is from PCSACS database. Data is provided in degrees Celsius and Fahrenheit.
	Integrity	Sound, assumed leaker, or known leaker. Based on Waste Tank Summary Report (HNF-EP-0182, latest Rev)
	Flammable Gas Facility Group	Waste group category as defined in RPP-10006. May be category A, B, or C.
	Sampling Dates: Core Samples Grab Samples Vapor Samples Auger Samples	The dates when sampling was performed on this tank as provided in the TWINS Tank Characterization Database, and Tank Vapor Database. If none are listed, no sampling has occurred in the tank since approximately 1992.
	Service Status	Section provides dates of common points of interest in the tank's history. Date is left blank or NA if the subject is not applicable.
	Declared Inactive	Date the tank was declared inactive.
	Interim Stabilization	Date interim stabilization was completed.
	Intrusion Prevention	Date intrusion prevention was completed.
Riser Configuration for Tank		Shows riser numbers, diameters, and a description of the risers.
Best Basis Inventory Without Details		Contains best basis inventory without details for the contents of the Hanford waste tanks.
	Analyte	The name of the constituent used for reporting purposes.

Data Dictionary to Reports in this Document

Report	Field	Description
	Waste Phase	Waste Phase is the phase of waste to which the concentration data is applicable (e.g., supernatant, saltcake, sludge, liquid, solid, etc.).
	Waste Type	Waste Type is the waste type as defined in HDW Rev. 4 or as defined by "templates" (e.g., SMMA1, SMMT1, etc.).
	Volume	Volume of the waste phase
	Concentration	Concentration reported in uCi/g, ug/g, uCi/mL, or ug/mL
	Inventory	Best Basis Inventory estimate, reported in kg or Ci
	Basis	The basis for the inventory value.
	Comment	Further information to clarify the information in the table.
Best Basis Inventory Without Details Supplementals		Contains best basis inventory without details for the contents of the Hanford waste tanks for the supplemental analytes not part of the BBI.
	Analyte	The name of the constituent used for reporting purposes.
	Waste Phase	Waste Phase is the phase of waste to which the concentration data is applicable (e.g., supernatant, saltcake, sludge, liquid, solid, etc.).
	Waste Type	Waste Type is the waste type as defined in HDW Rev. 4 or as defined by "templates" (e.g., SMMA1, SMMT1, etc.).
	Volume	Volume of the waste phase
	Concentration	Concentration reported in uCi/g, ug/g, uCi/mL, or ug/mL
	Inventory	Best Basis Inventory estimate, reported in kg or Ci
	Basis	The basis for the inventory value.
	Comment	Further information to clarify the information in the table.
Analytical Methods and Procedures		Lists procedure numbers and applicable analyses. Optionally displays appropriate analytes for each analyses.
	Analyte	The name of the constituent used for reporting purposes.

Data Dictionary to Reports in this Document

Report	Field	Description
	Method	Name assigned to the general group of laboratory analytical methods to which the current method belongs.
	Procedure	Laboratory procedure identifier.
Tank Subsampling Scheme and Sample Description		Contains information on samples taken in a sampling event including sample identification, sample weight, percent of sample recovery and sample physical appearance.
	Sample Location	Riser and surface level
	Sample Event	Identification number of a sampling event collected from a waste site. For cores, a core number, for supernate samples, a supernate sample number, and for surface samples, a surface sample number is provided.
	Amount	Mass of the sample in grams and/or volume of the sample in milliliters
	Aggregation Level	Description of the portion of the original tank sample represented by the current sample.
	Sample Characteristics	Description of the physical appearance of the sample.
Sample Breakdown Diagrams		Sample Breakdown Diagrams show the pedigree for each of the sample vials drawn from a tank waste material source, such as core sample, auger sample, or grab sample.
Rheology Report		Contains narrative, tables, and graphical displays of rheological data for this tank.
Analytical Results: Rheology		Contains results (primary/ duplicate/ triplicate/ average) of laboratory measurement of rheological properties of waste site samples. Grouped by analyte and procedure.
	Sample Number	Internal lab identifier assigned by the lab that analyzed the sample.
	Sample Location	Location from which sample was taken. Could be core and segment or riser identification depending on the sampling type.
	Sample Portion	Description of the portion of the original tank sample represented by the current sample.
	Result	Primary result of the analysis of the sample.
	Duplicate	Duplicate result of the analysis of the sample.
	Triplicate	Triplicate result of the analysis of the sample.

Data Dictionary to Reports in this Document

Report	Field	Description
	Average	Average of the primary, duplicate, and triplicate results.
Sample Attributes		Contains list of sample attributes for altered samples included in the report.
	Sample Number	Internal lab identifier assigned by the lab that analyzed the sample.
	Attribute Name	Name of the sample attribute.
	Attribute	Value and units or textual description of the sample attribute.
Rheology Measurements		Contains graphical displays of rheology data for this tank.
	Sample Number	Internal lab identifier assigned by the lab that analyzed the sample.
	Sample Location	Location from which sample was taken. Could be core and segment or riser identification depending on the sampling type.
	Sample Portion	Description of the portion of the original tank sample represented by the current sample.
	Result Type	Association of displayed data with a result (primary), duplicate, or triplicate measurement.
	Project Type	Internal identifier assigned in order to specify that the reported measurement was made on an unaltered tank sample (Unaltered), an altered tank sample (Altered), or a baseline sample in a project requiring sample alteration (Semi-Altered).
Means and Confidence Intervals		Contains statistical analysis data for tank content including means and variances.
	Analyte	The name of the constituent used for reporting purposes.
	Method	Name assigned to the general group of laboratory analytical methods to which the current method belongs.
	Mean	Average of the primary, duplicate, and triplicate results.
	df	Degrees of freedom
	LL	Lower 95% limit
	UL	Upper 95% limit
	Units	Measurement units

Data Dictionary to Reports in this Document

Report	Field	Description
Major Transfers		Waste Transfers summarizes the waste transfer history of the tank after January 1, 1994.
	Transfer Source	The description of the source of the waste that was transferred.
	Transfer Destination	The description of the destination of the waste that wast transferred.
	Waste Type	The description of the type of waste that was transferred.
	Time Period	The time over which the waste transfer occurred.
	Estimated Waste Volume (kL)	The estimated volume of waste transferred in kL.
	Estimated Waste Volume (kgal)	The estimated volume of waste transferred in kgal.
HTCE Surface Level		Surface level information as reported in the 1996 Historical Tank Contents Estimate (HTCE) report.
Tank Surface Level		Contains history of current tank waste surface level plot by year and month.
Tank Temperature Profile		Contains history of and current tank maximum temperature by year and month. Please note that tank temperature is not necessarily the same as waste temperature.
Core Profiles		Core Profiles are graphical depictions of physical properties of each segment of a core of tank waste.
Data Source Reference Index		Lists the documents found in the Data Source Access (DSA) database which are appropriate for this tank. Provides hyperlinks to both the DSA metadata and to the electronic documents themselves.
Data Source Reference List		Lists the documents found in the Data Source Access (DSA) database which are appropriate for this tank. Provides hyperlinks to both the DSA metadata and to the electronic documents themselves.

Data Dictionary to Reports in this Document

Report	Field	Description
Dilution and Mixing Studies		Lists the Dilution and Mixing Studies documents found in the Data Source Access (DSA) database which are appropriate for this tank. Provides hyperlinks to both the DSA metadata and to the electronic documents themselves.
Dilution and Mixing Studies Index		Lists the Dilution and Mixing Studies documents found in the Data Source Access (DSA) database which are appropriate for this tank. Provides hyperlinks to both the DSA metadata and to the electronic documents themselves.
Standard Acronym Definitions		Contains acronyms and abbreviations with definitions
	Acronym	Acronym or abbreviation
	Definition	Definition of an acronym or abbreviation

Tank Interpretive Report For 241-T-204

Tank Information Drivers

Question 1: What are the information drivers applicable to this tank? What type of information does each driver require from this tank? (Examples of drivers are Data Quality Objectives, Mid-Level Disposal Logic, RPP Operation and Utilization Plan, test plans and Letters of Instruction.) To what extent have the information and data required in the driving document been satisfied to date by the analytical and interpretive work done on this tank?

There are no current information drivers for tank 241-T-204.

Closed and previously addressed issues for tank 241-T-204 include the *Tank Safety Screening Data Quality Objective* (Safety Screening DQO) (Dukelow et al. 1995), *Memorandum of Understanding for the Organic Complexant Issue Data Requirements* (Organic Complexant DQO) (Schreiber 1997), and *Data Quality Objective to Support Resolution of the Organic Solvent Safety Issue* (Organic Solvent DQO) (Meacham et al. 1997).

Closed Issues and Issues Previously Addressed:

The data needed to screen the waste in tank 241-T-204 tank for potential safety problems are documented in *Tank Safety Screening Data Quality Objective* (Safety Screening DQO) (Dukelow et al. 1995). These potential safety problems are exothermic conditions in the waste, flammable gases in the waste and/or tank headspace, and criticality conditions in the waste. Data from an April 1997 core-sampling event of tank 241-T-204 was used to address the Safety Screening DQO. The Safety Screening DQO requires two samples from widely spaced risers. One core sample was taken from each of the four T-200 series tanks to meet this requirement. Each of the tanks contains similar wastes.

Tank 241-T-204 was sampled from riser 3 on March 27, 1997. The first requirement outlined in the Safety Screening DQO (Dukelow et al. 1995) is to ensure that there are not sufficient exothermic constituents (organic or ferrocyanide) in tank 241-T-204 tank to pose a safety hazard. Because of this requirement, energetics in tank 241-T-204 waste was evaluated. The Safety Screening DQO required that the waste sample profile be tested for energetics every 24 cm (9.5 in.) to determine whether the energetics exceeded the safety threshold limit. The threshold limit for energetics is 481 J/g on a dry weight basis.

Results obtained using differential scanning calorimetry (DSC) indicated that no sample obtained from tank 241-T-204 had mean exothermic reactions (on a dry-weight basis) exceeding the Safety Screening DQO limit. Tank 241-T-204 tank did not have any measurable energetics; therefore, no confidence interval could be calculated. These results indicate there is no energetics safety issue associated with this tank. All water content (percent water) measurements were greater than 50 percent, well above the 17 percent notification limit.

Headspace measurements were taken from sampling riser 3 of tank 241-T-204 before taking the push core samples. Flammable gas was not detected in the tank headspace (0 percent of the lower flammability limit [LFL]). These results are below the safety screening limit of 25 percent of the LFL, indicating no flammable gas safety issue associated with this tank.

The Safety Screening DQO threshold for criticality, based on the total alpha activity, is 1 g/L. Because total alpha activity is measured in μCi/g instead of g/L, the 1 g/L-limit is converted into units of μCi/g by assuming that all alpha decay originates from ^{239}Pu. The safety limit threshold is 1 g ^{239}Pu per liter of waste.

Assuming that all alpha is from ^{239}Pu and assuming a typical density of 1.27 g/mL, 1 g/L of ^{239}Pu is 48.4 μCi/g of alpha activity. The maximum total alpha result for tank 241-T-204 was 0.208 μCi/g. Therefore, the potential for a criticality event is extremely low and not a concern for this tank.

The *Evaluation of Tank Data for Safety Screening* (Reynolds et al. 1999) concluded that the sampling and analysis performed in this tank were consistent with the requirements of the Safety Screening DQO.

The data required to support the issue of organic complexants are documented in *Memorandum of Understanding for the Organic Complexant Safety Issue Data Requirements* (Schreiber 1997). Energetics by DSC and moisture analyses were conducted to address the organic complexants issue. All moisture analyses show the water content for this tank is greater than 50 percent. Because no exotherms were detected by DSC analyses for tank 241-T-204, no further data were required to address the issue. According to the logic in Schreiber (1997), this tank is safe with respect to the organic complexants issue. The organic complexant issue was closed for all single-shell tanks (SSTs) in 1998 (Owendoff 1998).

The data required to support the organic solvent screening issue are documented in the *Data Quality Objective to Support Resolution of the Organic Solvent Safety Issue* (Meacham et al. 1997). The Organic Solvent DQO requires tank headspace samples be analyzed for total nonmethane organic compounds to determine whether the organic extractant pool in the tank is a hazard. The purpose of this assessment is to ensure that an organic solvent pool fire or ignition of organic solvents cannot occur. Analytical results showed no organics of any type were present in the headspace for tank 241-T-204. However, this tank has not been sampled according to the protocols described in Meacham et al. (1997); therefore, no safety designation with regard to the organic solvent issue can be made. The organic solvent safety issue was closed for all tanks in August 2000 (Huntoon 2000).

The results of all analyses performed to address potential safety issues showed that primary analyte(s) did not exceed safety decision threshold limits. The waste had little exothermic activity, had low total alpha concentration, no hazardous or flammable vapors were detected, and essentially no heat from radionuclide decay. The composition of the waste generally matched that expected from process history and the results from the B-200 series tanks. Table 1-1 summarizes the analytical results.

Table 1-1. Summary of Technical Issues.

Issue	Sub-issue	Result
Safety screening	Energetics	No exotherms approaching or exceeding the threshold value were observed in any sample.
	Flammable gas	Vapor measurement reported 0 percent of LFL (combustible gas meter).
	Criticality	All analyses well below 41-µCi/g total alpha.
Organic Complexant	Total organic carbon (TOC)	All measurements are less than 500 μg/g (wet).
	Water content	All measurements are greater than 50 percent.

Several safety issues have been closed, and the tank was not sampled for these issues. The flammable gas safety issue has been closed for all tanks (Roberson 2001). The toxicity issue of the Hazardous Vapor DQO (Osborne and Buckley 1995) has been closed (Hewitt 1996).

Heat Load Estimate:

A factor in assessing the safety of tank waste is the heat generation and temperature of the waste. The tank heat load based on the Best-Basis Inventory, as of January 1, 2001 (See Standard Report *Best-Basis Inventory Without Details),* decayed to January 1, 2001, was 0.01 W (0.04 Btu/hr); see Table 1-2. Agnew et al. (1997a) estimated the tank heat load to be 0.30 W (1.02 Btu/hr) and Kummerer (1995) estimated the tank heat load to be 14.7 W (50 Btu/hr). All of these estimates are less than the 11,700 W (40,000 Btu/hr) operating specification that requires temperature monitoring for SSTs (CH2M HILL 2002).

Table 1-2. Heat Load Estimate Based on the Best-Basis Radionuclide Inventory.

Radionuclide	Waste Inventory (Ci)	Decay Heat Generation[1] (W/Ci)	Heat Load (Watts)
^{90}Sr	7.18E-01	0.00669	0.005
^{137}Cs	1.21E+00	0.00472	0.006
Total			0.01

Note: [1]Includes daughter isotopes.

Tank History

Question 2: What is known about the history of this tank as it relates to waste behavior?

The 241-T Tank Farm is a first generation tank farm located in the 200 West Area T Tank Farm on the Hanford Site. Built between 1943 and 1944, it consists of four 208 kL (55 kgal) tanks. Tank 241-T-204 is 6.1 m (20 ft) in diameter, and has a capacity of 208 kL (55 kgal). Additional

tank descriptive material is located in the tank 241-T-204 *Description of Tank and Riser Configuration Table* Standard Reports.

Tank 241-T-204 is located in the 200 West Area T Tank Farm on the Hanford Site. Tank 241-T-204 is not part of any tank cascade. Tank 241-T-204 is connected to tanks 241-T-202 and 241-T-203 by a 7.6-cm (3-in.)-diameter line that enables waste transfers from one tank to the other. Because there is no vertical offset in the connection from one tank to the others, the tanks are not cascaded but rather tied together. This tank went into service in 1952, receiving lanthanum fluoride (224) waste from T-Plant. Tank 241-T-204 was filled later that year and transferred supernatant to tank 241-T-203.

Tank 241-T-204 is sound (Hanlon 2002) and was declared inactive in 1976. The tank was interim stabilized in 1981; intrusion prevention (interim isolation) was also completed in 1981.

Tank Comparisons

Question 3: What other tanks have similar waste types and waste behaviors, and how does knowledge of the similar tanks contribute to the understanding of this tank?

The Best-Basis Inventory (BBI) for tank 241-T-204 incorporates waste-type templates that correlate with the waste types in the tank. Templates are based on sampling data from tanks that contain the same waste type as tank 241-T-204, supplemented with Hanford Defined Waste (HDW) model (Agnew et al. 1997a) data, and contribute significantly to the understanding of the concentrations of certain constituents in the tank 241-T-204 waste. Tank 241-T-204 currently contains 140 kL (37 kgal) of sludge and supernatant waste.

According to the HDW model and BBI, tank 241-T-204 also contains post-1949 sludge waste. Other tanks with a post-1949 inventory are 241-B-202, 241-B-203, 241-B-204, 241-T-110, 241-T-111, 241-T-112, 241-T-202, and 241-T-203.

Analysis of process history information suggests that the waste in tank 241-T-204 is similar to the waste in other T-200 series tanks. It is also similar in composition to the B-200 series tanks. Both waste tank groups received lanthanum fluoride (224) waste. The B-200 series tanks received lanthanum fluoride (224) from B-Plant; the T-200 series tanks received it from T-Plant. The composition of this waste is distinctive from the other wastes in SSTs. It has relatively high (weight percent) concentrations of lanthanum, bismuth, and manganese present, and low concentrations of fission products (usually near or below detection limits). The separations process did not vary from plant to plant, and no other transactions took place between these tanks and the rest of tank farms to alter or confound the waste stream composition. Therefore, the variation in the waste in the T-200 series tanks is believed to be relatively small.

Disposal Implications

Question 4: Given what is known about the waste properties and waste behaviors in this tank, what are the implications of the waste properties and behaviors to the waste retrieval/processing methodologies and equipment selection?

The waste in SST 241-T-204 is post-1949 sludge waste. The projected retrieval sequence, assumed methodologies, and delivery of tank waste are described in Case 2 scenario in current planning documents: *Tank Farm Contractor Operation and Utilization plan* (Kirkbride et al. 2001) and *Single-Shell Tank Retrieval Sequence and Double-Shell Tank Space Evaluation* (Hohl et al.2001). The long-lived mobile radioisotopes that are categorized as Long-Term Health Risk contaminants include ^{14}C, ^{79}Se, ^{99}Tc, ^{129}I, ^{234}U, ^{235}U, and ^{238}U (Banning 2001). These analytes and other contaminants of concerns (Hohl et al. 2001) are listed in Table 4-1. Additional analyses for these constituents may be required prior to waste retrieval and tank closure.

Sixty-seven of the SSTs are known or suspected to have leaked although tank 241-T-204 is listed as sound (Hanlon 2002). All of the SSTs have exceeded their design lives. Because of the questionable integrity of this tank, the use of large amounts of liquid to mobilize or dissolve the waste will not be permitted. Therefore, the current approach is to demonstrate retrieval technologies that use very little, if any, liquids to mobilize and retrieve the waste. Any liquid that is used will be small in volume and used in a confined manner. Three waste retrieval technologies that are being considered/demonstrated are combined crawler-based confined sluicing and robotic technologies, sluicing low-volume density gradient saltcake dissolution, and AEA Technology Power Fluidics™. Specific plans for retrieving tank 241-T-204 will be developed in the future.

The headspace data associated with the sampling event in 1997 reported 0 percent of the LFL for flammable gases, 0 parts per million (ppm) for ammonia, and 0 ppmv of organic vapor. The extent to which waste retrieval operations, such as mixing and pumping, will cause emissions of ammonia and organic vapors should be considered.

No organic layer was observed in tank 241-T-204 during the 1997 sampling event.

Table 4-1. Contaminants of Concern (Retrieval and Disposal Considerations).

Airborne			Chemical	Ground Water
Analyte	**Analyte**	**Analyte**	**Analyte**	**Analyte**
^{94}Nb	^{239}Pu	^{243}Cm	NO_2	^{14}C
^{126}Sn	^{240}Pu	^{244}Pu	NO_3	^{79}Se
^{232}Th	^{241}Pu	^{244}Cm	Cr (VI)	^{99}Tc
^{236}Pu	^{241}Am	^{245}Cm		^{129}I
^{237}Np	^{242}Pu	^{246}Cm		^{238}U
^{238}U	^{242m}Am	^{247}Cm		
^{238}Pu	^{243}Am	^{248}Cm		

Note: For tank 241-T-204 analyte inventory values, see the *Best-Basis Inventory Without Details* Standard Report.

Scientists Assessment of Data Quality and Quantity

Question 5: What additional information about the waste, if any, is needed to satisfy tank waste issues described in question #1 of this Tank Interpretive Report? How should the information be obtained (new samples, archive analysis, mathematical models, other)? What is the quality of the samples and analytical results obtained for this tank? Are clarifications or explanations needed for standard report tables and figures?

Sampling and Analysis

All current applicable DQOs and waste issues have been addressed for this tank, and no additional sampling and analyses are necessary to satisfy current safety issue requirements. Prior to delivery of the waste to the Waste Treatment Plant (Hohl et al. 2001), existing data and archived samples will be evaluated to determine if additional sampling will be necessary to address the applicable Disposal DQOs.

Core samples and vapor phase samples were taken to satisfy the requirements of the *Tank Safety Screening Data Quality Objective* (Dukelow et al. 1995). Vapor phase measurements were also used to satisfy the requirements of the *Memorandum of Understanding for the Organic Complexant Safety Issue Data Requirements* (Schreiber 1997) and the *Data Quality Objective to Support Resolution of the Organic Solvent Safety Issue* (Meacham et al. 1997). The sampling and analyses were performed in accordance with the *Tank 241-T-204 Push Mode Core Sampling and Analysis Plan* (Winkelman 1997). There was also a letter of instruction regarding the analysis of the composite core samples (Hall 1997). Further discussions of the sampling and analysis procedures can be found in the *Tank Characterization Reference Guide* (DeLorenzo et al. 1994).

Using the available prior information and assuming the similarity observed between the B-200 tanks and the T-200 series tanks, only one core sample was taken from each of the T-200 tanks.

Core sampling was used because of the depth of the waste and the expectation that a full vertical profile of the waste would be obtained from each tank. The expected depth of the waste ranged from 2.7 m to 4.9 m (105 to 194 in.) The readings taken at the risers at the time of sampling largely supported these estimates.

One core sample was collected from tank 241-T-204 on March 27, 1997 from riser 3. The sample was extruded at the 222-S Laboratory during April 1997. The solid samples were divided into subsegments, homogenized, subsampled, and composited for further laboratory analyses and archiving. Analyses were performed on both the segment and core composite level.

All reported analyses were performed according to approved laboratory procedures.

Data Quality

The four quality control (QC) parameters assessed in conjunction with the T-200 series tank samples were standard recoveries, spike recoveries, duplicate analyses (relative percent differences), and blanks. The QC criteria are specified in the sampling and analysis plan for this tank (Winkelman 1997).

The usual QC assessment includes an evaluation of the appropriate standard recoveries, spike recoveries, duplicate analyses, and blanks that are performed in conjunction with the chemical analyses. All pertinent QC tests were conducted on 1997 core samples, allowing a full assessment of the accuracy and precision of the data. The sampling and analysis plan (Winkelman 1997) established specific criteria for all analytes. Sample and duplicate pairs with one or more QC results outside the specified criteria were identified by footnotes in the data summary tables.

The standard recoveries for the large majority of the analytes examined in tank 241-T-204 samples were within acceptable laboratory operating parameters. Spike recoveries were often invalid for analytes present in very high quantities, such as bismuth, chromium, iron, lanthanum, manganese, and sodium. The spike concentration was often too low with regard to the sample concentration to be distinguished. Post digestion spikes run on the samples would show the results to be acceptable. Some of the total alpha spike recoveries are outside of the QC thresholds. Additional assays attribute this behavior to matrix interference.

Relative percent differences (RPDs) outside of the specified QC bounds were observed for several analytes in tank 241-T-204. Total alpha, ^{90}Sr, and phosphate were the analytes most frequently observed having elevated RPDs. Absorbance from alpha solids on the sample mount (self-shielding) was identified as a potential issue for the total alpha measurement, and sample heterogeneity was identified as the cause of the lack of reproducibility for the other analytes. Additionally, analytes near the detection limits are subject to larger RPDs.

Finally, a few samples had results that exceeded the criterion for preparation blanks. The analytes observed were those usually associated with cross contamination from sample preparation and/or glassware (sodium, calcium, and nitrate). Slightly elevated total alpha measurements were observed in the blanks. However, in all cases, the concentrations observed were small compared to the sample concentrations. Therefore, contamination was not considered a problem.

In summary, the majority of QC results were within the boundaries specified in the SAPs. The discrepancies noted in the analytical reports and footnoted in the *Analytical Results* standard report should not impact data validity or use.

Clarification and Explanation of Data Tables and Figures

The *241-T-204 Analytical Results* Standard Report: Data used for the BBI assessment and inventory has been reviewed as directed in Sasaki (2001).

The *241-T-204 HTCE Surface Levels* Standard Report: This graph reports the historical waste transfer activity for tank 241-T-204 on a quarterly basis and does not represent a complete waste transfer history for the tank. The transfer notations at the top of the graph are only representative and are not an exhaustive listing of waste transfers to and from the tank. For a more complete listing of historical waste transfers for tank 241-T-204, see Agnew et al. (1997b).

Unique Aspects of the Tank

Question 6: What are unique chemical, physical, historical, operational or other characteristics of this tank or its contents?

There are no unique chemical, physical, historical, operations or other characteristics of this tank or its contents.

While not unique, the following physical description of the tank may be of interest. A photograph of tank 241-C-204 was taken August 3, 1989 (Brevick et al. 1997). Tank 241-T-204 appears to lack any free liquid and has a dried, cracked gray-brown or gray-black surface. A temperature probe, saltwell screen, and a manual tape are also visible in the photograph.

The 1997 core sampling segments were described as black solids with a texture resembling a wet sludge slurry or a wet sludge. Some segments were described as black solids with a texture resembling a dry sludge. (See the *Subsampling Scheme and Sample Description* Standard Report.)

Means and Confidence Intervals

Question 7: What statistical model was used to generate the means and confidence intervals? What data was included in the calculations?

A nested analysis of variance (ANOVA) model was fit to the laboratory sample data. Mean analyte concentrations, and 95 percent confidence intervals on the mean, were estimated using results from the ANOVA. Two variance components were estimated and used in the computations. The variance components represent concentration differences between laboratory samples and between analytical replicates.

The model is:

$$Y_{ij} = \mu + L_i + A_{ij},$$

$$i=1,2,...,a;\ j=1,2,...,n_i;$$

where:

Y_{ij} = concentration from the jth analytical result from the ith riser,

μ	=	the mean,
L_i	=	the effect of the ith laboratory sample,
A_{ij}	=	the analytical error,
a	=	the number of laboratory samples, and
n_i	=	the number of analytical results from the ith laboratory sample.

The variable L_i is a random effect. This variable and A_{ij} are assumed to be uncorrelated and normally distributed with means zero and variances $\sigma^2(L)$, and $\sigma^2(A)$, respectively.

The restricted maximum likelihood method (REML) was used to estimate the mean concentration and standard deviation of the mean for all analytes that had 50 percent or more of their reported values greater than the detection limit. The mean concentrations and standard deviations of the mean were used to calculate the 95 percent confidence intervals. Each table in the *241-T-204 Means and Confidence Intervals Standard Report* gives the estimate of the mean, degrees of freedom, and confidence interval on the mean.

Some analytes had results that were below the detection limit. In these cases, the value of the detection limit was used for nondetected results. For analytes with a majority of results below the detection limit, a simple average is reported.

The lower and upper limits, LL (95%) and UL (95%), of a two-sided 95% confidence interval on the mean were calculated using:

$$\text{LL (95\%)}: \hat{\mu} - t_{(df,\ 0.025)} \times \hat{\sigma}(\hat{\mu})$$

$$\text{UL (95\%)}: \hat{\mu} + t_{(df,\ 0.025)} \times \hat{\sigma}(\hat{\mu}).$$

In these equations, $\hat{\mu}$ is the REML estimate of the mean concentration, $\hat{\sigma}(\hat{\mu})$ is the REML estimate of the standard deviation of the mean, and $t_{(df,\ 0.025)}$ is the quantile from Student's t distribution with *df* degrees of freedom. The degrees of freedom are the number of laboratory samples with data minus one. In cases where the lower limit of the confidence interval was negative, it was reported as zero.

The means for each data set are listed separately in the *241-T-204 Means and Confidence Intervals* Standard Report. The *Tank 241-T-204 95 Percent Two-Sided Confidence Interval for the Mean Concentration for Solid 1997 Core Composite* table refers to data generated from core188 and the *Tank 241-T-204 95 Percent Two-Sided Confidence Interval for the Mean Concentration for Solid 1997 Core Segment* table refers to data generated from core188 and the segment and subsample solid results. No liquid data are available for tank 241-T-204.

Best-Basis Inventory Derivation

Question 8: What is the source data used to derive this tank's Best-Basis inventories by mass (kg) and activity (Ci) for the standard list of 24 chemicals and 46 radionuclides? (For the latest Best-Basis Inventory derivation, see the link to the Recent Best Basis Derivation Text below. Due to periodic updates, the Recent Best Basis Derivation Text may not be consistent with other questions in the Tank Interpretive Report.)

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Best Basis Inventory Derivation Text: Tank 241-T-204

The **Best-Basis Inventory (BBI)** effort involves developing and maintaining waste tank inventories comprising 25 chemical and 46 radionuclide components in the 177 Hanford Site underground storage tanks. These best-basis inventories provide waste composition data necessary as part of the River Protection Project process flowsheet modeling work, safety analyses, risk assessments, and system design for waste retrieval, treatment, and disposal operations.

Development and maintenance of the BBI is an on-going effort. A revised correlation of the tank volume to height was recently completed which better accounts for the volume of the knuckle region in the tank (Barker 2004). Based on this correlation, the sludge volume estimate decreased from previous estimate. As a result, a re-evaluation of the BBI for tank 241-T-204 as of July 1, 2004 was performed and is documented in the following text. The following information was used in this evaluation:

- 2003 analysis of 1997 archive solids core composite (Cooke 2003).
- Process knowledge vector of the TOC equivalent to the measured oxalate.
- Statistical means based on analytical data from the March-April 1997 core samples from tank 241-T-204 (Nuzum 1997).
- Template for lanthanum fluoride finishing waste (224-2) sludge, based on input from analytical results from other tanks and revision 5 of the Hanford Defined Waste (HDW) model (Place and Higley 2004).
- Process knowledge estimate for total polychlorinated biphenyls (PCB) (Nguyen 2004).

Table 8-1 represents how the available data are used to derive best-basis inventories for tank 241-T-204.

Table 8-1. Tank 241-T-204 Best-Basis Inventory Source Data.

Waste Phase	Waste Type	Applicable Concentration Data[1]	Associated Density (g/mL)	Associated Multiplier	Associated Volume
Sludge[2]	224-2	1997 core solids segment mean (S/T204/002)	1.18	1.000	136 kL (36 kgal)
		1997 core composite solids mean (S/T204/003)	1.21	1.000	
		Process Knowledge of the TOC equivalent to the oxalate (P/T204/002)	1.21	1.000	
		2003 Analysis of Archived 1997 Core Composite (S/T204/004)	1.33	0.697	
		224-2 sludge template (TS/U204/009)	1.19	1.037	
		224-2 sludge PCBs (P/T204/003)	1.18	1.000	
Total Tank[3]					136 kL (36 kgal)

Notes:

[1]Vector handles, shown in parentheses, are unique serial identifiers for the vectors used in the BBIM database.

[2]The sludge waste phase includes both solids and interstitial liquid; the interstitial liquid volume is estimated to be 23 kL (6 kgal).

[3]Total volume as of July 1, 2004.

According to Johnson (2003), tank 241-T-204 was connected in a cascade with tanks 241-T-203 and 241-T-202. Solids contained in the 224-T Concentration building waste from the lanthanum fluoride finishing process were allowed to settle in tanks 241-T-204 through 241-T-202. Liquid was gravity discharged from the last tank in the cascade (tank 241-T-202) to cribs. The sludge waste type in Table 8-1 corresponds to this lanthanum fluoride finishing (224) waste type which was also predicted in Agnew et al. (1997). Waste phases in Table 8-1 were based on core sampling extrusion results, analytical results, and process history. Extrusion observations and segment analyte concentrations show sludge solids.

The tank waste volume is 137 kL (36 kgal) based on a July 1, 2003 ENRAF measurement of 193.29 inches. This is consistent with readings taken July 1, 2004. At the time of tank sampling (March 27, 1997), the tank's manual tape surface level measurement was 194 inches (CH2M HILL 2001). The difference between the ENRAF and manual tape measurement is probably caused by a surface depression or instrument calibration and is not significant. When the manual tape surface level value is averaged with two sludge level measurements (LMHC 1997) the estimated level is 192.2 inches and corresponds to a sludge volume in the tank was 136 kL (36 kgal) based on Barker (2004). Based on the sludge level measurements, a value of 136 kL (36 kgal) was chosen as the tank waste volume.

The sample analyses used in the sludge templates were assumed to represent both solids and interstitial liquid. As a result, a separate interstitial liquid inventory was not determined for the 224-2 sludge waste in tank 241-T-204. Assuming an average in-tank sludge porosity of 0.17 (Conner 2003), the volume of interstitial liquid in the sludge is estimated to be 23 kL (6 kgal).

The tank was removed from service in 1976 and was interim stabilized in August 1981 (Hanlon 2001); therefore, sample data from the 1997 core samples are considered representative of the tank. Solids data from the analysis of the core segments and core composites from the 1997 core samples were used in this BBI effort. In addition, a process knowledge vector was created for the TOC in the solids because the composite mean of the TOC was low when compared to the composite mean oxalate value. The TOC value was calculated by multiplying the oxalate mean by 24/88 (equivalent carbon content). The quality of the oxalate data appeared slightly better than the quality of the TOC data and was therefore chosen for use in the BBI.

An archived composite of segments from core 188 taken in 1997 was analyzed in fiscal year (FY) 2003 for a number of radionuclides. Most of these had not been analyzed previously. The segments had dried out significantly while sitting in storage so a multiplier was used to adjust the concentrations back to the 1997 density and water conditions:

Multiplier = (1.18/1.33)*(1-0.750)/(1-0.682) = 0.697.

Data used in the BBI for tank 241-T-204 were from the 1997 core sampling event and were selected in the order: segment-level means, core-composite means analyzed in 1997, the core composite analyzed in 2003, then template data. Detected values were selected over less-than values. Template values were used for constituents below the detection limits for sample data or constituents not measured from the sampling events. Templates are based on sampling data from tanks that contain the same waste type as tank 241-T-204, supplemented with revision 5 HDW model data (Higley et al. 2004). Multipliers were used to scale the template vectors to the sample data using the sample-based mean weight-percent water and mean density. Two templates were available for modeling the 224 waste type solids: *224-1 waste pre-1949* (TS/U204/008) and *224-2 waste post-1949* (TS/U204/009). Based on the bismuth and lanthanum concentrations in the sample data for tank 241-T-204, the 224-2 *post-1949* (TS/U204/009) template was selected. For the 224-2 solids template, the mean weight-percent water of 75.0 and the mean density of 1.18 g/mL for the segment solids were used to obtain a multiplier of 1.037. A more detailed description of template data is found in Place and Higley (2004).

The 1997 core solids segment density value (1.18 g/mL) is the average measured 1997 core segment bulk density value. The 1997 core solids composite density value (1.21 g/mL) is a single (and only) measured 1997 core composite bulk density value. The 2003 density of the 1997 core composite (1.33 g/ml) is also based on a single measurement. The density value for the template vector was taken from the template for the respective waste type.

The inventories in this BBI were developed in accordance with the BBI rules in Field and Bowen (2003) with one exception. The 2003 analysis of ^{241}Am from the archived core was selected

over the original analysis since the method used was Alpha Energy Analysis as opposed to Gamma Energy Analysis. All other inventory calculations were performed using the Best-Basis Inventory Maintenance (BBIM) Tool. The updated BBI values for tank 241-T-204 are shown in the *Best-Basis Inventory Without Details* standard report. Radionuclides in the *Best-Basis Inventory Without Details* standard report are decay-corrected to January 1, 2008.

The inventories for the uranium isotopes in the sludge were calculated using total uranium values (as calculated from the 2003 results for ^{238}U) and distributed using the sludge template ratios for the isotopes. The inventories for plutonium, americium, and curium in the sludge were calculated using the 2003 sample results for ^{241}Am and $^{239/240}$Pu and distributed using the sludge template ratios for those isotopes.

PCBs: A total PCB inventory is estimated per guidelines established in Nguyen (2004). A default PCB concentration of 25 µg/g (wet weight) was used for the solids, since current sample data was not available. The 1997 segment density was applied to the PCB data.

Changes Since Previous BBI: This update revised the inventories based on a more accurate estimate of the volume of the tank waste based on Barker (2004). The volume of the sludge decreased. The inventory of most constituents in the sludge decreased as a result of the decrease in volume. No change was made to the concentration of the analytes

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Description of Tank 241-T-204

TANK DESCRIPTION	
Type	Single Shell
Constructed	1943-1944
In-service	1952
Diameter	6.1 m (20 ft)
Operating Depth	711.2 cm (280 in)
Design Capacity	208 kL (55 kgal)
Bottom shape	dish
Ventilation	Passive
TANK STATUS (as of 7/1/2004)	
Total Waste Volume	136 kL (36 kgal)
Supernatant Volume	NA
Retained Gas Volume	NA
Retained Gas - Sludge Volume	NA
Retained Gas - Salt Cake Volume	NA
Salt Cake Liquid Volume	NA
Salt Cake Solid Volume	NA
Sludge Volume	136 kL (36 kgal)
Surface Level (7/1/2004)	490.4 cm (193.1 inches)
PCSACS Surface Level (11/13/2005)	490.8 cm (193.2 inches)
Temperature (7/1/2003 - 6/30/2004)	13.3°C - 21.1°C (56.0°F - 70.0°F)
Temperature (11/13/2005)	16.5°C - 19.4°C (61.7°F - 66.9°F)
Integrity	Sound
Waste Group Designation	B
SAMPLING DATES (See Note Below)	
Core Samples	3/27/1997 - 4/11/1997
SERVICE STATUS	
Declared Inactive	1976
Interim Stabilization	August 1981
Intrusion Prevention	August 1981

Note: the date(s) shown here are taken from the sample chain of custody documents. The date(s) may be different than the dates indicated on the Core Profile standard report.

Riser Configuration for Tank 241-T-204 Risers[1,2,3]

Number	Diameter (Inches)	Description and Comments
R1	4	Not Used, Weather Covered
R2	12	Salt Well, Weather Covered
R3*	12	Flange W/ Shield Plug
R4	4	Liquid Level Reel
R5	4	Flange, Below Grade
R6*	12	Air Filter
R7*	12	B-222 Observation Port
R8	4	Thermocouple
N1	3	Line V-717 Blanked In Diversion Box 241-T-252
N2	3	Line V-718 Blanked In Diversion Box 241-T-252
N3	3	Not Used
N4	3	Inlet

Notes: [1]Lipnicki(1997)
[2]Alstad(1993)
[3]H-2-73069, Rev.2

* Denotes risers tentatively available for sampling(Lipnicki 1997)

Tank 241-T-204 Best Basis Inventory Without Details
Decayed To: January 1, 2008
Effective Date: July 1, 2004
Published On: February 29, 2008
Best Basis Derivation

Analyte	Waste Phase	Waste Type	Volume	Concentration	Inventory	Basis	Comment
Al	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	5.36E+ 01 μg/g	8.82E+ 00 kg	S	
Al	**Total**		**136 kL**		**8.82E+ 00 kg**		
Bi	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	5.15E+ 04 μg/g	8.47E+ 03 kg	S	
Bi	**Total**		**136 kL**		**8.47E+ 03 kg**		
Ca	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	2.06E+ 02 μg/g	3.39E+ 01 kg	S	
Ca	**Total**		**136 kL**		**3.39E+ 01 kg**		
Cl	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	6.73E+ 02 μg/g	1.11E+ 02 kg	S	
Cl	**Total**		**136 kL**		**1.11E+ 02 kg**		
TIC as CO3	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	6.98E+ 03 μg/g	1.15E+ 03 kg	S	
TIC as CO3	**Total**		**136 kL**		**1.15E+ 03 kg**		
Cr	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	4.49E+ 03 μg/g	7.39E+ 02 kg	S	
Cr	**Total**		**136 kL**		**7.39E+ 02 kg**		
F	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	5.94E+ 03 μg/g	9.77E+ 02 kg	S	

Analyte	Waste Phase	Waste Type	Volume	Concentration	Inventory	Basis	Comment
F	**Total**		**136 kL**		**9.77E+ 02 kg**		
Fe	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	4.04E+ 03 μg/g	6.64E+ 02 kg	S	
Fe	**Total**		**136 kL**		**6.64E+ 02 kg**		
Hg	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	0.00E+ 00 μg/g	0.00E+ 00 kg	E	
Hg	**Total**		**136 kL**		**0.00E+ 00 kg**		.
K	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	6.12E+ 03 μg/g	1.01E+ 03 kg	S	
K	**Total**		**136 kL**		**1.01E+ 03 kg**		
La	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.15E+ 04 μg/g	1.89E+ 03 kg	S	
La	**Total**		**136 kL**		**1.89E+ 03 kg**		
Mn	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.41E+ 04 μg/g	2.31E+ 03 kg	S	
Mn	**Total**		**136 kL**		**2.31E+ 03 kg**		
Na	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.18E+ 04 μg/g	5.23E+ 03 kg	S	
Na	**Total**		**136 kL**		**5.23E+ 03 kg**		
Ni	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	2.42E+ 02 μg/g	3.97E+ 01 kg	S	
Ni	**Total**		**136 kL**		**3.97E+ 01 kg**		
NO2	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	2.84E+ 02 μg/g	4.67E+ 01 kg	S	
NO2	**Total**		**136 kL**		**4.67E+ 01 kg**		
NO3	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	5.52E+ 04 μg/g	9.08E+ 03 kg	S	

Analyte	Waste Phase	Waste Type	Volume	Concentration	Inventory	Basis	Comment
NO3	**Total**		**136 kL**		**9.08E+ 03 kg**		
Oxalate	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.33E+ 03 μg/g	2.19E+ 02 kg	S	
Oxalate	**Total**		**136 kL**		**2.19E+ 02 kg**		.
Pb	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.10E+ 02 μg/g	5.10E+ 01 kg	S	
Pb	**Total**		**136 kL**		**5.10E+ 01 kg**		
PO4	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	8.11E+ 03 μg/g	1.33E+ 03 kg	S	
PO4	**Total**		**136 kL**		**1.33E+ 03 kg**		
Si	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.50E+ 03 μg/g	2.46E+ 02 kg	S	
Si	**Total**		**136 kL**		**2.46E+ 02 kg**		
SO4	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.63E+ 02 μg/g	5.97E+ 01 kg	S	
SO4	**Total**		**136 kL**		**5.97E+ 01 kg**		.
Sr	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	4.99E+ 02 μg/g	8.20E+ 01 kg	S	
Sr	**Total**		**136 kL**		**8.20E+ 01 kg**		
TOC	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.63E+ 02 μg/g	5.97E+ 01 kg	E	
TOC	**Total**		**136 kL**		**5.97E+ 01 kg**		
UTOTAL	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	9.97E-1 μg/g	1.80E-1 kg	S	
UTOTAL	**Total**		**136 kL**		**1.80E-1 kg**		Calculated from U238
Zr	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	2.69E+ 00 μg/g	4.35E-1 kg	E	

Analyte	Waste Phase	Waste Type	Volume	Concentration	Inventory	Basis	Comment
Zr	**Total**		**136 kL**		**4.35E-1 kg**		.
3H	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.30E-9 μCi/g	5.34E-7 Ci	E	
3H	**Total**		**136 kL**		**5.34E-7 Ci**		.
14C	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	2.02E-7 μCi/g	3.27E-5 Ci	E	
14C	**Total**		**136 kL**		**3.27E-5 Ci**		.
59Ni	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	5.29E-8 μCi/g	8.56E-6 Ci	E	
59Ni	**Total**		**136 kL**		**8.56E-6 Ci**		.
60Co	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	7.40E-8 μCi/g	1.20E-5 Ci	E	
60Co	**Total**		**136 kL**		**1.20E-5 Ci**		.
63Ni	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	4.45E-6 μCi/g	7.19E-4 Ci	E	
63Ni	**Total**		**136 kL**		**7.19E-4 Ci**		.
79Se	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	2.06E-8 μCi/g	3.33E-6 Ci	E	
79Se	**Total**		**136 kL**		**3.33E-6 Ci**		
90Sr	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.57E-3 μCi/g	5.88E-1 Ci	S	
90Sr	**Total**		**136 kL**		**5.88E-1 Ci**		
90Y	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.57E-3 μCi/g	5.88E-1 Ci	C	
90Y	**Total**		**136 kL**		**5.88E-1 Ci**		Based on 90Sr
93Zr	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	0.00E+ 00 μCi/g	0.00E+ 00 Ci	E	

Analyte	Waste Phase	Waste Type	Volume	Concentration	Inventory	Basis	Comment
93Zr	**Total**		**136 kL**		**0.00E+ 00 Ci**		
93mNb	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	0.00E+ 00 μCi/g	0.00E+ 00 Ci	E	
93mNb	**Total**		**136 kL**		**0.00E+ 00 Ci**		
99Tc	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.86E-8 μCi/g	3.00E-6 Ci	E	
99Tc	**Total**		**136 kL**		**3.00E-6 Ci**		
106Ru	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.51E-16 μCi/g	2.44E-14 Ci	E	
106Ru	**Total**		**136 kL**		**2.44E-14 Ci**		
113mCd	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	2.15E-7 μCi/g	3.47E-5 Ci	E	
113mCd	**Total**		**136 kL**		**3.47E-5 Ci**		
125Sb	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.82E-9 μCi/g	2.95E-7 Ci	E	
125Sb	**Total**		**136 kL**		**2.95E-7 Ci**		
126Sn	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.84E-8 μCi/g	6.22E-6 Ci	E	
126Sn	**Total**		**136 kL**		**6.22E-6 Ci**		
129I	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	0.00E+ 00 μCi/g	0.00E+ 00 Ci	E	
129I	**Total**		**136 kL**		**0.00E+ 00 Ci**		
134Cs	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	4.84E-14 μCi/g	7.83E-12 Ci	E	
134Cs	**Total**		**136 kL**		**7.83E-12 Ci**		.
137Cs	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	6.09E-3 μCi/g	1.00E+ 00 Ci	S	

Analyte	Waste Phase	Waste Type	Volume	Concentration	Inventory	Basis	Comment
137Cs	**Total**		**136 kL**		**1.00E+ 00 Ci**		
137mBa	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	5.75E-3 μCi/g	9.46E-1 Ci	C	
137mBa	**Total**		**136 kL**		**9.46E-1 Ci**		Based on 137Cs
151Sm	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	5.93E-3 μCi/g	9.59E-1 Ci	E	
151Sm	**Total**		**136 kL**		**9.59E-1 Ci**		
152Eu	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	2.09E-7 μCi/g	3.38E-5 Ci	E	
152Eu	**Total**		**136 kL**		**3.38E-5 Ci**		
154Eu	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.24E-5 μCi/g	2.01E-3 Ci	E	
154Eu	**Total**		**136 kL**		**2.01E-3 Ci**		.
155Eu	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	4.33E-6 μCi/g	7.01E-4 Ci	E	
155Eu	**Total**		**136 kL**		**7.01E-4 Ci**		.
226Ra	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.30E-11 μCi/g	5.34E-9 Ci	E	
226Ra	**Total**		**136 kL**		**5.34E-9 Ci**		
227Ac	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	7.61E-9 μCi/g	1.23E-6 Ci	E	
227Ac	**Total**		**136 kL**		**1.23E-6 Ci**		
228Ra	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.65E-14 μCi/g	2.67E-12 Ci	C	
228Ra	**Total**		**136 kL**		**2.67E-12 Ci**		
229Th	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.94E-12 μCi/g	3.14E-10 Ci	E	

Analyte	Waste Phase	Waste Type	Volume	Concentration	Inventory	Basis	Comment
229Th	**Total**		**136 kL**		**3.14E-10 Ci**		
231Pa	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.23E-8 μCi/g	5.24E-6 Ci	E	
231Pa	**Total**		**136 kL**		**5.24E-6 Ci**		
232Th	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.65E-14 μCi/g	2.67E-12 Ci	E	
232Th	**Total**		**136 kL**		**2.67E-12 Ci**		
232U	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	4.64E-12 μCi/g	8.40E-10 Ci	C	
232U	**Total**		**136 kL**		**8.40E-10 Ci**		Based on UTOTAL and Template isotopic distribution
233U	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.90E-13 μCi/g	7.05E-11 Ci	C	
233U	**Total**		**136 kL**		**7.05E-11 Ci**		Based on UTOTAL and Template isotopic distribution
234U	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.25E-7 μCi/g	5.89E-5 Ci	C	
234U	**Total**		**136 kL**		**5.89E-5 Ci**		Based on UTOTAL and Template isotopic distribution
235U	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.44E-8 μCi/g	2.61E-6 Ci	C	
235U	**Total**		**136 kL**		**2.61E-6 Ci**		Based on UTOTAL and Template isotopic distribution

Analyte	Waste Phase	Waste Type	Volume	Concentration	Inventory	Basis	Comment
236U	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	4.43E-9 μCi/g	8.01E-7 Ci	C	
236U	**Total**		**136 kL**		**8.01E-7 Ci**		Based on UTOTAL and Template isotopic distribution
237Np	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	5.35E-7 μCi/g	9.68E-5 Ci	S	
237Np	**Total**		**136 kL**		**9.68E-5 Ci**		
238Pu	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.41E-3 μCi/g	2.55E-1 Ci	C	
238Pu	**Total**		**136 kL**		**2.55E-1 Ci**		Based on 239Pu and Template model isotopic distribution
238U	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.33E-7 μCi/g	6.03E-5 Ci	C	
238U	**Total**		**136 kL**		**6.03E-5 Ci**		Based on UTOTAL and Template isotopic distribution
239Pu	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.68E-1 μCi/g	3.04E+ 01 Ci	C	
239Pu	**Total**		**136 kL**		**3.04E+ 01 Ci**		Based on 239/240Pu and Template model isotopic distribution
240Pu	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	2.12E-2 μCi/g	3.84E+ 00 Ci	C	
240Pu	**Total**		**136 kL**		**3.84E+ 00 Ci**		Based on 239/240Pu and Template model isotopic distribution

Analyte	Waste Phase	Waste Type	Volume	Concentration	Inventory	Basis	Comment
241Am	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	2.02E-2 μCi/g	3.66E+ 00 Ci	S	
241Am	**Total**		**136 kL**		**3.66E+ 00 Ci**		.
241Pu	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.34E-2 μCi/g	6.04E+ 00 Ci	C	
241Pu	**Total**		**136 kL**		**6.04E+ 00 Ci**		Based on 239Pu and Template model isotopic distribution
242Cm	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	5.16E-6 μCi/g	9.34E-4 Ci	C	
242Cm	**Total**		**136 kL**		**9.34E-4 Ci**		Based on 241Am and Template model isotopic distribution
242Pu	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.40E-7 μCi/g	6.15E-5 Ci	C	
242Pu	**Total**		**136 kL**		**6.15E-5 Ci**		Based on 239Pu and Template model isotopic distribution
243Am	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.10E-6 μCi/g	5.60E-4 Ci	C	
243Am	**Total**		**136 kL**		**5.60E-4 Ci**		Based on 241Am and Template model isotopic distribution
243Cm	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	5.46E-8 μCi/g	9.88E-6 Ci	C	
243Cm	**Total**		**136 kL**		**9.88E-6 Ci**		Based on 241Am and Template model isotopic distribution

Analyte	Waste Phase	Waste Type	Volume	Concentration	Inventory	Basis	Comment
244Cm	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.16E-6 μCi/g	2.09E-4 Ci	C	
244Cm	**Total**		**136 kL**		**2.09E-4 Ci**		Based on 241Am and Template model isotopic distribution

Tank 241-T-204 Best Basis Inventory Without Details -- Supplementals
Decayed To: January 1, 2008
Effective Date: July 1, 2004
Published On: February 29, 2008
Best Basis Derivation
The water concentration is applicable to the time of sampling and may change with time; no water inventory is calculated.

Analyte	Waste Phase	Waste Type	Volume	Concentration	Inventory	Basis	Comment
Ag	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	2.84E+ 00 μg/g	4.67E-1 kg	S	
Ag	**Total**		**136 kL**		**4.67E-1 kg**		Upper bounding estimate
As	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	2.08E+ 02 μg/g	3.42E+ 01 kg	S	
As	**Total**		**136 kL**		**3.42E+ 01 kg**		.
B	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	9.51E+ 01 μg/g	1.56E+ 01 kg	S	
B	**Total**		**136 kL**		**1.56E+ 01 kg**		.
Ba	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.42E+ 01 μg/g	2.33E+ 00 kg	S	
Ba	**Total**		**136 kL**		**2.33E+ 00 kg**		Upper bounding estimate
Be	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.42E+ 00 μg/g	2.33E-1 kg	S	
Be	**Total**		**136 kL**		**2.33E-1 kg**		Upper bounding estimate

Analyte	Waste Phase	Waste Type	Volume	Concentration	Inventory	Basis	Comment
Cd	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.42E+ 00 μg/g	2.33E-1 kg	S	
Cd	**Total**		**136 kL**		**2.33E-1 kg**		Upper bounding estimate
Ce	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	6.30E+ 01 μg/g	1.04E+ 01 kg	S	
Ce	**Total**		**136 kL**		**1.04E+ 01 kg**		.
Co	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	6.52E+ 00 μg/g	1.07E+ 00 kg	S	
Co	**Total**		**136 kL**		**1.07E+ 00 kg**		.
Cu	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	6.84E+ 00 μg/g	1.12E+ 00 kg	S	
Cu	**Total**		**136 kL**		**1.12E+ 00 kg**		.
Li	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	2.84E+ 00 μg/g	4.67E-1 kg	S	
Li	**Total**		**136 kL**		**4.67E-1 kg**		Upper bounding estimate
Mg	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.46E+ 01 μg/g	5.69E+ 00 kg	S	
Mg	**Total**		**136 kL**		**5.69E+ 00 kg**		.
Mo	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.42E+ 01 μg/g	2.33E+ 00 kg	S	
Mo	**Total**		**136 kL**		**2.33E+ 00 kg**		Upper bounding estimate
Nd	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	2.84E+ 01 μg/g	4.67E+ 00 kg	S	

Analyte	Waste Phase	Waste Type	Volume	Concentration	Inventory	Basis	Comment
Nd	**Total**		**136 kL**		**4.67E+ 00 kg**		Upper bounding estimate
Free OH	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.38E+ 03 μg/g	2.26E+ 02 kg	C	
Free OH	**Total**		**136 kL**		**2.26E+ 02 kg**		
Aroclors (Total PCB)	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	2.50E+ 01 μg/g	4.01E+ 00 kg	E	
Aroclors (Total PCB)	**Total**		**136 kL**		**4.01E+ 00 kg**		
Sb	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.36E+ 01 μg/g	5.54E+ 00 kg	S	
Sb	**Total**		**136 kL**		**5.54E+ 00 kg**		.
Th	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.50E-7 μg/g	2.43E-8 kg	E	
Th	**Total**		**136 kL**		**2.43E-8 kg**		
Ti	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	3.46E+ 00 μg/g	5.70E-1 kg	S	
Ti	**Total**		**136 kL**		**5.70E-1 kg**		.
Tl	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	2.99E+ 02 μg/g	4.92E+ 01 kg	S	
Tl	**Total**		**136 kL**		**4.92E+ 01 kg**		.
V	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.42E+ 01 μg/g	2.33E+ 00 kg	S	
V	**Total**		**136 kL**		**2.33E+ 00 kg**		Upper bounding estimate

Analyte	Waste Phase	Waste Type	Volume	Concentration	Inventory	Basis	Comment
Zn	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	6.27E+ 01 μg/g	1.03E+ 01 kg	S	
Zn	**Total**		**136 kL**		**1.03E+ 01 kg**		.
239/240Pu	Sludge (Liquid & Solid)	224-2 (Solid)	136 kL	1.90E-1 μCi/g	3.43E+ 01 Ci	S	
239/240Pu	**Total**		**136 kL**		**3.43E+ 01 Ci**		Supplemental analyte used to calculate Pu isotopes.

The water concentration is applicable to the time of sampling and may change with time; no water inventory is calculated.

Tank 241-T-204 Analytical Methods and Procedures

Analyte	Method	Procedure
Aluminum	ICP Acid Digestion	LA-505-151/161
Americium-241	Gamma Energy Analysis Fusion	LA-548-121
Americium-241	Resin Extraction/AEA Fusion	LA-953-104
Antimony	ICP Acid Digestion	LA-505-151/161
Arsenic	ICP Acid Digestion	LA-505-151/161
Barium	ICP Acid Digestion	LA-505-151/161
Beryllium	ICP Acid Digestion	LA-505-151/161
Bismuth	ICP Acid Digestion	LA-505-151/161
Boron	ICP Acid Digestion	LA-505-151/161
Bromide	Ion Chromatography Water Digestion	LA-533-105
Bulk Density	Bulk Density by Centrifuge	LA-519-132
Bulk Density	Physical Properties	LO-160-103
Cadmium	ICP Acid Digestion	LA-505-151/161
Calcium	ICP Acid Digestion	LA-505-151/161
Cerium	ICP Acid Digestion	LA-505-151/161
Cesium-137	Gamma Energy Analysis Fusion	LA-548-121
Chloride	Ion Chromatography Water Digestion	LA-533-105
Chromium	ICP Acid Digestion	LA-505-151/161
Cobalt	ICP Acid Digestion	LA-505-151/161
Cobalt-60	Gamma Energy Analysis Fusion	LA-548-121
Copper	ICP Acid Digestion	LA-505-151/161
Curium-243/244	Resin Extraction/AEA Fusion	LA-953-104
Drainable Liquid Volume	Physical Properties	LO-160-103
Endotherm - transition 1	DSC with Mettler	LA-514-113
Endotherm - transition 1	TGA/DSC on Perkin Elmer	LA-514-114
Europium-154	Gamma Energy Analysis Fusion	LA-548-121
Europium-155	Gamma Energy Analysis Fusion	LA-548-121
Fluoride	Ion Chromatography Water Digestion	LA-533-105
Gross alpha	Alpha Radiochemistry Fusion	LA-508-101
Iron	ICP Acid Digestion	LA-505-151/161
Lanthanum	ICP Acid Digestion	LA-505-151/161

Tank 241-T-204 Analytical Methods and Procedures

Analyte	Method	Procedure
Lead	ICP Acid Digestion	LA-505-151/161
Lithium	ICP Acid Digestion	LA-505-151/161
Magnesium	ICP Acid Digestion	LA-505-151/161
Manganese	ICP Acid Digestion	LA-505-151/161
Molybdenum	ICP Acid Digestion	LA-505-151/161
Neodymium	ICP Acid Digestion	LA-505-151/161
Neptunium-237	ICP/MS Acid Digestion	LA-506-101
Nickel	ICP Acid Digestion	LA-505-151/161
Nitrate	Ion Chromatography Water Digestion	LA-533-105
Nitrite	Ion Chromatography Water Digestion	LA-533-105
Oxalate	Ion Chromatography Water Digestion	LA-533-105
Percent Water	DSC/TGA	LA-514-115
Percent Water	TGA/DSC on Perkin Elmer	LA-514-114
Percent Water	Thermogravimetric Analysis	LA-560-112
PH Measurement	pH Measurement on Solids	LA-212-105
Phosphate	Ion Chromatography Water Digestion	LA-533-105
Phosphorus	ICP Acid Digestion	LA-505-151/161
Plutonium-238	Resin Extraction/AEA Fusion	LA-953-104
Plutonium-239	ICP/MS Acid Digestion	LA-506-101
Plutonium-239/240	Resin Extraction/AEA Fusion	LA-953-104
Plutonium-240	ICP/MS Acid Digestion	LA-506-101
Potassium	ICP Acid Digestion	LA-505-151/161
Samarium	ICP Acid Digestion	LA-505-151/161
Silicon	ICP Acid Digestion	LA-505-151/161
Silver	ICP Acid Digestion	LA-505-151/161
Sodium	ICP Acid Digestion	LA-505-151/161
Solid Weight	Extrusion Process by Push Mode Extruder	LO-160-104
Solid Weight	Physical Properties	LO-160-103
Strontium	ICP Acid Digestion	LA-505-151/161
Strontium-89/90	Strontium 89/90 by Beta Counting Fusion	LA-220-101

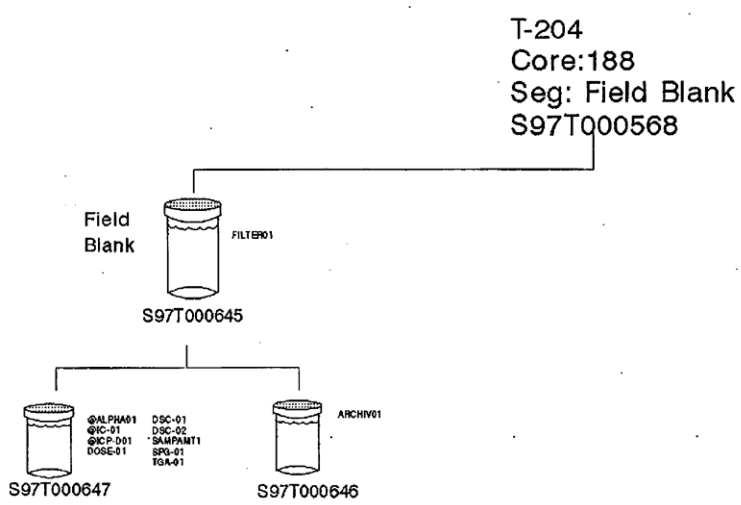
Tank 241-T-204 Analytical Methods and Procedures

Analyte	Method	Procedure
Sulfate	Ion Chromatography Water Digestion	LA-533-105
Sulfur	ICP Acid Digestion	LA-505-151/161
Thallium	ICP Acid Digestion	LA-505-151/161
Titanium	ICP Acid Digestion	LA-505-151/161
Total inorganic carbon	TIC and TOC	LA-342-100
Total organic carbon	TIC and TOC	LA-342-100
Uranium	ICP Acid Digestion	LA-505-151/161
Uranium-233	ICP/MS Acid Digestion	LA-506-101
Uranium-234	ICP/MS Acid Digestion	LA-506-101
Uranium-238	ICP/MS Acid Digestion	LA-506-101
Vanadium	ICP Acid Digestion	LA-505-151/161
Zinc	ICP Acid Digestion	LA-505-151/161
Zirconium	ICP Acid Digestion	LA-505-151/161

Tank 241-T-204 Subsampling Scheme and Sample Description

Sample Identification		Amount	Aggregation Level	Sample Characteristics
Sample Location	**Sample Event**			
Riser 3	Core 188: 1	0 mL	Drainable Liquid	Extruded 18 inches of black solids with a texture resembling a wet sludge slurry.
		161.2 g	Segment Upper Half	
		150.3 g	Segment Lower Half	
	Core 188: 2	0 mL	Drainable Liquid	Extruded 4 inches of black solids with a texture resembling a wet sludge. The drainable liquid was added to the solids jar.
		94.2 g	Segment Solids	
	Core 188: 3	0 mL	Drainable Liquid	Extruded 13 inches of black solids with a texture resembling a wet sludge. The drainable liquid was added to the solids jar.
		216.6 g	Segment Solids	
	Core 188: 4	0 mL	Drainable Liquid	Extruded 19 inches of black solids with a texture resembling a dry sludge.
		189.4 g	Segment Upper Half	
		166.5 g	Segment Lower Half	
	Core 188: 5	0 mL	Drainable Liquid	
		177.3 g	Segment Upper Half	
		178.1 g	Segment Lower Half	
	Core 188: 6	0 mL	Drainable Liquid	
		194.8 g	Segment Upper Half	
		166.6 g	Segment Lower Half	
	Core 188: 7	0 mL	Drainable Liquid	
		172.7 g	Segment Upper Half	
		183.2 g	Segment Lower Half	
	Core 188: 8	0 mL	Drainable Liquid	
		159.5 g	Segment Upper Half	
		193.1 g	Segment Lower Half	
	Core 188: 9	0 mL	Drainable Liquid	Extruded 17 inches of black solids with a texture resembling a dry sludge.
		173.9 g	Segment Upper Half	
		153.7 g	Segment Lower Half	
	Core 188:10	0 mL	Drainable Liquid	Extruded 19 inches of black solids with a texture resembling a dry sludge.
		195.3 g	Segment Upper Half	
		151.9 g	Segment Lower Half	

241-T-204 Sample Breakdown Diagrams



Attachment 1

HNF-SD-WM-DP-255, REV. 0

15

241-T-204 Rheology Report

No data available

241-T-204 Means and Confidence Intervals

Solid Data

Tank 241-T-204 95 Percent Two-Sided Confidence Interval for the Mean Concentration for Solid 1997 Core Composite (Sampling Dates -- March 27, 1997 - April 11, 1997)

Analyte	Method	Mean	df	LL	UL	Units
Aluminum	ICP:A	5.36E+ 01	1	4.47E+ 01	6.25E+ 01	µg/g
Americium-241	GEA:F	2.44E-2	1	1.87E-3	4.70E-2	µCi/g
Antimony	ICP:A	3.36E+ 01	1	0.00E+ 00	7.37E+ 01	µg/g
Arsenic	ICP:A	2.08E+ 02	1	1.95E+ 02	2.21E+ 02	µg/g
Barium*	ICP:A	< 1.42E+ 01	n/a	n/a	n/a	µg/g
Beryllium*	ICP:A	< 1.42E+ 00	n/a	n/a	n/a	µg/g
Bismuth	ICP:A	5.15E+ 04	1	4.64E+ 04	5.66E+ 04	µg/g
Boron	ICP:A	9.51E+ 01	1	0.00E+ 00	4.50E+ 02	µg/g
Bromide*	IC:W	< 2.83E+ 02	n/a	n/a	n/a	µg/g
Bulk Density	Physical Properties	1.21E+ 00	n/a	n/a	n/a	g/mL
Cadmium*	ICP:A	< 1.42E+ 00	n/a	n/a	n/a	µg/g
Calcium	ICP:A	2.06E+ 02	1	1.81E+ 02	2.31E+ 02	µg/g
Cerium	ICP:A	6.30E+ 01	1	4.58E+ 01	8.01E+ 01	µg/g
Cesium-137	GEA:F	7.76E-3	1	7.62E-3	7.90E-3	µCi/g
Chloride	IC:W	6.73E+ 02	1	4.14E+ 02	9.33E+ 02	µg/g
Chromium	ICP:A	4.49E+ 03	1	4.24E+ 03	4.74E+ 03	µg/g
Cobalt	ICP:A	6.52E+ 00	1	1.44E+ 00	1.16E+ 01	µg/g
Cobalt-60*	GEA:F	< 1.59E-3	n/a	n/a	n/a	µCi/g
Copper	ICP:A	6.84E+ 00	1	1.56E+ 00	1.21E+ 01	µg/g
Europium-154*	GEA:F	< 4.21E-3	n/a	n/a	n/a	µCi/g
Europium-155*	GEA:F	< 3.41E-3	n/a	n/a	n/a	µCi/g
Fluoride	IC:W	5.94E+ 03	1	4.44E+ 03	7.43E+ 03	µg/g
Iron	ICP:A	4.04E+ 03	1	1.81E+ 03	6.26E+ 03	µg/g
Lanthanum	ICP:A	1.15E+ 04	1	8.96E+ 03	1.40E+ 04	µg/g
Lead	ICP:A	3.10E+ 02	1	2.85E+ 02	3.35E+ 02	µg/g
Lithium*	ICP:A	< 2.84E+ 00	n/a	n/a	n/a	µg/g
Magnesium	ICP:A	3.46E+ 01	1	2.82E+ 01	4.10E+ 01	µg/g
Manganese	ICP:A	1.41E+ 04	1	1.34E+ 04	1.47E+ 04	µg/g
Molybdenum*	ICP:A	< 1.42E+ 01	n/a	n/a	n/a	µg/g
Neodymium*	ICP:A	< 2.84E+ 01	n/a	n/a	n/a	µg/g
Nickel	ICP:A	2.42E+ 02	1	2.35E+ 02	2.48E+ 02	µg/g
Nitrate	IC:W	5.52E+ 04	1	2.66E+ 04	8.37E+ 04	µg/g
Nitrite	IC:W	2.84E+ 02	1	7.33E+ 01	4.94E+ 02	µg/g
Oxalate	IC:W	1.33E+ 03	1	1.08E+ 03	1.58E+ 03	µg/g
Percent Water	DSC/TGA	7.51E+ 01	1	6.52E+ 01	8.49E+ 01	%

Tank 241-T-204 95 Percent Two-Sided Confidence Interval for the Mean Concentration for Solid 1997 Core Composite (Sampling Dates -- March 27, 1997 - April 11, 1997)

Analyte	Method	Mean	df	LL	UL	Units
Phosphate	IC:W	2.46E+ 03	1	1.24E+ 03	3.67E+ 03	µg/g
Phosphorus	ICP:A	2.65E+ 03	1	2.45E+ 03	2.84E+ 03	µg/g
Potassium	ICP:A	6.12E+ 03	1	5.74E+ 03	6.50E+ 03	µg/g
Samarium*	ICP:A	< 2.84E+ 01	n/a	n/a	n/a	µg/g
Silicon	ICP:A	1.50E+ 03	1	1.18E+ 03	1.81E+ 03	µg/g
Silver*	ICP:A	< 2.84E+ 00	n/a	n/a	n/a	µg/g
Sodium	ICP:A	3.18E+ 04	1	3.05E+ 04	3.31E+ 04	µg/g
Strontium	ICP:A	4.99E+ 02	1	4.54E+ 02	5.43E+ 02	µg/g
Strontium-89/90	Sr89/90:F	4.60E-3	1	0.00E+ 00	1.91E-2	µCi/g
Sulfate*	IC:W	3.63E+ 02	1	0.00E+ 00	1.01E+ 03	µg/g
Sulfur*	ICP:A	< 2.84E+ 01	n/a	n/a	n/a	µg/g
Thallium	ICP:A	2.99E+ 02	1	1.85E+ 02	4.13E+ 02	µg/g
Titanium	ICP:A	3.46E+ 00	1	3.40E+ 00	3.53E+ 00	µg/g
Total inorganic carbon	Persulfate Oxidation	1.40E+ 03	1	1.20E+ 03	1.59E+ 03	µg/g
Total organic carbon	Persulfate Oxidation	3.12E+ 02	1	0.00E+ 00	7.44E+ 02	µg/g
Uranium*	ICP:A	< 1.42E+ 02	n/a	n/a	n/a	µg/g
Vanadium*	ICP:A	< 1.42E+ 01	n/a	n/a	n/a	µg/g
Zinc	ICP:A	6.27E+ 01	1	0.00E+ 00	1.71E+ 02	µg/g
Zirconium*	ICP:A	< 2.84E+ 00	n/a	n/a	n/a	µg/g

* a "less than" value was used in the calculation

Tank 241-T-204 95 Percent Two-Sided Confidence Interval for the Mean Concentration for Solid 1997 Core Segment (Sampling Dates -- March 27, 1997 - April 11, 1997)

Analyte	Method	Mean	df	LL	UL	Units
Bulk Density	Physical Properties	1.18E+ 00	9	1.17E+ 00	1.20E+ 00	g/mL
Gross alpha*	Proportional Counting: F	1.44E-1	19	1.25E-1	1.63E-1	µCi/g
Percent Water	DSC/TGA	7.50E+ 01	35	7.33E+ 01	7.67E+ 01	%

* a "less than" value was used in the calculation

Tank 241-T-204 95 Percent Two-Sided Confidence Interval for the Mean Concentration for Solid Composite (Sampling Dates -- March 27, 1997 - April 11, 1997)

Analyte	Method	Mean	df	LL	UL	Units
Americium-241	AEA:F	2.88E-2	1	2.88E-2	2.88E-2	µCi/g
Bulk Density	Bulk Density by Centrifuge	1.33E+ 00	n/a	n/a	n/a	g/mL
Cesium-137*	GEA:F	< 1.70E-2	n/a	n/a	n/a	µCi/g
Cobalt-60*	GEA:F	< 1.06E-2	n/a	n/a	n/a	µCi/g
Curium-243/244*	AEA:F	< 1.29E-2	n/a	n/a	n/a	µCi/g
Gross alpha	Proportional Counting: F	2.82E-1	1	2.37E-1	3.26E-1	µCi/g
Neptunium-237	ICP/MS:A	1.09E-3	1	0.00E+ 00	3.66E-3	µg/g
Percent Water	DSC/TGA	6.82E+ 01	1	6.68E+ 01	6.96E+ 01	%
Plutonium-238*	AEA:F	< 1.60E-2	n/a	n/a	n/a	µCi/g
Plutonium-239	ICP/MS:A	4.47E+ 00	1	2.87E+ 00	6.06E+ 00	µg/g
Plutonium-239/240	AEA:F	2.72E-1	1	1.45E-1	3.99E-1	µCi/g
Plutonium-240	ICP/MS:A	1.46E-1	1	1.00E-1	1.92E-1	µg/g
Strontium-89/90	Sr89/90:F	2.86E-2	1	0.00E+ 00	1.44E-1	µCi/g
Uranium-233	ICP/MS:A	2.13E-4	1	0.00E+ 00	1.64E-3	µg/g
Uranium-234	ICP/MS:A	2.78E-4	1	4.44E-5	5.12E-4	µg/g
Uranium-238	ICP/MS:A	1.42E+ 00	1	1.04E+ 00	1.79E+ 00	µg/g

* a "less than" value was used in the calculation

241-T-204 Means and Confidence Intervals

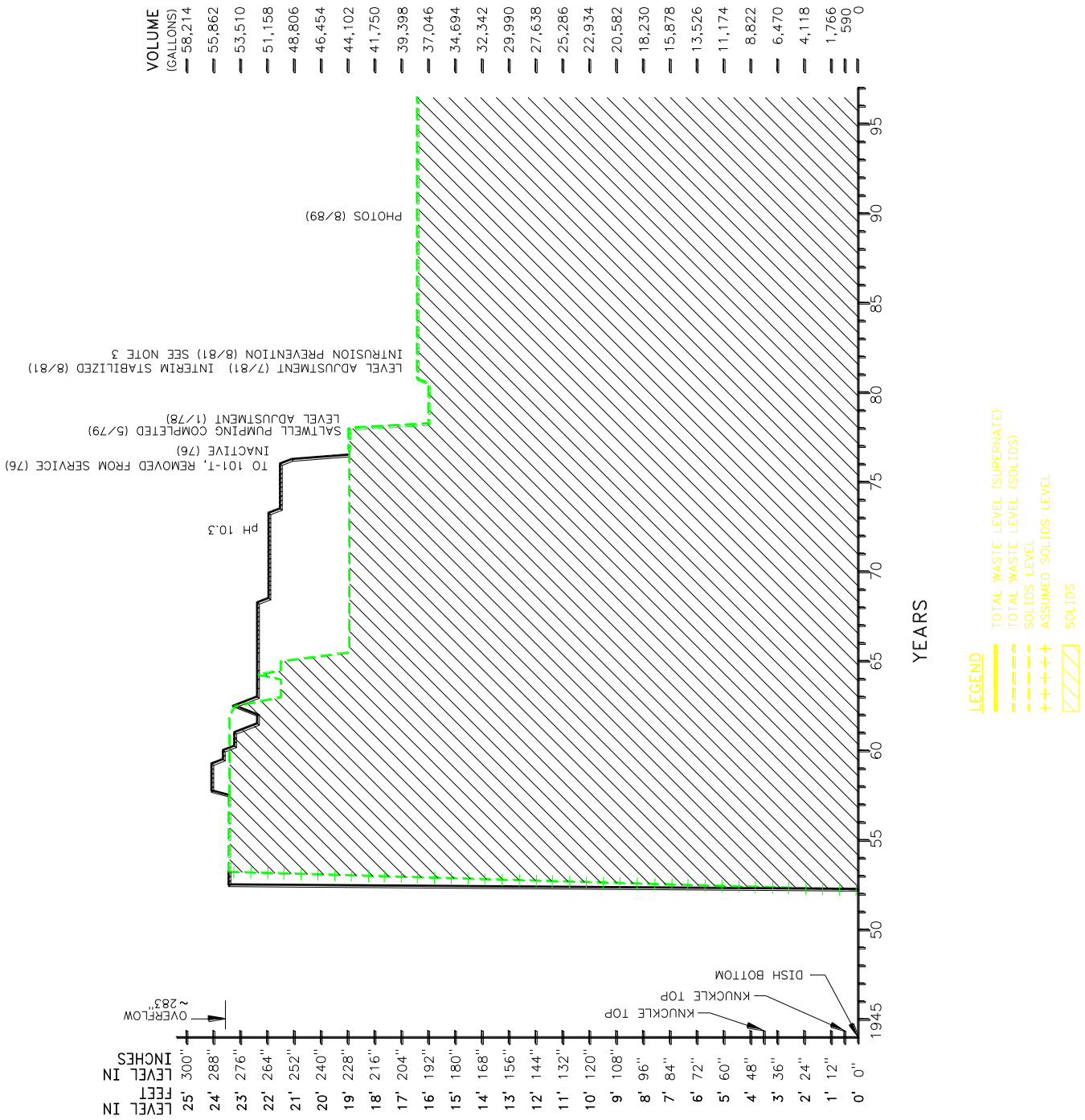
Liquid Data

No data available

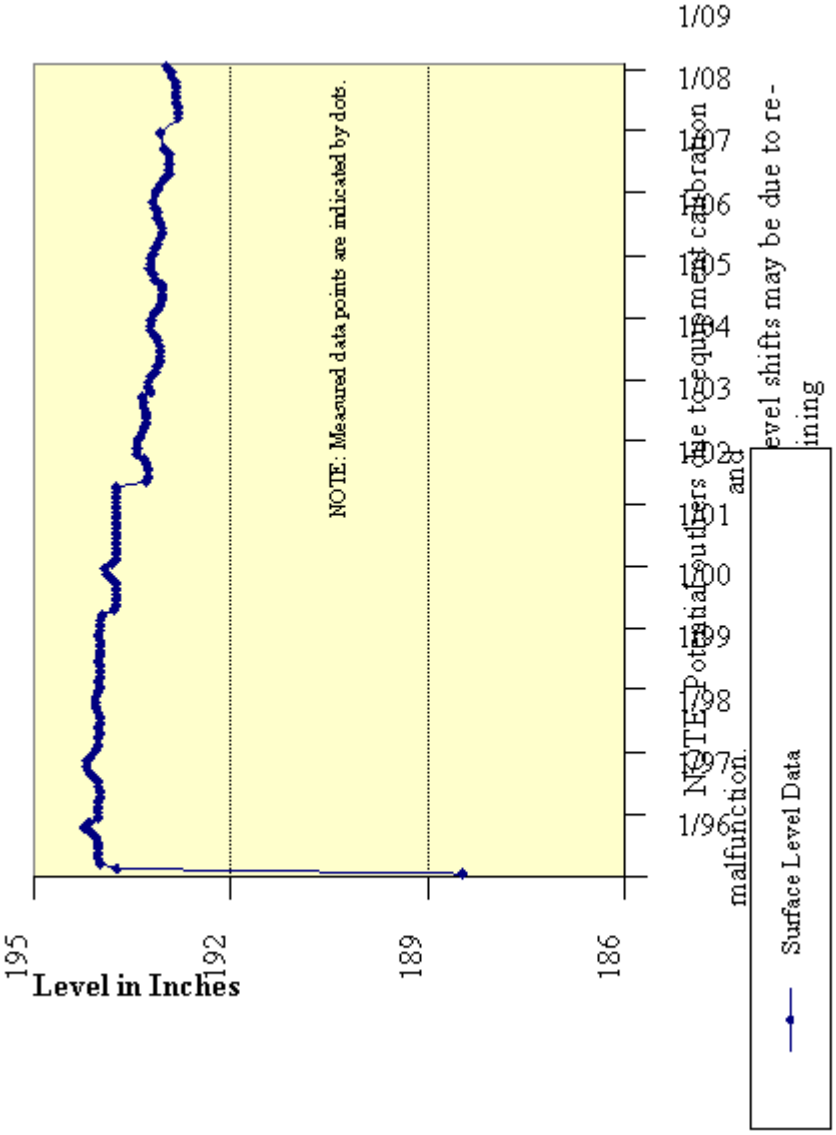
Tank 241-T-204 Transfers (1994 to present)

No transfers

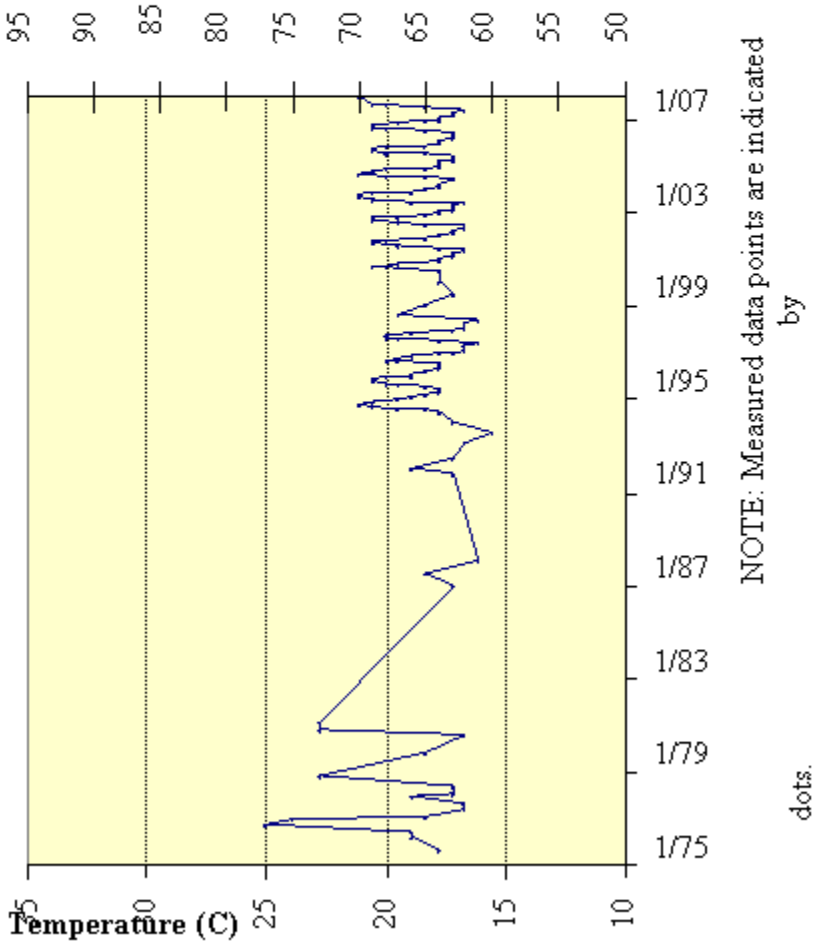
241-T-204 HTCE Surface Levels



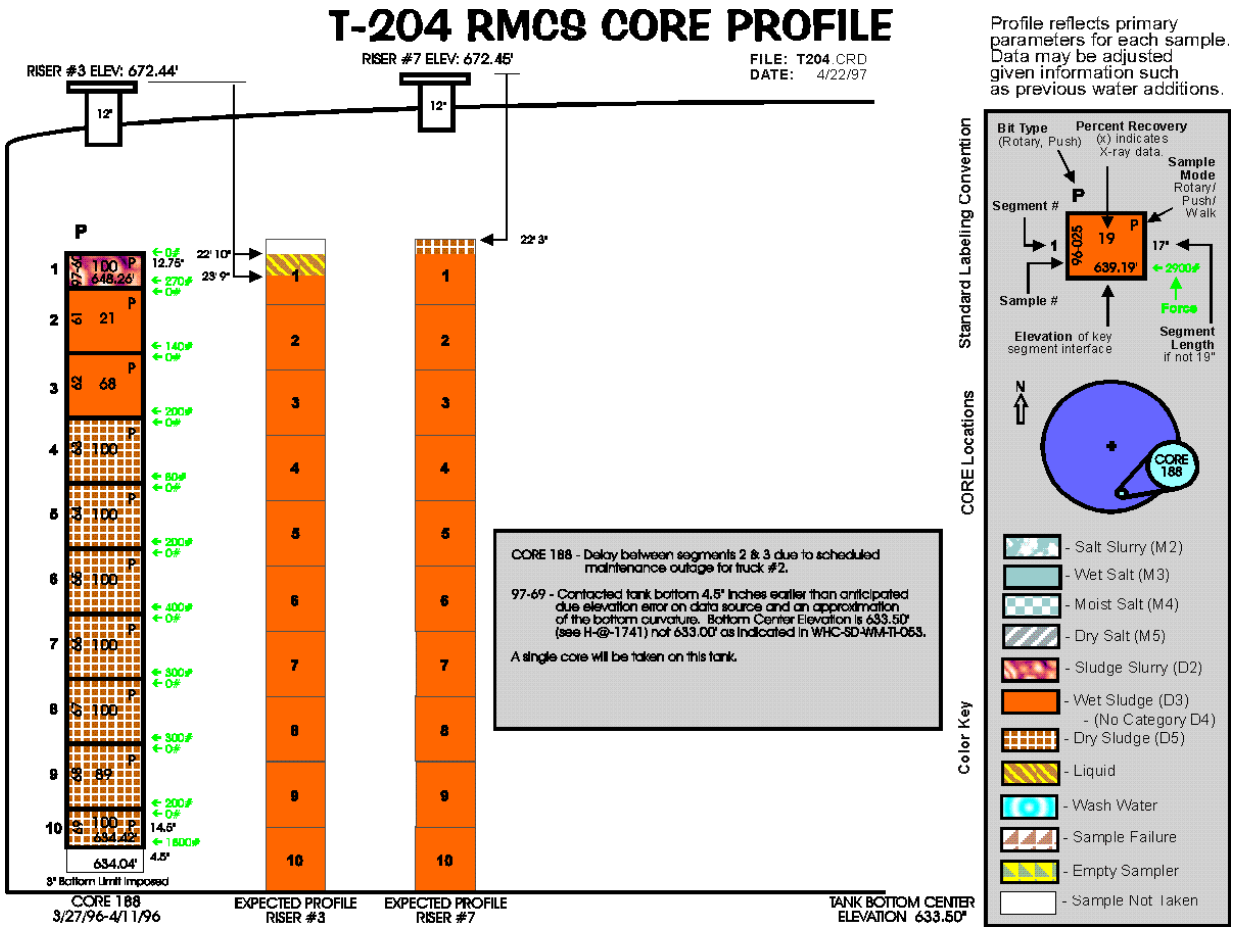
241-T-204 Average Monthly Tank Surface Level (after 1/1/96 only)



241-T-204 Tank Temperature Profile



241-T-204 Core Profiles



Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
241-T-204 Rmcs Core Profile	Core Profiles	4/22/1997	241-T-204	FINAL	Core Profile 241T204 C188.gif
242-A Evaporator Data Quality Objectives	Data Quality Objectives	12/4/2003	ALL	3	DQO Evaportator Rev 3 FINAL.doc
A History Of The 200 Area Tank Farms	History of 200 Area Tank Farms	6/1/1990	ALL		A History of the 200 Area Tank Farms.htm
Acrobat Version Of Historical Tank Content Estimate For The Northwest Quadrant Of The Hanford 200 West Area	HTCE Quadrant Summary Documents	5/2/1997	NW Quadrant	1	Nw_intro.pdf
Aerial Photo Of T Farm	HTCE Photos		T Farm	n/a	T-farm.htm
Analysis Plan for Tank Archive Samples for the Retrieval Performance Evaluation Process Data Quality Objectives	Tank Sampling and Analysis Plans	3/20/2002	ALL	0	RPP-10284 Rev. 0.doc
Appendix F - Drywell Overview Data For T Farm	HTCE Quadrant Summary Documents	3/1/1995	T Farm	0	Es241t1.dwg
Best Basis Inventory Process Requirements	Best-Basis Inventory	10/11/2004	ALL	7	RPP-7625 Rev 7 - Final.doc
Best-Basis Inventory Derivation: Tank 241-T-204	Recent Best Basis Derivation Text	8/31/2004	241-T-204		T-204 TIR8 FY04 Q4 - final Rev 1.doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Best-Basis Wash And Leach Factor Analysis	Best-Basis Inventory	1/4/1999	ALL	0A	D198211771.rms D198211763.rms
Bibliographic Citations Of Process Aids (Whc-Ip-0711) Useful To Characterization Authors	Miscellaneous Characterization Documents	6/13/1997	ALL	0	procaids.wp5
Characterization Data Needs for Development, Design and Operation of Retrieval Equipment Developed through the DQO Process	Data Quality Objectives	7/31/1996	ALL	1	WHC-SD-WM-DQO-008.pdf
Chemistry Control Analysis Plan for Tank Archive Samples	Tank Sampling and Analysis Plans	2/27/2002	ALL	0-A	RPP-9906 Rev 0.doc RPP-9906 Rev. 0 Tbl 4-1 4-2.xls RPP-9906 Rev. 0A.doc RPP-9906 Rev. 0A Tbls 4-1 & 4-2.xls

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Compatibility Grab Sampling And Analysis Plan For 1997	Tank Sampling and Analysis Plans	1/15/1998	ALL	0L	TSAP115R0.rms TSAP115R0A.rms TSAP115R0B.rms TSAP115R0C.rms TSAP115R0D.rms TSAP115R0E.rms TSAP115R0F.rms TSAP115R0G.rms TSAP115R0H.rms TSAP115R0I.rms TSAP115R0J.rms TSAP115R0K.rms TSAP115R0L.rms
Compatibility Grab Sampling And Analysis Plan For 1998	Tank Sampling and Analysis Plans	9/17/1998	ALL	1	TSAP150R1A.rms TSAP150R1.rms TSAP150R1B.rms TSAP150R1C.rms

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Compatibility Grab Sampling And Analysis Plan For 1999	Tank Sampling and Analysis Plans	2/11/1999	ALL	0	HNF-3528R0.rms HNF-3528R0A.rms HNF-3528R0B.rms HNF-3528R0C.rms HNF-3528R0D.rms HNF-3528R0E.rms HNF-3528R0F.rms

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Compatibility Grab Sampling And Analysis Plan For Fiscal Year 2000	Tank Sampling and Analysis Plans	3/20/2000	ALL	0D	RPP-5570 tables 3-1 and 3-2.xls RPP-5570 R0A.doc RPP-5570 rev 0.doc RPP-5570 Rev 0B.doc RPP-5570 rev 0C.doc RPP-5570Rev.0D.doc RPP-5570Rev.0-Dtbs3-1&3-2.xls RPP-5570R0.rms RPP-5570R0A.rms RPP-5570R0B.rms RPP-5570R0C.rms RPP-5570R.0E.doc RPP-5570Rev.0F.doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Compatibility Grab Sampling and Analysis Plan for Fiscal Year 2001	Tank Sampling and Analysis Plans	1/3/2001	ALL	0-E	RPP-7023Rev0.doc RPP-7023 tbl 3-1 & 3-2.xls RPP-7023R0A.rms RPP-7023_rev0B.doc RPP-7023 rev 0-C tables 3-1 and 3-2.xls RPP-7023 rev 0-D tables 3-1 and 3-2.xls RPP-7023_rev0E.doc RPP-7023 Rev.0F.doc RPP-7023 Rev.0G.doc RPP-7023 Rev.0H.doc
Compatibility Grab Sampling and Analysis Plan for Fiscal Year 2002	Tank Sampling and Analysis Plans	5/31/2002	ALL	1	RPP-9417 Rev. 0.doc RPP-9417 Rev 0 Tbls.xls RPP-9417 Rev.1.doc RPP-9417 Rev. 1- tb.xls
Component Closure Action Data Quality Objectives for the C-200 Series Tanks	Data Quality Objectives	7/17/2003	ALL	0	DQO C-200 Series Component Clo Rev 0 FINAL.doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Data Quality Objective for Tank Farms Waste Compatibility Program	Data Quality Objectives	12/9/2003	ALL	7	DQO Comp FINAL Rev 7.doc
Data Quality Objectives for Evaluation of Ammonia in the Double-Shell Tanks	Data Quality Objectives	12/8/2003	ALL	0	DQO Ammonia vapor in DST FINAL Rev 0.doc
Data Quality Objectives for Regulatory Requirements for Dangerous Waste Sampling and Analysis	Data Quality Objectives	7/2/1999	ALL	1	HNF-SD-WM-DQO-025.pdf
Data Quality Objectives for Regulatory Requirements for Hazardous and Radioactive Air Emissions Sampling and Analysis	Data Quality Objectives	7/6/1999	ALL	1	WHC-SD-WM-DQO-021.pdf
Data Quality Objectives for Regulatory Requirements for Wastewater Effluents Sampling and Analysis	Data Quality Objectives	3/28/1996	ALL	0	WHC-SD-WM-DQO-024.pdf
Data Quality Objectives for Supplemental Treatment Evaluation of Saltcake Waste in Tank 241-S-112	Data Quality Objectives	9/15/2003	ALL	0	DQO Supp Treatment S-112 FINAL Rev 0 .doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Data Quality Objectives for Tank 241-U-107 Proof-of-Concept	Data Quality Objectives	11/26/2002	ALL	2	DQO U-107 Final Rev 2.doc
Data Quality Objectives for Tank Hazardous Vapor Safety Screening	Data Quality Objectives	11/15/1995	ALL	2	WHC-SD-WM-DQO-002.pdf
Data Quality Objectives for TWRS Privatization Phase 1: Tank Waste Transfer Control	Data Quality Objectives	6/5/2001	ALL	2	DQO Tank Transfer Final Rev 2.doc
Data Quality Objectives to Confirm Tank T is an Appropriate Feed Source for High Level Waste Feed Batch X	Data Quality Objectives	9/9/2002	ALL	3	HNF-1558 Rev.3.pdf
Data Quality Objectives to Confirm Tank T is an Appropriate Feed Source for Low-Activity Waste Feed Batch X	Data Quality Objectives	9/9/2002	ALL	3	HNF-1796 Rev.3.pdf
Data Quality Objectives to Support PCB Management in the Double-Shell Tanks	Data Quality Objectives	6/13/2002	ALL	3	DQO PCB FINAL Rev 3.doc
Data Quality Objectives to Support the Saltcake Dissolution Retrieval Demonstration in Tank 241-S-112	Data Quality Objectives	9/12/2001	ALL	1	DQO S-112 Final Rev 1.DOC

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Double Shell Tanks Chemistry Control Sampling and Analysis Plan for Fiscal Year 2002	Tank Sampling and Analysis Plans	4/29/2002	ALL	3	RPP-8970 Rev. 0.doc RPP-8970 Rev. 0 Tbl 4-1.xls RPP-8970 Rev.1.doc RPP-8970 Rev. 1Tbls 4-1.xls RPP-8970 Rev.2 .doc RPP-8970 Rev. 2 Tbls 4-1.xls RPP-8970 Rev. 3.doc RPP-8970 Rev. 3-Tbs 4-1.xls
Double-Shell Tank Chemistry Control Sampling And Analysis Plan for Fiscal Year 2003	Tank Sampling and Analysis Plans	2/5/2003	ALL	2	RPP-12225 Rev 0 .doc RPP-12225 Rev. 0 Tbl 4-1.xls RPP-12225 Rev 1.doc RPP-12225, Rev. 1 Tbls 4-1.xls RPP-12225 Rev. 2.doc RPP-12225 Rev. 2 Tbl 4-1.xls
Double-Shell Tanks Chemistry Control Data Quality Objectives	Data Quality Objectives	8/19/2004	ALL	5	DQO Chemistry Control Final Rev 5.doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Fiscal Year PCB Analysis Plan for Tank Archive Samples	Tank Sampling and Analysis Plans	9/30/2002	ALL	1	RPP-10070 Rev 1.doc RPP-10070 Rev. 1-Tbls 2-2 & 2-3.xls RPP-10070 Rev 0.doc RPP-10070 Rev 0-Tbls 3-1 and 3-2.xls RPP-10070 Rev. 1A.doc RPP-10070 Rev. 1A-Tbes 2-2 & 2-3.xls

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Generalized Feed Delivery Descriptions and Tank Specific Flowsheets	RPP Mission Flowsheets	10/25/2001	ALL	0	Appendix E1.doc Appendix G1.doc Appendix H.doc D177GrH.dwg RPP-8218 Rev 0 cover.doc fig1-1.doc fig3-1.TIF fig3-2.TIF fig3-3.tif fig3-4.tif fig3-5.XLS fig3-6.XLS Figure 2-1.vsd figure4-1.XLS figure4-2.XLS Table 1-1.xls ATTQ7NPF.xls RPP-8218 R0.doc
Generic Tank Profile Diagram	TCR Graphics		ALL		Generic Tank Profile.doc
Hanford Tank Chemical And Radionuclide Inventories: Hdw Model Rev. 4 (Text Portion)	Los Alamos National Laboratory Documents	1/1/1997	ALL	4	Rev4Text.doc
Hanlon Tables E-5 And E-6 In Spreadsheet Form	Miscellaneous Characterization Documents	9/7/2000	ALL	0	allhanlon.xls ATTKYIUS.xls

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Hdw Rev 4 Final Inventory Tables (Nw Quadrant)	Los Alamos National Laboratory Documents	2/5/1997	NW Quadrant	4	inventoryrev4_nw.xls
Historical Tank Content Estimate For The Northwest Quadrant Of The Hanford 200 West Area	HTCE Quadrant Summary Documents	3/1/1995	NW Quadrant	0	htcerev0.nw.htm
HTCE Quadrant Summary (Rev 0) Glossary	HTCE Quadrant Summary Documents	6/1/1994	ALL	0	Glosary.a
HTCE Quadrant Summary (Rev 1) Glossary	HTCE Quadrant Summary Documents	6/1/1996	ALL	1	Gloss_a.wpd
HTCE Supporting Documents (Appendix A, B, And D)	HTCE Quadrant Summary Documents	5/2/1997	T Farm	1	Gloss_t.wpd Refre_t.wpd Ttotal1.xls Ttotal2.xls
HTCE Supporting Documents (Appendix C And F)	HTCE Quadrant Summary Documents	5/2/1997	241-T-204	1	Itkse109.dwg T-204.dwg t204lh.xls t204rsr.xls
HTCE Surface Level History for Tank 241-T-204	HTCE Surface Level History	10/23/1998	241-T-204	N/A	T204lh.doc
Inventorytablesrev4.Xls (Agnew Hdw Model Rev 4 Inventory Tables)	Los Alamos National Laboratory Documents	2/5/1997	ALL	4	No Attachments -- see Metadata
Lanl Hanford Document Server	Los Alamos National Laboratory Documents		ALL		lanlserver.htm

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Letter of Intent for River Protection Project (RPP) Characterization Program	Tank Sampling and Analysis Plans	2/25/2000	ALL	0	D8223292.rms RPP-5539+ Letter+ of+ Instruction
Low-Activity and High-Level Waste Feed Processing Data Quality Objectives	Data Quality Objectives	4/1/1999	ALL	0	PNNL-12163.pdf
METEOROLOGICAL INFLUENCES ON VAPOR INCIDENTS IN THE 200 EAST AND 200 WEST TANK FARMS, FROM CALENDAR YEARS 2001 TO 2004	Vapor Characterization Documents	6/11/2004	ALL		MIVR 6-14 skm.pdf 7G130-JMF 04-002.pdf Distribution.pdf
Methodology For Uncertainty Estimation Of Hanford Tank Chemical And Radionuclide Inventories And Concentrations	Best-Basis Inventory	2/27/1998	ALL	NA	PNNL.11842.final.doc
Organic Complexant Topical Report	Miscellaneous Characterization Documents	6/26/1997	ALL	1	97204463NEW.rms
Particle Size Analysis of HLW Tank Sludges	Particle Size Analysis	3/4/2002	ALL	0	HNF-8862 Rev. 0.obd
PCB Analysis Plan for Tank Archive Samples	Tank Sampling and Analysis Plans	3/22/2001	ALL	0	RPP-7684 Rev. 0.doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Preliminary Tank Characterization Report For Single-Shell Tank 241-T-204: Best-Basis Inventory	Tank Characterization Reports/Best-Basis Tank Inventories	8/21/1997	241-T-204	0	T-204.BBT
Regulatory Data Quality Objectives Supporting Tank Waste Remediation System Privatization Project	Data Quality Objectives	12/1/1998	ALL	0	PNNL-12040.pdf
Retrieval Performance Evaluation Process Data Quality Objectives	Data Quality Objectives	4/25/2001	ALL	0	DQO RPE DQO FINAL.doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Sample Breakdown Diagram for 241-T-204	Sample Breakdown Diagrams	7/24/1997	241-T-204	0	241T204Core188FieldBlank~ 24JULY1997.GIF 241T204Core188Segment1~ 24JULY1997.GIF 241T204Core188Segment2~ 24JULY1997.GIF 241T204Core188Segment3~ 24JULY1997.GIF 241T204Core188Segment4~ 24JULY1997.GIF 241T204Core188Segment5~ 24JULY1997.GIF 241T204Core188Segment6~ 24JULY1997.GIF 241T204Core188Segment7~ 24JULY1997.GIF 241T204Core188Segment10~ 24JULY1997.GIF 241T204Core188Segment8~ 24JULY1997.GIF 241T204Core188CompositeSolids~ 24JULY1997.gif

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Sample Breakdown Diagram for Tank 241-T-204	Sample Breakdown Diagrams	3/27/2003	241-T-204		241T204 Core 188 Comp~ 27MARCH2003.gif
Sample Breakdown Diagram for Tank 241-T-204	Sample Breakdown Diagrams	3/27/2003	241-T-204		No Attachments -- see Metadata
Sample Breakdown Diagram for Tank 241-T-204	Sample Breakdown Diagrams	4/17/2003	241-T-204	0	241T204Core188 Group20020426~ 17APRIL2003.gif
Sample Breakdown Diagrams for Tank 241-T-204	Sample Breakdown Diagrams	3/7/2003	241-T-204		241T204 Cores 188 Comp~ 07MARCH2003.gif
Sampling And Analysis Plan For Flammable Gases In Inactive Miscellaneous Underground Storage Tanks	Tank Sampling and Analysis Plans	2/1/2000	ALL	0	RPP-5658 Rev. 0.doc RPP-5658R0.rms
Standard Inventories Of Chemicals And Radionuclides In Hanford Site Tank Wastes	Best-Basis Inventory	9/30/1998	ALL	Rev. 0B	Ti-740b.pt1 Ti-740b.ref TI-740b.apk
Standard Inventories Of Chemicals And Radionuclides In Hanford Site Tank Wastes (Appendices A-E)	Best-Basis Inventory	8/28/1997	ALL	0	Ti-740.apa Ti-740.apb Ti-740.apc Ti-740.apd Ti-740.ape
Standard Inventories Of Chemicals And Radionuclides In Hanford Site Tank Wastes (Appendices F-J)	Best-Basis Inventory	8/28/1997	ALL	0	Ti-740.apf Ti-740.apg Ti-740.aph Ti-740.api Ti-740.apj

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Standard Inventories Of Chemicals And Radionuclides In Hanford Site Tank Wastes (Body 1 And 2)	Best-Basis Inventory	8/28/1997	ALL	0	Ti-740.pt1 Ti-740.pt2
Standard Inventories Of Chemicals And Radionuclides In Hanford Site Tank Wastes (Body 3 And Ref)	Best-Basis Inventory	8/28/1998	ALL	0	Ti-740.pt3 Ti-740.ref
Summary of Sampling and Analytical Methods and Issues	Vapor Characterization Documents	7/9/2004	ALL	0	Summary of Sampling and Analytical Methods and Issues.doc
Summary Of Uncertainty Estimation Results For Hanford Tank Chemical And Radionuclide Inventories	Best-Basis Inventory	9/30/1998	ALL	NA	PNNL.12003.final.doc
Tank 241-C-106 Component Closure Action Data Quality Objectives	Data Quality Objectives	8/21/2003	ALL	0	DQO C-106 Comp Clos Rev 0 FINAL.doc
Tank 241-T-204 Risers	Tank Riser Information	2/14/1997	241-T-204		T204RIS.doc
Tank 241-T-204 Tank Characterization Plan	Tank Characterization Plans	10/28/1996	241-T-204	0	97t204.r0
Tank 241-T-204 TCR Graphics	TCR Graphics		241-T-204		T204TCR.WP6
Tank 241-T-204 TCR Graphics - Plan View	TCR Graphics	4/30/1998	241-T-204	02/28/2002	T204PLN.doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Tank Characterization Report For Single-Shell Tanks 241-T-201, 241-T-202, 241-T-203, And 241-T-204	Tank Characterization Reports/Best-Basis Tank Inventories	2/19/1998	241-T-204	0	Sd1501r0.pt1 Sd1501r0.pt2 Sd1501r0.pt3
Tank Characterization Report For Single-Shell Tanks 241-T-201, 241-T-202, 241-T-203, And 241-T-204	Tank Characterization Reports/Best-Basis Tank Inventories	7/14/1998	241-T-204	0A	T200ecn.wpd
Tank Layering Model, Rev 4 (Tlm Part Of Hdw Rev 4)	Los Alamos National Laboratory Documents	1/1/1997	ALL	4	tlmRev4.xls
Tank Safety Screening Data Quality Objectives	Data Quality Objectives	8/31/1995	ALL	2	WHC-SD-WM-SP-004.pdf
Tank Sampling and Analysis Plan for 241-U-301B	Tank Sampling and Analysis Plans	6/13/2003	ALL	0	RPP-16723 - U301B TSAP Rev 0.doc RPP-16723 Rev 0 Tables 4-1 and 4-2.xls
Tank Sampling and Analysis Plan for Fiscal Year 2004 PCB Analysis Plan For Tank Archive Samples	Tank Sampling and Analysis Plans	7/23/2003	ALL	2	RPP-10070 Rev 2.doc RPP-10070 Rev 2-Tables 2-2 and 2-3.xls
Tank Sampling And Analysis Plan For Vapor Tanks	Tank Sampling and Analysis Plans	8/14/2000	ALL	0-A	RPP-6264 Rev 0.doc RPP-6264 Rev 0A.doc
Tank-241-BY-Tank Safety Status Evaluation	Miscellaneous Characterization Documents	6/1/1998	ALL	0B	HNF-2177 Tank Safety Evaluations Rev 0B.doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Test Plan For Measuring Ventilation Rates And Combustible Gas Levels In Rpp Active Catch Tanks	Tank Sampling and Analysis Plans	11/3/2000	ALL	4B	HNF-4082-Rev. 3.doc HNF-4082R3.rms HNF-4082-Rev4.doc HNF-4082-Rev4-A.doc HNF-4082-Rev4-B.doc
The Sort On Radioactive Waste Type Model: A Method To Sort Single-Shell Tanks Into Characteristic Groups	Miscellaneous Characterization Documents	3/1/1995	ALL	2	877b 877b-1 877b-2 877b-3 877b-4 877b-5 877b-6 877app1 877b-di 877b-7 97234634NEW.rms
Waste Surface Photograph Mosaic For Tank 241-T-204	HTCE Photos	8/3/1989	241-T-204	n/a	t-204.htm
Waste Tank Risers Available For Sampling - Table Updates	Tank Riser Information	2/17/1999	ALL		Rinspect.xls Historyx.xls Tanks8.xls
Wstrs Document Portion For T-204	Los Alamos National Laboratory Documents	2/5/1997	241-T-204	4	T204wstr.xls
Wstrsrev4.Xls (Agnew Wstrs Model Rev4 Data)	Los Alamos National Laboratory Documents	2/5/1997	ALL	4	No Attachments -- see Metadata

Word is the best general viewer for all of the documents found in these searches. However, document files ending in .RMS require RMIS Viewprint software which is only available to Hanford Local Area Network users. If you try to open one of these documents without the software, you will receive an error message. However, by clicking on the document title you can read a description of the document. If after reading the document description you desire a copy of a document you cannot view, contact Anne Weaver at 509 376-1418 (ANNE_L_WEAVER@RL.GOV) and a copy will be sent to you.

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
241-T-204 Rmcs Core Profile	Core Profiles	4/22/1997	241-T-204	FINAL	Core Profile 241T204 C188.gif
242-A Evaporator Data Quality Objectives	Data Quality Objectives	12/4/2003	ALL	3	DQO Evaportator Rev 3 FINAL.doc
A History Of The 200 Area Tank Farms	History of 200 Area Tank Farms	6/1/1990	ALL		A History of the 200 Area Tank Farms.htm
Acrobat Version Of Historical Tank Content Estimate For The Northwest Quadrant Of The Hanford 200 West Area	HTCE Quadrant Summary Documents	5/2/1997	NW Quadrant	1	Nw_intro.pdf
Aerial Photo Of T Farm	HTCE Photos		T Farm	n/a	T-farm.htm
Analysis Plan for Tank Archive Samples for the Retrieval Performance Evaluation Process Data Quality Objectives	Tank Sampling and Analysis Plans	3/20/2002	ALL	0	RPP-10284 Rev. 0.doc
Appendix F - Drywell Overview Data For T Farm	HTCE Quadrant Summary Documents	3/1/1995	T Farm	0	Es241t1.dwg
Best Basis Inventory Process Requirements	Best-Basis Inventory	10/11/2004	ALL	7	RPP-7625 Rev 7 - Final.doc
Best-Basis Inventory Derivation: Tank 241-T-204	Recent Best Basis Derivation Text	8/31/2004	241-T-204		T-204 TIR8 FY04 Q4 - final Rev 1.doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Best-Basis Wash And Leach Factor Analysis	Best-Basis Inventory	1/4/1999	ALL	0A	D198211771.rms D198211763.rms
Bibliographic Citations Of Process Aids (Whc-Ip-0711) Useful To Characterization Authors	Miscellaneous Characterization Documents	6/13/1997	ALL	0	procaids.wp5
Characterization Data Needs for Development, Design and Operation of Retrieval Equipment Developed through the DQO Process	Data Quality Objectives	7/31/1996	ALL	1	WHC-SD-WM-DQO-008.pdf
Chemistry Control Analysis Plan for Tank Archive Samples	Tank Sampling and Analysis Plans	2/27/2002	ALL	0-A	RPP-9906 Rev 0.doc RPP-9906 Rev. 0 Tbl 4-1 4-2.xls RPP-9906 Rev. 0A.doc RPP-9906 Rev. 0A Tbls 4-1 & 4-2.xls

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Compatibility Grab Sampling And Analysis Plan For 1997	Tank Sampling and Analysis Plans	1/15/1998	ALL	0L	TSAP115R0.rms TSAP115R0A.rms TSAP115R0B.rms TSAP115R0C.rms TSAP115R0D.rms TSAP115R0E.rms TSAP115R0F.rms TSAP115R0G.rms TSAP115R0H.rms TSAP115R0I.rms TSAP115R0J.rms TSAP115R0K.rms TSAP115R0L.rms
Compatibility Grab Sampling And Analysis Plan For 1998	Tank Sampling and Analysis Plans	9/17/1998	ALL	1	TSAP150R1A.rms TSAP150R1.rms TSAP150R1B.rms TSAP150R1C.rms

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Compatibility Grab Sampling And Analysis Plan For 1999	Tank Sampling and Analysis Plans	2/11/1999	ALL	0	HNF-3528R0.rms HNF-3528R0A.rms HNF-3528R0B.rms HNF-3528R0C.rms HNF-3528R0D.rms HNF-3528R0E.rms HNF-3528R0F.rms

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Compatibility Grab Sampling And Analysis Plan For Fiscal Year 2000	Tank Sampling and Analysis Plans	3/20/2000	ALL	0D	RPP-5570 tables 3-1 and 3-2.xls RPP-5570 R0A.doc RPP-5570 rev 0.doc RPP-5570 Rev 0B.doc RPP-5570 rev 0C.doc RPP-5570Rev.0D.doc RPP-5570Rev.0-Dtbs3-1&3-2.xls RPP-5570R0.rms RPP-5570R0A.rms RPP-5570R0B.rms RPP-5570R0C.rms RPP-5570R.0E.doc RPP-5570Rev.0F.doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Compatibility Grab Sampling and Analysis Plan for Fiscal Year 2001	Tank Sampling and Analysis Plans	1/3/2001	ALL	0-E	RPP-7023Rev0.doc RPP-7023 tbl 3-1 & 3-2.xls RPP-7023R0A.rms RPP-7023_rev0B.doc RPP-7023 rev 0-C tables 3-1 and 3-2.xls RPP-7023 rev 0-D tables 3-1 and 3-2.xls RPP-7023_rev0E.doc RPP-7023 Rev.0F.doc RPP-7023 Rev.0G.doc RPP-7023 Rev.0H.doc
Compatibility Grab Sampling and Analysis Plan for Fiscal Year 2002	Tank Sampling and Analysis Plans	5/31/2002	ALL	1	RPP-9417 Rev. 0.doc RPP-9417 Rev 0 Tbls.xls RPP-9417 Rev.1.doc RPP-9417 Rev. 1- tb.xls
Component Closure Action Data Quality Objectives for the C-200 Series Tanks	Data Quality Objectives	7/17/2003	ALL	0	DQO C-200 Series Component Clo Rev 0 FINAL.doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Data Quality Objective for Tank Farms Waste Compatibility Program	Data Quality Objectives	12/9/2003	ALL	7	DQO Comp FINAL Rev 7.doc
Data Quality Objectives for Evaluation of Ammonia in the Double-Shell Tanks	Data Quality Objectives	12/8/2003	ALL	0	DQO Ammonia vapor in DST FINAL Rev 0.doc
Data Quality Objectives for Regulatory Requirements for Dangerous Waste Sampling and Analysis	Data Quality Objectives	7/2/1999	ALL	1	HNF-SD-WM-DQO-025.pdf
Data Quality Objectives for Regulatory Requirements for Hazardous and Radioactive Air Emissions Sampling and Analysis	Data Quality Objectives	7/6/1999	ALL	1	WHC-SD-WM-DQO-021.pdf
Data Quality Objectives for Regulatory Requirements for Wastewater Effluents Sampling and Analysis	Data Quality Objectives	3/28/1996	ALL	0	WHC-SD-WM-DQO-024.pdf
Data Quality Objectives for Supplemental Treatment Evaluation of Saltcake Waste in Tank 241-S-112	Data Quality Objectives	9/15/2003	ALL	0	DQO Supp Treatment S-112 FINAL Rev 0 .doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Data Quality Objectives for Tank 241-U-107 Proof-of-Concept	Data Quality Objectives	11/26/2002	ALL	2	DQO U-107 Final Rev 2.doc
Data Quality Objectives for Tank Hazardous Vapor Safety Screening	Data Quality Objectives	11/15/1995	ALL	2	WHC-SD-WM-DQO-002.pdf
Data Quality Objectives for TWRS Privatization Phase 1: Tank Waste Transfer Control	Data Quality Objectives	6/5/2001	ALL	2	DQO Tank Transfer Final Rev 2.doc
Data Quality Objectives to Confirm Tank T is an Appropriate Feed Source for High Level Waste Feed Batch X	Data Quality Objectives	9/9/2002	ALL	3	HNF-1558 Rev.3.pdf
Data Quality Objectives to Confirm Tank T is an Appropriate Feed Source for Low-Activity Waste Feed Batch X	Data Quality Objectives	9/9/2002	ALL	3	HNF-1796 Rev.3.pdf
Data Quality Objectives to Support PCB Management in the Double-Shell Tanks	Data Quality Objectives	6/13/2002	ALL	3	DQO PCB FINAL Rev 3.doc
Data Quality Objectives to Support the Saltcake Dissolution Retrieval Demonstration in Tank 241-S-112	Data Quality Objectives	9/12/2001	ALL	1	DQO S-112 Final Rev 1.DOC

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Double Shell Tanks Chemistry Control Sampling and Analysis Plan for Fiscal Year 2002	Tank Sampling and Analysis Plans	4/29/2002	ALL	3	RPP-8970 Rev. 0.doc RPP-8970 Rev. 0 Tbl 4-1.xls RPP-8970 Rev.1.doc RPP-8970 Rev. 1Tbls 4-1.xls RPP-8970 Rev.2 .doc RPP-8970 Rev. 2 Tbls 4-1.xls RPP-8970 Rev. 3.doc RPP-8970 Rev. 3-Tbs 4-1.xls
Double-Shell Tank Chemistry Control Sampling And Analysis Plan for Fiscal Year 2003	Tank Sampling and Analysis Plans	2/5/2003	ALL	2	RPP-12225 Rev 0 .doc RPP-12225 Rev. 0 Tbl 4-1.xls RPP-12225 Rev 1.doc RPP-12225, Rev. 1 Tbls 4-1.xls RPP-12225 Rev. 2.doc RPP-12225 Rev. 2 Tbl 4-1.xls
Double-Shell Tanks Chemistry Control Data Quality Objectives	Data Quality Objectives	8/19/2004	ALL	5	DQO Chemistry Control Final Rev 5.doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Fiscal Year PCB Analysis Plan for Tank Archive Samples	Tank Sampling and Analysis Plans	9/30/2002	ALL	1	RPP-10070 Rev 1.doc RPP-10070 Rev. 1-Tbls 2-2 & 2-3.xls RPP-10070 Rev 0.doc RPP-10070 Rev 0-Tbls 3-1 and 3-2.xls RPP-10070 Rev. 1A.doc RPP-10070 Rev. 1A-Tbes 2-2 & 2-3.xls

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Generalized Feed Delivery Descriptions and Tank Specific Flowsheets	RPP Mission Flowsheets	10/25/2001	ALL	0	Appendix E1.doc Appendix G1.doc Appendix H.doc D177GrH.dwg RPP-8218 Rev 0 cover.doc fig1-1.doc fig3-1.TIF fig3-2.TIF fig3-3.tif fig3-4.tif fig3-5.XLS fig3-6.XLS Figure 2-1.vsd figure4-1.XLS figure4-2.XLS Table 1-1.xls ATTQ7NPF.xls RPP-8218 R0.doc
Generic Tank Profile Diagram	TCR Graphics		ALL		Generic Tank Profile.doc
Hanford Tank Chemical And Radionuclide Inventories: Hdw Model Rev. 4 (Text Portion)	Los Alamos National Laboratory Documents	1/1/1997	ALL	4	Rev4Text.doc
Hanlon Tables E-5 And E-6 In Spreadsheet Form	Miscellaneous Characterization Documents	9/7/2000	ALL	0	allhanlon.xls ATTKYIUS.xls

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Hdw Rev 4 Final Inventory Tables (Nw Quadrant)	Los Alamos National Laboratory Documents	2/5/1997	NW Quadrant	4	inventoryrev4_nw.xls
Historical Tank Content Estimate For The Northwest Quadrant Of The Hanford 200 West Area	HTCE Quadrant Summary Documents	3/1/1995	NW Quadrant	0	htcerev0.nw.htm
HTCE Quadrant Summary (Rev 0) Glossary	HTCE Quadrant Summary Documents	6/1/1994	ALL	0	Glosary.a
HTCE Quadrant Summary (Rev 1) Glossary	HTCE Quadrant Summary Documents	6/1/1996	ALL	1	Gloss_a.wpd
HTCE Supporting Documents (Appendix A, B, And D)	HTCE Quadrant Summary Documents	5/2/1997	T Farm	1	Gloss_t.wpd Refre_t.wpd Ttotal1.xls Ttotal2.xls
HTCE Supporting Documents (Appendix C And F)	HTCE Quadrant Summary Documents	5/2/1997	241-T-204	1	Itkse109.dwg T-204.dwg t204lh.xls t204rsr.xls
HTCE Surface Level History for Tank 241-T-204	HTCE Surface Level History	10/23/1998	241-T-204	N/A	T204lh.doc
Inventorytablesrev4.Xls (Agnew Hdw Model Rev 4 Inventory Tables)	Los Alamos National Laboratory Documents	2/5/1997	ALL	4	No Attachments -- see Metadata
Lanl Hanford Document Server	Los Alamos National Laboratory Documents		ALL		lanlserver.htm

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Letter of Intent for River Protection Project (RPP) Characterization Program	Tank Sampling and Analysis Plans	2/25/2000	ALL	0	D8223292.rms RPP-5539+ Letter+ of+ Instruction
Low-Activity and High-Level Waste Feed Processing Data Quality Objectives	Data Quality Objectives	4/1/1999	ALL	0	PNNL-12163.pdf
METEOROLOGICAL INFLUENCES ON VAPOR INCIDENTS IN THE 200 EAST AND 200 WEST TANK FARMS, FROM CALENDAR YEARS 2001 TO 2004	Vapor Characterization Documents	6/11/2004	ALL		MIVR 6-14 skm.pdf 7G130-JMF 04-002.pdf Distribution.pdf
Methodology For Uncertainty Estimation Of Hanford Tank Chemical And Radionuclide Inventories And Concentrations	Best-Basis Inventory	2/27/1998	ALL	NA	PNNL.11842.final.doc
Organic Complexant Topical Report	Miscellaneous Characterization Documents	6/26/1997	ALL	1	97204463NEW.rms
Particle Size Analysis of HLW Tank Sludges	Particle Size Analysis	3/4/2002	ALL	0	HNF-8862 Rev. 0.obd
PCB Analysis Plan for Tank Archive Samples	Tank Sampling and Analysis Plans	3/22/2001	ALL	0	RPP-7684 Rev. 0.doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Preliminary Tank Characterization Report For Single-Shell Tank 241-T-204: Best-Basis Inventory	Tank Characterization Reports/Best-Basis Tank Inventories	8/21/1997	241-T-204	0	T-204.BBT
Regulatory Data Quality Objectives Supporting Tank Waste Remediation System Privatization Project	Data Quality Objectives	12/1/1998	ALL	0	PNNL-12040.pdf
Retrieval Performance Evaluation Process Data Quality Objectives	Data Quality Objectives	4/25/2001	ALL	0	DQO RPE DQO FINAL.doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Sample Breakdown Diagram for 241-T-204	Sample Breakdown Diagrams	7/24/1997	241-T-204	0	241T204Core188FieldBlank~ 24JULY1997.GIF 241T204Core188Segment1~ 24JULY1997.GIF 241T204Core188Segment2~ 24JULY1997.GIF 241T204Core188Segment3~ 24JULY1997.GIF 241T204Core188Segment4~ 24JULY1997.GIF 241T204Core188Segment5~ 24JULY1997.GIF 241T204Core188Segment6~ 24JULY1997.GIF 241T204Core188Segment7~ 24JULY1997.GIF 241T204Core188Segment10~ 24JULY1997.GIF 241T204Core188Segment8~ 24JULY1997.GIF 241T204Core188CompositeSolids~ 24JULY1997.gif

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Sample Breakdown Diagram for Tank 241-T-204	Sample Breakdown Diagrams	3/27/2003	241-T-204		241T204 Core 188 Comp~ 27MARCH2003.gif
Sample Breakdown Diagram for Tank 241-T-204	Sample Breakdown Diagrams	3/27/2003	241-T-204		No Attachments -- see Metadata
Sample Breakdown Diagram for Tank 241-T-204	Sample Breakdown Diagrams	4/17/2003	241-T-204	0	241T204Core188 Group20020426~ 17APRIL2003.gif
Sample Breakdown Diagrams for Tank 241-T-204	Sample Breakdown Diagrams	3/7/2003	241-T-204		241T204 Cores 188 Comp~ 07MARCH2003.gif
Sampling And Analysis Plan For Flammable Gases In Inactive Miscellaneous Underground Storage Tanks	Tank Sampling and Analysis Plans	2/1/2000	ALL	0	RPP-5658 Rev. 0.doc RPP-5658R0.rms
Standard Inventories Of Chemicals And Radionuclides In Hanford Site Tank Wastes	Best-Basis Inventory	9/30/1998	ALL	Rev. 0B	Ti-740b.pt1 Ti-740b.ref TI-740b.apk
Standard Inventories Of Chemicals And Radionuclides In Hanford Site Tank Wastes (Appendices A-E)	Best-Basis Inventory	8/28/1997	ALL	0	Ti-740.apa Ti-740.apb Ti-740.apc Ti-740.apd Ti-740.ape
Standard Inventories Of Chemicals And Radionuclides In Hanford Site Tank Wastes (Appendices F-J)	Best-Basis Inventory	8/28/1997	ALL	0	Ti-740.apf Ti-740.apg Ti-740.aph Ti-740.api Ti-740.apj

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Standard Inventories Of Chemicals And Radionuclides In Hanford Site Tank Wastes (Body 1 And 2)	Best-Basis Inventory	8/28/1997	ALL	0	Ti-740.pt1 Ti-740.pt2
Standard Inventories Of Chemicals And Radionuclides In Hanford Site Tank Wastes (Body 3 And Ref)	Best-Basis Inventory	8/28/1998	ALL	0	Ti-740.pt3 Ti-740.ref
Summary of Sampling and Analytical Methods and Issues	Vapor Characterization Documents	7/9/2004	ALL	0	Summary of Sampling and Analytical Methods and Issues.doc
Summary Of Uncertainty Estimation Results For Hanford Tank Chemical And Radionuclide Inventories	Best-Basis Inventory	9/30/1998	ALL	NA	PNNL.12003.final.doc
Tank 241-C-106 Component Closure Action Data Quality Objectives	Data Quality Objectives	8/21/2003	ALL	0	DQO C-106 Comp Clos Rev 0 FINAL.doc
Tank 241-T-204 Risers	Tank Riser Information	2/14/1997	241-T-204		T204RIS.doc
Tank 241-T-204 Tank Characterization Plan	Tank Characterization Plans	10/28/1996	241-T-204	0	97t204.r0
Tank 241-T-204 TCR Graphics	TCR Graphics		241-T-204		T204TCR.WP6
Tank 241-T-204 TCR Graphics - Plan View	TCR Graphics	4/30/1998	241-T-204	02/28/2002	T204PLN.doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Tank Characterization Report For Single-Shell Tanks 241-T-201, 241-T-202, 241-T-203, And 241-T-204	Tank Characterization Reports/Best-Basis Tank Inventories	2/19/1998	241-T-204	0	Sd1501r0.pt1 Sd1501r0.pt2 Sd1501r0.pt3
Tank Characterization Report For Single-Shell Tanks 241-T-201, 241-T-202, 241-T-203, And 241-T-204	Tank Characterization Reports/Best-Basis Tank Inventories	7/14/1998	241-T-204	0A	T200ecn.wpd
Tank Layering Model, Rev 4 (Tlm Part Of Hdw Rev 4)	Los Alamos National Laboratory Documents	1/1/1997	ALL	4	tlmRev4.xls
Tank Safety Screening Data Quality Objectives	Data Quality Objectives	8/31/1995	ALL	2	WHC-SD-WM-SP-004.pdf
Tank Sampling and Analysis Plan for 241-U-301B	Tank Sampling and Analysis Plans	6/13/2003	ALL	0	RPP-16723 - U301B TSAP Rev 0.doc RPP-16723 Rev 0 Tables 4-1 and 4-2.xls
Tank Sampling and Analysis Plan for Fiscal Year 2004 PCB Analysis Plan For Tank Archive Samples	Tank Sampling and Analysis Plans	7/23/2003	ALL	2	RPP-10070 Rev 2.doc RPP-10070 Rev 2-Tables 2-2 and 2-3.xls
Tank Sampling And Analysis Plan For Vapor Tanks	Tank Sampling and Analysis Plans	8/14/2000	ALL	0-A	RPP-6264 Rev 0.doc RPP-6264 Rev 0A.doc
Tank-241-BY-Tank Safety Status Evaluation	Miscellaneous Characterization Documents	6/1/1998	ALL	0B	HNF-2177 Tank Safety Evaluations Rev 0B.doc

Tank 241-T-204 Data Source Reference List

Metadata	Document Type	Date	Scope	Revision	Attachments
Test Plan For Measuring Ventilation Rates And Combustible Gas Levels In Rpp Active Catch Tanks	Tank Sampling and Analysis Plans	11/3/2000	ALL	4B	HNF-4082-Rev. 3.doc HNF-4082R3.rms HNF-4082-Rev4.doc HNF-4082-Rev4-A.doc HNF-4082-Rev4-B.doc
The Sort On Radioactive Waste Type Model: A Method To Sort Single-Shell Tanks Into Characteristic Groups	Miscellaneous Characterization Documents	3/1/1995	ALL	2	877b 877b-1 877b-2 877b-3 877b-4 877b-5 877b-6 877app1 877b-di 877b-7 97234634NEW.rms
Waste Surface Photograph Mosaic For Tank 241-T-204	HTCE Photos	8/3/1989	241-T-204	n/a	t-204.htm
Waste Tank Risers Available For Sampling - Table Updates	Tank Riser Information	2/17/1999	ALL		Rinspect.xls Historyx.xls Tanks8.xls
Wstrs Document Portion For T-204	Los Alamos National Laboratory Documents	2/5/1997	241-T-204	4	T204wstr.xls
Wstrsrev4.Xls (Agnew Wstrs Model Rev4 Data)	Los Alamos National Laboratory Documents	2/5/1997	ALL	4	No Attachments -- see Metadata

Word is the best general viewer for all of the documents found in these searches. However, document files ending in .RMS require RMIS Viewprint software which is only available to Hanford Local Area Network users. If you try to open one of these documents without the software, you will receive an error message. However, by clicking on the document title you can read a description of the document. If after reading the document description you desire a copy of a document you cannot view, contact Anne Weaver at 509 376-1418 (ANNE_L_WEAVER@RL.GOV) and a copy will be sent to you.

Tank 241-T-204 Dilution and Mixing Studies

No data available

Tank 241-T-204 Dilution and Mixing Studies

No data available

Standard Acronym Definitions

Acronym	Definition
%	percent
1C	first cycle decontamination waste
AEA	alpha energy analysis
ANOVA	analysis of variance
AT	alpha total
BBI	Best-basis inventory
BBIM	Best-basis inventory maintenance
BD	below detection limit
BNFL	British Nuclear Fuel Limited, Inc.
BPE	barometric pressure estimate
Btu/hr	British thermal units per hour
BYSltCk	saltcake blend from ITS in BY Tank Farm
CAS	Chemical Abstract Services
CC	concentrated complexant
CEO	change engineering order
CGM	combustible gas meter
CHG	CH2M Hill Hanford Group, Inc.
Ci	curies
CI	confidence interval
Ci/g	curies per gram
Ci/L	curies per liter
cm	centimeter
cm^3	cubic centimeter
cP	centipoise
CRW1	REDOX cladding waste
CWHT	concentrated waste holding tank
DCB	decachlorobyphenyl
df	degrees of freedom
dl	drainable liquid
DOE	U.S. Department of Energy
DQO	data quality objectives
DSA	data source access
DSC	differential scanning calorimetry
DSS	double-shell slurry
DSSF	double-shell slurry feed

Standard Acronym Definitions

Acronym	Definition
DST	double-shell tank
E	engineering assessment-based
EB	evaporator bottoms
Ecology	Washington State Department of Ecology
EVAP	evaporator feed waste
FIC	Food Instrument Corporation
FP	fission product waste from cesium and strontium recovery in B-Plant
ft	feet
ft^2	square feet
ft^3/hr	cubic feet per hour
ft^3/min	cubic feet per minute
g	gram
g/cc	grams per cubic centimeter
g/cm^3	grams per cubic centimeter
g/gal	grams per gallon
g/L	grams per liter
g/mL	grams per milliliter
GC	gas chromatographs
GCS	gas characterization system
GEA	gravimetric energy analysis
GRE	gas release event
μC/mL	micrograms of carbon per milliliter
μCi/g	microcuries per gram
μCi/gal	microcuries per gallon
μCi/L	microcuries per liter
μCi/mL	microcuries per milliliter
μeq/g	microequivalents per gram
μeq/mL	microequivalents per milliliter
μg	microgram
μg/g	micrograms per gram
μg/ml	micrograms per milliliter
μgC/g	micrograms of carbon per gram
μmol	micromole
μmol/L	micromoles per liter

Standard Acronym Definitions

Acronym	Definition
HDW	Hanford defined waste
HHF	Hydrostatic head fluid
HLAN	Hanford local area network
HTCE	historical tank content estimate
IC	ion chromatography
ICP	inductively coupled plasma spectroscopy
ICP/AES	inductively coupled plasma/atomic emission spectrometry
ICP/MS	inductively coupled plasma/mass spectroscopy
IH	Industrial Hygiene
in.	inch
IS	insufficient sample
ITS	in-tank solidification
IX	ion exchange waste
J/g	joules per gram
kg	kilogram
kgal	kilogallon
kL	kiloliter
kW	kilowatt
LANL	Los Alamos National Laboratory
LAW	low activity waste
LCS	laboratory control standard
LEL	lower explosive limit
LFL	lower flammability limit
LH	lower half
LL	lower limit
LMHC	Lockheed Martin Hanford Corporation
LOI	letter of instruction
LOW	liquid observation well
m	meter
M	Hanford defined waste model-based
M/L	moles per liter
MDA	minimum detectable activity
mg	milligram
mg/L	milligrams per liter
mg/m^3	milligrams per cubic meter

Standard Acronym Definitions

Acronym	Definition
MIT	multi-functional instrument tree
mL	milliliter
mm	millimeter
MOU	memorandum of understanding
mRad/hr	millirad per hour
MRQ	minimum reportable quantity
m^2	square meter
m^3	cubic meter
m^3/hr	cubic meters per hour
MW	metal waste
n/a	not applicable
n/d	not detected
n/d	not determined
N/D	not determined
n/r	not reported
NA	not available
NCPLX	non-complexed
NF	not found
NR	not reported
NR	not required
NR	not requested
ORNL	Oak Ridge National Laboratory
ORP	Office of River Protection
OVM	organic vapor monitor
OWW	organic wash waste
PCB	polychlorinated biphenyl
pH	potential of hydrogen
PHMC	Project Hanford Management Contractor
PNNL	Pacific Northwest National Laboratory
ppm	parts per million
ppmv	parts per million by volume
PRSST	propagating reactive system screening test
PUREX	Plutonium Uranium Extraction
QC	quality control
R1	REDOX high-level waste generated from 1952 to 1957

Standard Acronym Definitions

Acronym	Definition
rad/hr	radiation absorbed dose per hour
REDOX	Reduction and Oxidation
REML	restricted maximum likelihood estimation methods
RGS	retained gas sampler
RPD	relative percent difference
RPP	River Protection Project
RR	re-run
RSD	relative standard deviation
S	sample-based
SACS	Surveillance Analysis Computer System
SAP	sampling and analysis plan
SD	standard deviation
SHMS	standard hydrogen monitoring systems
SMM	supernatant mixing model
SMMS	supernatant mixing model saltcake
SMMS1	SMM 242-S evaporator saltcake generated from 1973 until 1976
SMMS2	SMM 242-S evaporator saltcake generated from 1977 until 1980
SpG	specific gravity
^{o}C	degrees centigrade
^{o}F	degrees Fahrenheit
SST	single-shell tank
STP	standard temperature and pressure
SU	supernatant
SVOA	semi-volatile organic analysis
SWLIQ	dilute, non-complexed waste from 200-E Area single-shell tanks
T1SltCk	242-T evaporator saltcake waste, 1951 to 1955
TB	total beta
TBP	tributyl phosphate
TCD	tank characterization database
TCP	tank characterization plan
TCR	tank characterization report
TCX	tetrachloro-m-xylene
TGA	thermogravimetric analysis
TIC	total inorganic carbon
TIR	tank interpretive report

Standard Acronym Definitions

Acronym	Definition
TLM	tank layer model
TOC	total organic carbon
TRU	transuranic
TSAP	Tank Sampling and Analysis Plan
TWINS	Tank Waste Information Network System
TWRS	Tank Waste Remediation System
UH	upper half
UL	upper limit
VFI	void fraction instrument
VIDON	Visual Image Digital Object Network
vol%	volume percent
VSS	vapor sampling system
W	watts
W/Ci	watts per curie
W/L	watts per liter
WHC	Westinghouse Hanford Company
WIT	Waste Disposal Integration Team
WSTRS	waste status and transaction record summary
wt%	weight percent