

INTRODUCTION

The following sections provide tables of data on which PNNL's environmental surveillance summary information in the Hanford Site Environmental Report for Calendar Year 2004 was based. Information that may help the reader to understand these data tables is provided on pages v through ix.

GENERAL

Some degree of inherent uncertainty is associated with any analytical measurement. The total analytical error (total propagated analytical uncertainty) for an individual result is a 2-sigma counting error. For samples that are prepared or manipulated in the laboratory prior to counting, the total analytical error includes both the counting error and the uncertainty connected with sample preparation and chemical separations. For samples that are not manipulated in the laboratory before counting, the total analytical error only accounts for the uncertainty associated with counting the sample. The uncertainty associated with samples that are analyzed but not counted includes only the sample preparation and chemical separations uncertainty.

EXTERNAL RADIATION DATA

The thermoluminescent dosimeter (TLD) readings in this data volume are in milliroentgens per day (mR/day) and have been converted to mrem/year for presentation in the annual report.

The following section defines column headings and definitions used in the data tables in this document. With the exception of columns Replicate ID, Replicate Value, and Relative % Difference reported in the Quality Assurance section of this report, the below column headings are as they appear in the Hanford Environmental Information System (HEIS) database.

COLUMN HEADING	DEFINITION
ANAL UNITS RPTD	Analytical Units Reported are the units in which the value reported was originally reported
COLL MTHD	Collection Method is used to denote the type of method used for surface water (SW) collections: FILTER Filter material of cloth or paper RESIN Resin material for collecting cations and anions from water.
CON SHORT NAME	Constituent Short Name for the specific radiological or chemical compound or physical parameter
COUNTING ERROR	The 2-sigma Counting Error for radioanalytical results only
DIST CLASS	Distant Classification is the location of the sampling site relative to the Hanford Site (Onsite [site-wide], Offsite, Community, Distant, Perimeter, River_Shoreline). This field not utilized by OWNER ID PN LGW.
FILTERED FLAG	Filtered Flag is only applicable to ground-water and surface-water samples. The field is set to 'Y' if the sample was filtered at the time of collection and 'N' if the sample was not filtered at the time of collection.
FLOW RATE	Columbia River daily average flows below Priest Rapids Dam
FLOW RATE UNITS	Columbia River flow in cubic feet per second (CFS)
LAB QUALIFIER	Lab Qualifier identifies issues that could impact the quality of the value reported. Qualifiers that apply to the 2004 data include: B For inorganics, the analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the Instrument Detection Limit (IDL) or Method Detection Limit (MDL). For organics, the analyte was detected in both the associated quality control (QC) blank and in the sample. BC Characteristics form both 'B' and 'C' qualifiers exist

COLUMN HEADING	DEFINITION
BX	Characteristics from both 'B' and 'X' qualifiers exist
BXC	Characteristics from both 'BX' and 'C' qualifiers exist
C	For inorganics, the analyte was detected in both the sample and the associated QC blank.
CD	Characteristics from both 'C' and 'D' qualifiers exist
CX	Characteristics from both 'C' and 'X' qualifiers exist
D	Analyte was identified in an analysis at a secondary dilution factor (i.e., dilution factor different than 1.0)
E	Report value is estimated because of interference.
J	Value reported is estimated because it was detected at a level less than the RDL or Practical Quantitation Limit (PQL) and greater than or equal to the MDL.
JB	Characteristics from both 'J' and 'B' qualifiers exist
JBN	Characteristics from both 'JB' and 'N' qualifiers exist
JN	Characteristics from both 'J' and 'N' qualifiers exist
N	Matrix spike duplicate is outside of the control limits
U	Indicates constituent was analyzed for but not detected or value reported < 0; value reported < counting error; value reported < total analytical error; value reported <= contract MDL, IDL, Minimum Detectable Activity (MDA), or PQL. For metals, 'U' qualifier may be represented by the contract MDL.
UN	Characteristics from both 'U' and 'N' qualifiers exist
UX	Characteristics from both 'U' and 'X' qualifiers exist
X	The value-specific reason for this qualifier is provided in the hardcopy data report and/or case narrative. Additional value-specific information may also be found in the RESULT COMMENT field for this record.

COLUMN HEADING	DEFINITION
MEDIA	<p>Media categorizes samples into logical groups or subject areas:</p> <p>AT Air BI Biota (foodstuffs, wildlife, vegetation) ER External Radiation SO Soil/Sediment SW Surface Water (also represents water collected from rivers, ponds and springs, and drinking water).</p>
MIN DETECTABLE ACTIVITY	MDA is assumed to be a sample-dependent estimate, typically dependent on the background counts measured by the analytical instrument and sample yield, reported in the same units as the value reported.
OWNER ID	Owner ID identifies the owner of the data (SESPMNT = PNNL SESP routine collection, SEPSPEC = PNNL SESP special study, PNLGW = PNNL Groundwater).
RELATIVE % DIFFERENCE	The relative percent difference between the value reported and the value reported for the replicate sample. The formula is:
	$100 * \text{VALUE RPTD} - \text{REPLICATE VALUE} / ((\text{VALUE RPTD} + \text{REPLICATE VALUE}) / 2)$
REPLICATE ID	Replicate ID identifies the primary (routine) sample number.
REPLICATE VALUE	Replicate Value is the value reported for the primary (routine) sample number.
RESULT COMMENT	Result Comment contains pertinent information about the result, which may affect the quality and use of the value reported.
SAMP COMMENT	Sample Comment contains pertinent information about a sample, which may affect the quality and use of the value reported.
SAMP DATE	Sample Date is the date the sample was collected.
SAMP FROM	Sample From identifies the media-dependent entity that was sampled (e.g., COW, WINE, CARP, etc.). This field not utilized by OWNER ID PN LGW.
SAMP ITEM	Sample Item identifies the media-dependent item (e.g., MILK, RED WINE, MUSCLE, etc.) that was sampled from the entity identified in the SAMP FROM field.

COLUMN HEADING	DEFINITION
SAMP NUM	Sample Number is a unique identifier for a sample.
SAMP SITE NAME	Sample Site Name is the name of the sampling site as identified in the HEIS database.
TAG ID	Tag ID is an identifier used to group the different portions collected from a single biota sample. For example, a single Tag ID would be used to group the muscle and bone samples collected from a single deer.
TOTAL ANAL ERROR	The 2-sigma Total Analytical Error may be reported for any result.
VALUE RPTD	Value Reported is the concentration or result reported by the analytical laboratory or read from an instrument.