LETTER REPORT

TANK WASTE SOURCE TERM INVENTORY VALIDATION

Prepared for

Westinghouse Hanford Company

April 1995

For the U.S. Department of Energy
Contract DE-AC06-93RL12359

Prepared by

ICF Kaiser Hanford Company
Richland, Washington

E01595LR

VOLUME I

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7. Abstract

The sample data foar selection of 11 radionuclides and 24 chemical analytes were extracted from six seperate sample data sets, were arranged in a tabular format and were plotted on scatter plots for all of the 149 single-shell tanks, the 24 double-shell tanks and the four aging waste tanks. The solid and liquid sample data was placed in separate tables and plots. The sample data and plots were compiled from the following data sets: * Characterization raw sample data, * Recent core samples, * D. Braun data base, * Wastren (Van Vleet) data base, * TRAC and * HTCE Inventories

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ICF Kaiser Hanford Company

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TANK WASTE SOURCE TERM INVENTORY VALIDATION

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Send Comments to: Mr. W. L. Cowley
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GLOSSARY/ACRONYM LIST

μCi	microcurie
μg	microgram
^{241}Am	Americium-241
Analyte	A particular chemical ion/compound from a chemical analysis (such as: Ba, Cr^{+3}, CN^-, or NaOH) that could be an ionic portion of a reported analyzed chemical (e.g., Na is an analyte from Na_2SO_4); however, an exception is NaOH which could be extrapolated from OH^-
As	Arsenic
ASA	Accelerated Safety Analysis
ASA line	A line on the plots that represents the highest concentration for a specific chemical analyte or radionuclide determination by the process described in this document
Ba	Barium
Be	Beryllium
Bq	Becquerel
Braun	Dave J. Braun - reference to tank sample analysis data file (TSAD) received by ICF KH from Dave J. Braun (11/10/94), that contains information from the Characterization library selecting only the samples with the highest fissile material and lowest neutron poison
Ca	Calcium
Cd	Cadmium
Characterization library	WHC catalogued compilation of hard copy sample information found in reports, memos, and letters
Ci	Curie
^{244}Cm	Curium-244
CN^-	Cyanide
Co	Cobalt
^{60}Co	Cobalt-60

GLOSSARY/ACRONYM LIST (Continued)

Constituent	Any chemical or radionuclide reported on a sample report, memo, letter, or table
Cr^{+3}/Cr^{+6}	Chromium
^{137}Cs	Cesium-137
DJ Braun	(See Braun)
DST	Double-Shell Tank
Dy	Dysprosium
^{154}Eu	Europium-154
g	gram
Hg	Mercury
HTCE	Historical Tank Content Estimate (Brevick, 1994)
HTCE	In reference to solid process flow analyte tank estimates from the Historical Tank Inventory Content Estimate (Brevick, 1994)
ICF KH	ICF Kaiser Hanford Company
KOH	Potassium Hydroxide
L	liter
La	Lanthanum
LATA	Los Alamos Technical Associates
Li	Lithium
Na	Sodium
NaOH	Sodium Hydroxide
Nd	Neodymium
NH_3	Ammonia
^{237}Np	Neptunium-237
^{238}Pu	Plutonium-238
$^{239/240}Pu$	Plutonium-239 and Plutonium-240

GLOSSARY/ACRONYM LIST (Continued)

^{241}Pu	Plutonium-241
Sb	Antimony
Se	Selenium
Source Term	The quantity of radioactive and/or toxic materials released in an accident scenario. Radioactive source terms are given in terms of the activity (in Ci or Bq) of each isotope released. Toxic chemical source terms are given in terms of the amount of material (in grams) of each toxic chemical released
Sr	Strontium
$^{89/90}Sr$	Strontium-89 and Strontium-90
SST	Single-Shell Tank
TCD	Tank Characterization Database - database of core sample information managed by Battelle - Pacific Northwest Laboratory
TCR	Tank Characterization Report - reports generated by WHC and LATA to characterize tank waste, predominantly using core sample data taken after 1989
Te	Tellurium
Tl	Thallium
TRAC	Track Radioactive Components
U	Uranium
V	Vanadium
WASTREN	A compilation of sample information that attempted to select the highest, most recent sample information from the Characterization library, prepared by WASTREN, Inc. This document does not contain information taken after 1990.
WHC	Westinghouse Hanford Company
^{90}Y	Yttrium-90

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INTRODUCTION

The 177 Hanford waste storage tanks in the 200-East and 200-West Areas have received a wide variety and concentration of hazardous chemicals and radionuclides over the last 50 years (1944 to the present). Throughout this time period, the tanks have been sampled numerous times, several tank content estimates have been developed, and several tank sample information data sets have been compiled, all in an effort to establish a tank content characterization.

During fiscal years (FY) 1994 and 1995, the Safety Analysis and Nuclear Engineering (SANE) organization prepared revised accident analyses for the Hanford tank farms. The results of the accident analyses are documented in a Hazard and Accident Analysis Report (WHC-SD-WM-SAR-065, Draft). The accident analyses required calculation of unit doses, dose consequences, and source terms for radionuclides and toxic chemicals.

The development of source terms required that concentrations of selected radionuclides and toxic chemicals in the different waste forms be selected. One of the most important steps in determining the concentrations is in the process of selecting which sample data to use and then interpreting the data. This report describes the process used to select and interpret data.

This effort includes: waste estimations, waste sample analyses, and data sets for a specified 11 radionuclides and 24 chemical analytes. Sources of the sample analyses information were the WHC characterization library (represented by the electronic data sets of ICF KH, Braun and WASTREN), tank characterization database (TCD), and the 241-B-110 and 241-U-110 core data. Waste estimate sources were the track radioactive components (TRAC) and the Historical Tank Content Estimate (HTCE) report (ref 1 and 2).

This report documents the results of a joint ICF KH and WHC venture that assembled, organized, and interpreted sample data for use in developing radionuclide and toxic chemical source terms for a revised Hazard and Accident Analysis. Plots and tables of the various reported sample and estimate values are presented and the methodology used to select the concentrations for developing the source terms is explained.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Sample analysis and waste estimation information are provided in the form of scatter plots and tables. These plots and tables provide a visual reference to the range in numbers of sample analyses and varied concentrations of selected chemical analytes or radionuclides. The range in the numbers of sample analyses for each analyte and each tank is attributed partly to there not being a set listing of chemical constituents or radionuclides analyzed for each sample taken. The chemical constituents or radionuclides analyzed were often based on individual requests for specific sample analysis information. A large number of process samples are of limited value for safety analysis because current materials and inventories in the tanks are not reflected. Other reasons could include the tank usage (i.e., evaporator feed or receiver tanks, etc.), the selected chemical list for a waste estimate report (i.e., HTCE), or the number of tanks addressed in an estimate report.

The work performed resulted in the selection of concentrations for nine different groupings of tanks for radionuclide source terms and five different groupings of tanks for toxic chemical source terms. The groupings and associated concentrations are summarized in the two tables shown in Appendix E.

It is not possible to gather "all" the sample data that has been generated by sampling programs for the Hanford waste tanks. Much of the early data was not filed in readily retrievable forms. Other data requires recovery from the LCCS and LIMS computer files and interpretation by technical experts before it is usable for safety analysis. There is additional data available every month, therefore, any compilation of sample data for safety analysis work is a living document that needs to be updated periodically.

There are two recommendations resulting from this work.

1. The electronic data set compiled by ICF KH during the writing of this report represented the largest collection of useable sample data available on the Hanford Site. Additional sample information is available every month. The information may be current sampling results or historical results that have been added to the WHC Characterization library. The electronic data set created for this report needs to be updated, expanded, and maintained on a regular basis.

2. For this report, the highest believable concentrations of the selected radionuclides and chemicals were used to establish upper bound values for the total unit doses. In some cases, examination of the scatter plots revealed that some of the upper bound values could be lowered or raised. Additional review of this data may determine that more upper bound values could be changed.

APPROACH/EVALUATION

Selection of Data

The development of source terms required that concentrations of selected radionuclides and toxic chemicals in different waste forms be selected. The concentrations are selected by reviewing the large amount of tank sample data. One of the most important steps in determining the concentrations is selecting and interpreting the sample data. Collecting all of the sample data that has been generated from the Hanford waste tanks would be impossible because much of the early data were not filed in readily retrievable form. Other information require recovery from incompatible computer files and interpretation by technical experts before it is useful for safety analysis.

Initially, two documents prepared by WASTREN (WHC-SD-WM-TI-543, "Radiological and Chemical Inventories for Double Shell Tanks [DSTs]" and WHC-SD-WM-TI-565, "Radionuclide and Chemical Inventories for Single Shell Tanks [SSTs]"), were used to develop the radionuclide and toxic chemical unit doses for the Accelerated Safety Analysis (ASA). The documents list the highest concentrations of radionuclides and chemicals found

in a survey of the most current sample data, prior to 1990, maintained by TWRS engineers and the WHC Tank Characterization Program. The documents do not represent all the sample data available at Hanford.

As the ASA proceeded, more sample data became available due to continued sampling and the release of additional existing data located and documented by the WHC Tank Characterization Program. It was decided that the recently available sample data should be reviewed to see if it would affect the upper bounds selected for the radiological and toxicological data.

Scatter plots of the various reported concentrations of the selected chemical analytes or radionuclides versus tanks were concluded to be the best form in which to present this data.

WHC identified 11 radionuclides and 24 chemical analytes, out of the much larger group of analyses, as those constituents that contributed over 95% activity or toxicity to the potential source term. The chemical analytes and radionuclides are:

Radionuclides		Chemical Analytes	
Am-241	Americium-241	As - Arsenic	Na - Sodium
Co-60	Cobalt-60	Ba - Barium	NaOH - Sodium Hydroxide
Cs-137	Cesium-137	Be - Beryllium	Nd - Neodymium
Cm-244	Curium-244	Ca - Calcium	NH3 - Ammonia
Eu-154	Europium-154	Cd - Cadmium	Sb - Antimony
Np-237	Neptunium-237	Ce - Cerium	Se - Selenium
Pu-238	Plutonium-238	CN - Cyanide	Sr - Strontium
Pu-239/240	Plutonium-239/240	Co - Cobalt	Te - Tellurium
Pu-241	Plutonium-241	Cr^{+3} - Chromium	Tl - Thallium
Sr-89/90	Strontium-89/90	Cr^{+6} - Chromium	U - Uranium
Y-90	Yttrium-90	Dy - Dysprosium	V - Vanadium
		Hg - Mercury	
		La - Lanthanum	

The original chemical analyte list was revised during this report preparation process to include Ca, La, Na, Ce, Dy, Nd, Sr, CN^-, and V and to remove Cu, Mn, Mo, Ni, Rh, and Sn.

To select a dataset that best would represent the waste within the 177 tanks, an effort was made to identify all the sources of samples or estimated data that was usable at this time. The following data sources were selected and believed to be the best representation of the waste within the tanks: WHC characterization library (developed into electronic data sets by ICF KH, Braun, and WASTREN); TCD; 241-B-110 and 241-U-110 core data; TRAC; and the HTCE inventory data.

Standardization and Presentation of Data

Sample information from the selected data sources were entered into EXCEL spreadsheets that were used to produce the scatter plots and tables. Due to the large number of lines of data and EXCEL's limitation in number of rows, the data was separated into five files. The scatter plots were generated by scripting the data into AutoCAD templates. The tables were produced using EXCEL templates.

The sample points on the scatter plots were differentiated by source. The WHC characterization library source was separated into three identifiable points: the Braun database was identified by a "B;" the WASTREN data set by a "W;" and the remaining data including ICF KH data, TCD, B-110 and U-110 core data were identified by an "X" with the most recent data for each tank represented by an "o." The TRAC and HTCE estimates are identified by a Δ and a □, respectfully.

Various manipulations were necessary to standardize all the data into consistent units of Becquerel/liter (Bq/L) or microgram/liter (μg/L). A set of criteria was established for preparation of this database. The data was not used if: the units were not specified; a date could not be connected to the data; the reported value was less than the detection limit; the reported value was presented in percent with no reference to weight or volume. Corrections were made to some memos or sample reports. These corrected memos or sample reports were used instead of the originals.

Additional criteria was established for certain radionuclides and chemical analytes. Originally, it was desired to separate Ni, Tl, and U based on their water solubility, but test reports did not distinguish (in)solubility, therefore, all reported values have been used. In addition, related constituents of two radionuclides and three chemical analytes were grouped together for this project. Plutonium-239/240 includes all the data for ^{239}Pu and nonspeciated Pu. The activity for $^{239/240}Pu$ was calculated using 6 weight % ^{240}Pu and 94 weight % ^{239}Pu. Strontium-90 includes all the data for $^{89/90}Sr$. NH_3 includes both NH_3 and NH_4^+ analyses. To simplify the conversion to μg/L, the molecular weight of NH_3 was used for both NH_3 and NH_4^+, since it is not known how much NH_3 is in this or the NH_4^+ form for any sample. NaOH includes all OH^- analysis as long as no NaOH analysis was reported for the same sample on the same day. For Na, if more than one sodium salt is listed for a unique sample and there is no total Na value given, all salts are summed to find the total sodium for that sample.

Preparing the information for easy interpretation required the data to be organized into a consistent format. All sample data was given a code to delineate sample state or phase. The codes and sample descriptions associated with them are as follows:

CODE	DESCRIPTION
A	Salts
D	Suspended Solids
F	Filtrate
G	Sludge
I	Composite, sludge/composite
K	Saltcake
L	Liquid/Liquor, centrifuged decant, centrate
O	Other (must be accompanied with % solids)
P	Supernatant
R	Slurry
S	Solid (including: KOH fusion, acid wash, filtered or centrifuged solids, washed or fusion solids, slurry/solids, supernatant/solids)
T	Crust
U	Unknown
Y	Slurry/Sludge

The data codes are divided into solid and liquid phases as follows:

Phase	Code
Solid	S, R, A, K, I, G, Y, D, and T O (50% solids and above)
Liquid	P, F, L, and U O (under 50% solids)

The sample data were coded according to the following criteria:

- If the memo/letter/report had a designation of the sample state, then that sample state was used and a code letter was applied.

- If the sample was divided into solid and liquid fractions in the laboratory, then the solid fraction is a solid, and the liquid fraction was considered a liquid.

- If the sample did not have a sample state specification in the table or in the accompanying report/letter/memo, but a % solids amount was given, the sample received an O (Other) and was considered a solid if it was 50% solids and over, and a liquid if under 50% solids.

- Finally, if no sample state designation was given, and no % solids amount were given, the sample received the sample code U (Unknown).

Some assumptions were made when no information was given with the sample. Chromium, if not specified, would be Cr^{+6} if it was a liquid sample and Cr^{+3} if it was a solid sample. In cases where a density was not specified with the rest of the data, and the reported value needed to be converted from a per weight basis to a per volume basis, a constant density of 1.6 gram/milliliter (g/ml) was assumed for solid and a constant density of 1.1 g/ml for liquid.

WHC requested that 8 of the 11 selected radionuclides be decayed to 12/31/94. The decayed, with their associated half-lives, and undecayed radionuclides are as follows:

Radionuclides	Half-life (yrs)
^{241}Am	432.2
^{244}Cm	18.11
^{60}Co	5.271
^{137}Cs	30.17
^{154}Eu	8.8
^{238}Pu	87.75
^{241}Pu	14.4
^{90}Sr	28.6
^{237}Np	Undecayed
$^{239/240}Pu$	Undecayed
^{90}Y	Undecayed

These half-lives were used to decay the sample data, TCD data, TRAC data, 241-B-110 core data, 241-U-110 core data, Braun data, and WASTREN data to 12/31/94. The HTCE inventory data was already decayed to 1994.

Minor inconsistencies or problems found in some of the electronic data received and their remedies were as follows.

- **TCD Data**

  — Incorrect Tank 241-SY-101 TCD data for Window E was remedied by applying the already entered dilution factors (which are actually multiplication factors in this case) to the recorded values to get the correct values and units.

  — Selenium values in Tank 241-AW-102 were recorded in microcurie/liter (μCi/L), these values were actually for Selenium-79 and not used.

— Radionuclides for Tank 241-BX-107 had units of microgram/gram (μg/g) when the actual report specified the units as microcurie/gram (μCi/g) which was remedied by changing the μg/g manually by ICF KH to μCi/g.

- **Tank 241-B-110 Core Data**

  The files contained information for cores 1, 2, 3, 4, 9, 10, and 16; whereas, the tank characterization report contained adjoining densities for cores 1, 2, 3, 4, 9, 10, and 18. It was found that core 16 information is synonymous with core 18 information.

- **Tank 241-U-110 Core Data**

  Units left out of one of the electronic files for segment information are the same as for the core composite information.

Scatter plots of the 11 radionuclides and 24 chemical analytes were broken down into the following tank groupings:

- **Radionuclides**

  — Single-shell tank liquid/radionuclides
  — Single-shell tank solid/radionuclides
  — Double-shell tank liquid (excluding aging waste tanks)/radionuclides
  — Double-shell tank solid (excluding aging waste tanks)/radionuclides
  — Aging waste tanks liquid/radionuclides
  — Aging waste tanks solid/radionuclides

- **Chemical**

  — Single-shell tank liquid/analyte
  — Single-shell tank solid/analyte
  — Double-shell tank liquid/analyte
  — Double-shell tank solid/analyte

Formatting the plots consisted of keeping a consistent horizontal and vertical axis, a consistent scale, unique tank markings, and unique data symbols. The scatter plots are specified with the tanks on the horizontal axes with darker markings delineating the beginning of each tank farm for SST plots only, and the concentration assigned to the vertical axes. A logarithmic scale was used on the vertical (concentration) axes. For radionuclides, the concentration used was Bq/L on the left vertical axis and microcuries/liter (μCi/L) on the right vertical axis (straight conversion from Bq/L, not an independent μCi/L logarithmic scale). For chemicals, the concentration used was μg/L. The flammable gas watch list tanks are distinguished from the rest of the tanks on all the plots with an extended mark above the tank index. In addition, each data source, or group of data sources, received a unique plot symbol. A list of the plot symbols and flammable gas watch list tanks is shown in Appendices A and B.

The drawing number in the title block of the plots is also included in the title of the tables to provide better coordination when using the plots and tables together. The radionuclide scatter plots include the conversion from Bq/L to μCi/L in the footnote/legend section of the plots.

Plots have been included for all specified radionuclides and chemical analytes for all ten groupings previous listed. In three incidents, no data were available but basic plots have been included for consistency. The plots with no data available include ^{90}Y for aging waste tank (AWT) solid(radionuclide) and Dy for SST liquid and Te for SST liquid (chemical analyte).

Tables were generated containing the information on the scatter plots in addition to information that appears outside the scatter plot ranges. Information included in the tables fits into two categories: tank waste characterization sample information and analyte/radionuclides information. The tank waste characterization sample information consists of tank, reported chemical/radionuclides, date, sample number, density, reported value and unit, code, sample state, and source. The analyte/radionuclides information consists of analyte/radionuclides and μg/L (for chemical analyte tables) or Bq/L and Bq/L decayed (for radionuclides tables). A row indicator is included for ASA source term activity concentration (ASA line), preliminary ASA line, when applicable, and to separate the data

above or on the plots from the data below the plots. A summary page, including the field and code interpretation information, is in front of the tables in Appendices C and D.

Data Evaluation by WHC

An evaluation process using preliminary scatter plots (complete with a line representing the preliminary ASA line) and accompanying tables was performed by a WHC panel. These plots and tables were reviewed to verify data and to validate the chosen ASA source term activity concentrations.

The review panel consisted of experienced personnel from the analytical laboratory, process chemistry, TWRS engineering, waste tank operations, and safety analysis. Data support was provided by engineers from ICF KH. The review panel used their cumulative knowledge of the Hanford chemical separations processes, references on the history of the Hanford tank farms, and files of laboratory sample reports to evaluate the sample points.

Most plots contain a preliminary ASA line that corresponds to the concentration originally obtained from the WASTREN reports. The purpose of the review was to ensure that the unit doses were an upper bound. Sample concentrations were evaluated from the highest to lowest value with the ASA line established at the first valid sample. No statistical tests or techniques have been used in this process. The process uses the available data and eliminates some data points if there are obvious errors in the data or if the sampled material is no longer present in the tank.

The following basic criteria were used to evaluate sample points:

- Was the data reported correctly (e.g., analyses of solids reported incorrectly as liquids, transcription errors, and unit conversion errors)?

- Was an analytical result actually a "less than" value (below detection limits)?

- Is the sampled material still present in the tank? Generally, the most recent sample analysis is used unless the analysis is suspect for some reason.

- The analysis may be valid, but the sampled material is now overlaid with several feet of saltcake and, therefore, is considered not available for release.

The panel documented their rationale for rejecting or accepting sample points on the scatter plots and on separate Concentration Data Evaluation forms that were filed with the scatter plots. A complete set of notes from the review panel meetings is contained in WHC-SD-WM-CN-014, "Notes from WHC Review of Sample Records for TWRS Accelerated Safety Analysis."

The review panel provided guidelines for total organic carbon (TOC) and oxalate concentrations rather than using data plots. The highest credible liquid sample datum for TOC is 40 g/l taken from Tank AN-107. The material is an accumulation of supernate from saltwell pumping of SSTs representing a bounding concentration for SSTs, DSTs, and AWF tanks. For a solids concentration, information about Tanks AN-107 and SY-101 solids were used. Samples from Tank SY-101 show that the concentration of organics in solids are about 50% higher in the solid phase than in the liquid phase. Since Tank SY-101 contains proportionally more complex concentrate than other Hanford tanks, it is assumed that the 50% higher concentration is a bounding case. Therefore, a solids concentration bounding case would be 1.5 times 40 g/l or 60 g/l TOC in the solids phase.

Oxalate is essentially insoluble in the waste liquid. It is also about 50% of the TOC in the solids. The oxalate concentration can be calculated by taking half the TOC reported for the solid and adjusting for the molecular weight of oxalate.

As the reviews and guidelines were completed, the recommended concentrations for each radionuclide and chemical were provided to the WHC Criticality and Radiological Analyses group for calculation of unit doses. The radionuclide and toxic chemical concentrations developed by the panel are shown in Tables 1 and 2 in Appendix E.

During the review of the sample results, additional requests for different groupings of radionuclides and toxic chemicals were made. These requests were for subsets of the original ten groups. The subsets were developed from accident scenarios that applied only to certain tanks. Therefore, it is reasonable to create subsets of sample concentrations

from data taken for the selected tanks rather than data for all the tanks. The following additional subsets (groupings) are included in Tables 1 and 2 of Appendix E.

Radionuclides

- SST combined liquid and solid from the Flammable Gas Watch List tanks.
- DST combined liquid and solid from the Flammable Gas Watch List tanks.
- SST liquids, excluding Tanks 241-C-106, -C-107, -T-104, -U-105, -U-107, -U-109, and -AX-102.

Toxic Chemicals

- DST solids from Flammable Gas Watch List tanks.

Additional scatter plots were not prepared for the four new subsets. The review panel used copies of the existing scatter plots to evaluate the data. A combined value was requested for the first two radionuclide subsets; therefore, the higher of the liquid or solid concentrations for each radionuclide is reported in Table 1 of Appendix E.

Only the calculated concentrations from TRAC above the ASA lines were plotted on the scatter plots, but all data are included in the tables. However, TRAC concentrations were not used to establish the source terms. The TRAC data were not considered useful for the following reasons:

1. Data input to the TRAC program ended in 1980.
2. At the time TRAC was written, the production figures for plutonium were still secret and the TRAC equations for plutonium and related isotopes were deliberate guesses.
3. The TRAC program was originally designed to track only specific radioisotopes and not chemicals.

The calculated concentrations taken from WHC-SD-WM-ER-349 and WHC-SD-WM-ER-352, collectively referred to as the HTCE inventory data, were plotted on the scatter plots. The HTCE inventory concentrations were not used to establish the source terms. The HTCE inventory data were not used to define concentrations because many tanks, including the DSTs, need to be completed and unpublished tank data have not been peer reviewed by WHC.

The WHC panel review resulted in changes to some of the ASA source term activity or concentration for some radionuclides and chemical analytes. In addition, some of the chemical analytes and radionuclides were deemed as not having a significant effect on the total dose consequence, therefore, no change in the ASA source term activity concentrations was necessary. These changes, including preliminary and final ASA source term activity concentrations, are reflected and presented on the plots and tables in Appendices A through D.

In the process of completing this task, a tank waste chemical constituent list compiling all the information available from the WHC characterization library and TCD was completed (see Appendix F). In addition, a sample analysis table for lithium is included in Appendix G (this is not one of the 24 plotted chemicals). Appendix H contains all the sample references, separated by tank, that were used to create the electronic data set.

A request was received from Tank Farm Safety Engineering to perform a similar data screening for Tank 241-C-106 to support development of a source term for the safety analysis being performed for project W-320. ICF KH provided a plot of the requested data and the accompanying tables. This information was reviewed by the WHC panel, and concentrations for the radionuclides and toxic chemicals were developed specifically for Tank 241-C-106. The concentrations, as well as the plot and tables, are included in Appendix I.

UNCERTAINTIES AND RECOMMENDATIONS FOR FURTHER STUDY

Most chemical and radionuclide sample analyses from the WHC Characterization library were input into a consistent spreadsheet format. However, since the scope of this work

was limited to the 11 radionuclides and 24 chemical analytes requested, only the information for these have been checked for accuracy. The data was found to be easily structured for a database. It is our recommendation that the database should be completed from all the information on spreadsheets with proper checking of the data over and above that in the initial 11 radionuclides and 24 chemical analytes.

REFERENCES

1. Brevick, C. H., L. A. Gaddis, and W. W. Pickett, June 1994, Historical Tank Content Estimate Report for the Northeast Quadrant of the Hanford 200-East Area, WHC-SD-WM-ER-349, Rev. 0, ICF Kaiser Hanford Company, Richland, Washington.

2. Brevick, C. H., L. A. Gaddis, and W. W. Pickett, June 1994, Historical Tank Content Estimate Report for the Southwest Quadrant of the Hanford 200-East Area, WHC-SD-WM-ER-352, Rev. 0, ICF Kaiser Hanford Company, Richland, Washington.

3. Cowley W. L., Letter Of Instruction (external letter 9457188 to R. B. Johnson, October 18), Westinghouse Hanford Company, Richland, Washington.

4. Davis, J. S., June 1994, Toxic Chemical Considerations for Tank Farm Releases, WHC-SD-WM-SARR-011 Rev. 0, Westinghouse Hanford Company, Richland, Washington.

5. Hanlon, B. M., November 1994, Waste Tank Summary for Month Ending September 30, 1994, WHC-EP-0182-78, Westinghouse Hanford Company, Richland, Washington.

6. Savino, A. V., June 1994, Tank Farm HLW Compositions and Atmospheric Dispersion Coefficients for use in ASA Consequence Assessments, WHC-SD-WM-SARR-016, Westinghouse Hanford Company, Richland, Washington.

APPENDICES

Appendix A. Radionuclides Plots

Appendix B. Chemical Analyte Plots

Appendix C. Radionuclides Tables (Volume II)

Appendix D. Chemical Analyte Tables (Volume II)

Appendix E. Source Term Concentrations

Appendix F. Complete Tank Waste Chemical Concentration List

Appendix G. Tank Waste Characterization Sample Analysis Lithium (Li) Information Table

Appendix H. Sample References

Appendix I. Tank 241-C-106 Sample Information

APPENDIX A

Radionuclide Plots

Scatter Plot Symbols and Concentration Information

The symbols used on the scatter plots for the respective sample data sources are defined below:

o	-	most recent (highest value if many on that date) raw data per tank for that constituent
x	-	all other raw data; all other data from the WHC Characterization library, TCD, 241-B-110 and 241-U-110 core information
□	-	HTCE Inventory data, only available for a select number of Single-Shell Tank solid radionuclides and chemical analytes
Δ	-	TRAC data, only those points that are above the ASA Source Term Activity Concentration
B	-	Tank Sample Analysis Datafile (TSAD) (Braun Data)
W	-	WASTREN data
———	-	ASA Source Term Activity Concentration, or revised ASA Source Term Activity Concentration if the value has changed due to panel review
- - - - - -	-	Preliminary ASA, Preliminary ASA Source Term Activity Concentration (based on WASTREN data)

The unit of concentration for the chemical plots is microgram/liter (μg/L). Two different units of concentration are shown on the radionuclide plots, Becquerel/liter (Bq/L) and microcurie/liter (μCi/L). Note that the two axes do not show independent logarithmic scales, but a straight conversion from Bq/L to μCi/L. The conversion from Bq/L to μCi/L is given below, and is also given in the legend section of the plot.

$$\mu Ci/L = \frac{Bq/L}{3.7E+4}$$

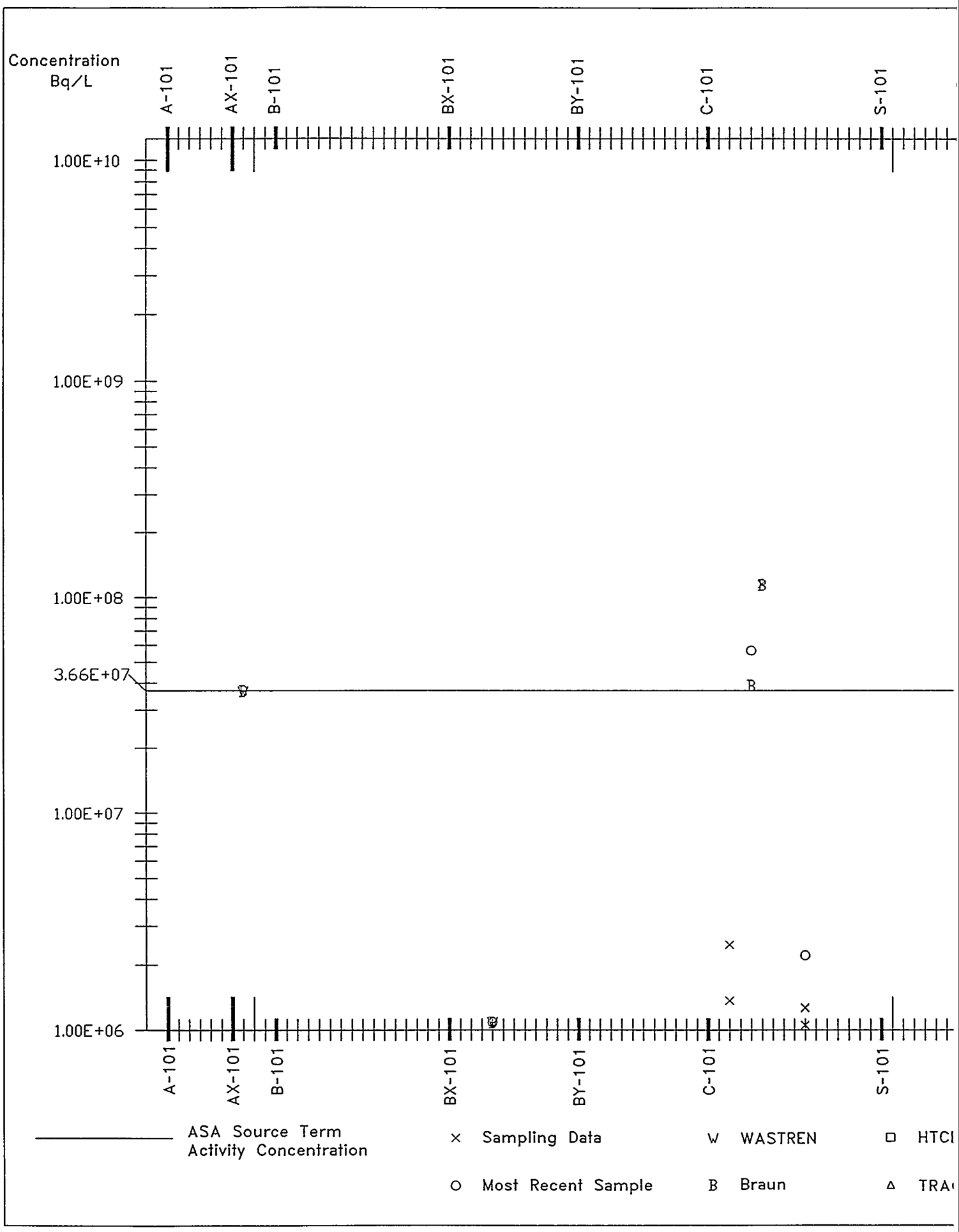
Delineated Flammable Gas Watch List Tanks

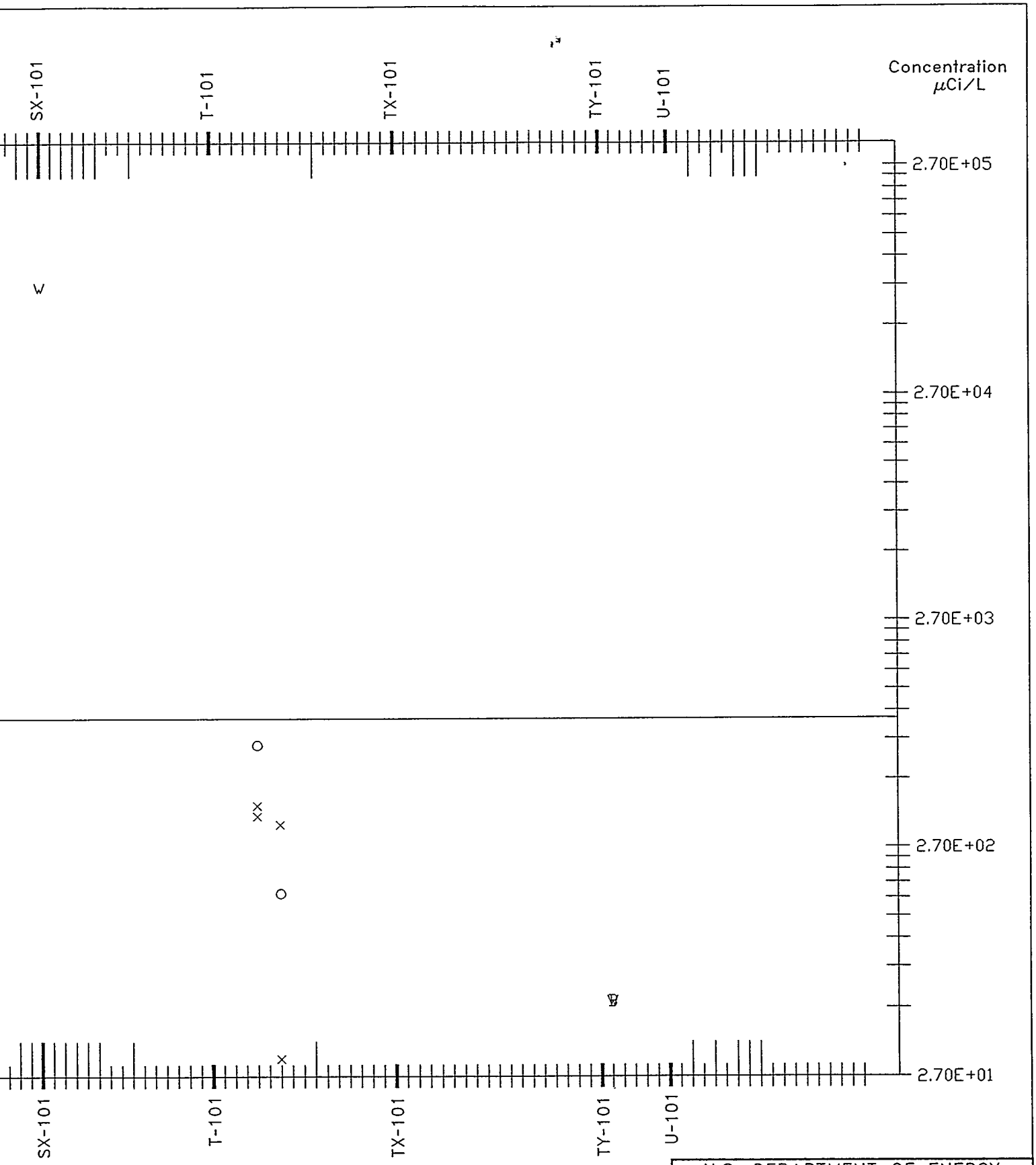
The Flammable Gas Watch List tanks taken from WHC Waste Tank Summary for Month Ending September 30, 1994 (Hanlon, 1994) are indicated on the scatter plots with extended tank index marks. A list of these is given below.

Flammable Gas Watch List Tanks			
Single-Shell Tanks			Double-Shell Tanks
241-A-101	241-SX-102	241-U-103	241-AN-103
241-AX-101	241-SX-103	241-U-105	241-AN-104
241-AX-103	241-SX-104	241-U-107	241-AN-105
241-S-102	241-SX-105	241-U-108	241-AW-101
241-S-111	241-SX-106	241-U-109	241-SY-101
241-S-112	241-SX-109		241-SY-103
241-SX-101	241-T-110		

A list of the 11 Radionuclide and 24 Chemical Analyte Scatter Plots (in order of appearance) is given below.

Radionuclide and Chemical Analyte Scatter Plots			
Radionuclides		Chemical Analytes	
Am-241	Americium-241	As - Arsenic	Na - Sodium
Co-60	Cobalt-60	Ba - Barium	NaOH - Sodium Hydroxide
Cs-137	Cesium-137	Be - Beryllium	Nd - Neodymium
Cm-244	Curium-244	Ca - Calcium	NH3 - Ammonia
Eu-154	Europium-154	Cd - Cadmium	Sb - Antimony
Np-237	Neptunium-237	Ce - Cerium	Se - Selenium
Pu-238	Plutonium-238	CN - Cyanide	Sr - Strontium
Pu-239/240	Plutonium-239/240	Co - Cobalt	Te - Tellurium
Pu-241	Plutonium-241	Cr+3 - Chromium $^{+3}$	Tl - Thallium
Sr-89/90	Strontium-89/90	Cr+6 - Chromium $^{+6}$	U - Uranium
Y-90	Yttrium-90	Dy - Dysprosium	V - Vanadium
		Hg - Mercury	
		La - Lanthanum	


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+10
1.00E+09
1.00E+08
3.66E+07
1.00E+07
1.00E+06
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCI
TRA



Inventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

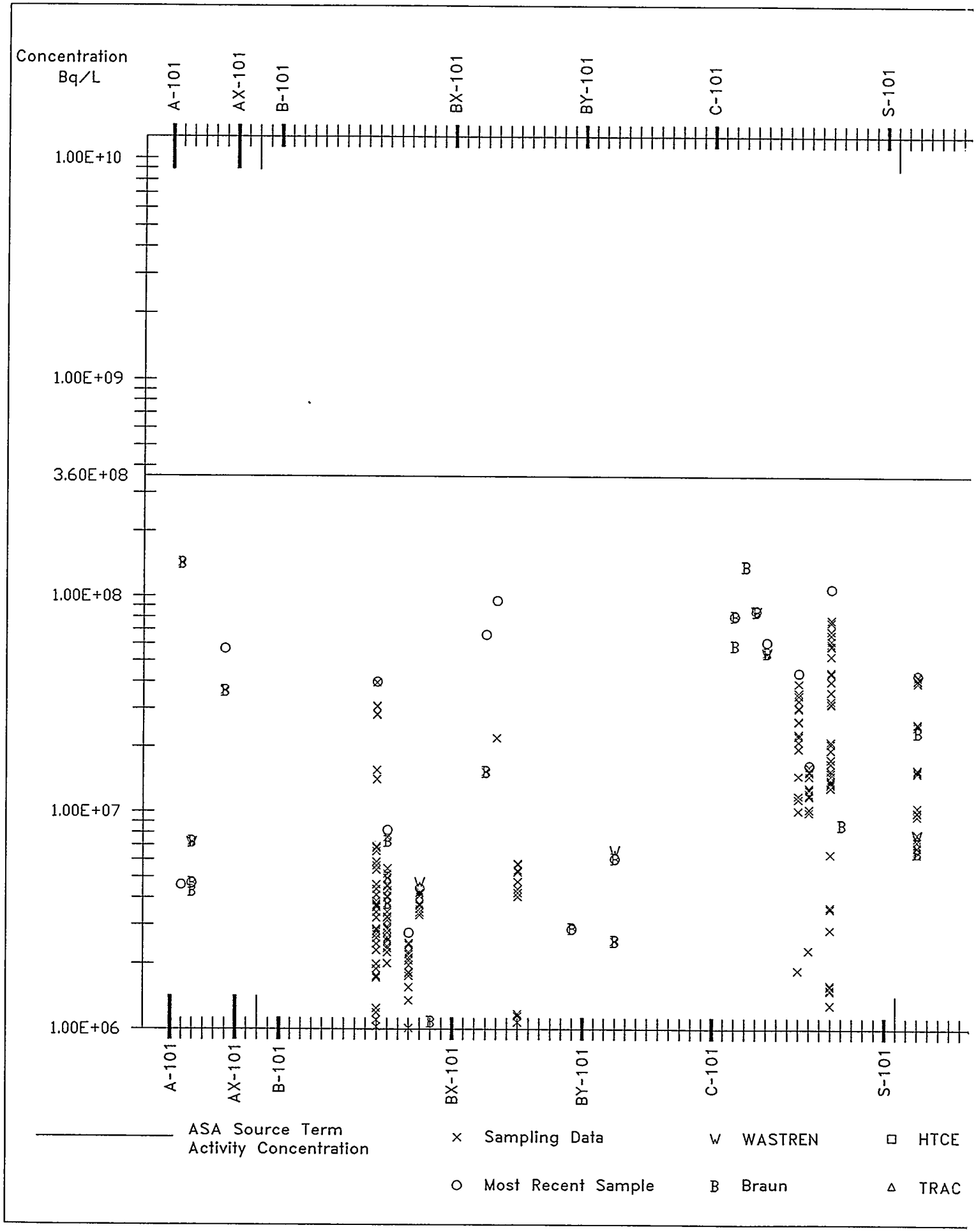
Extented tank lines represent Flamable Gas Watch List Tanks.

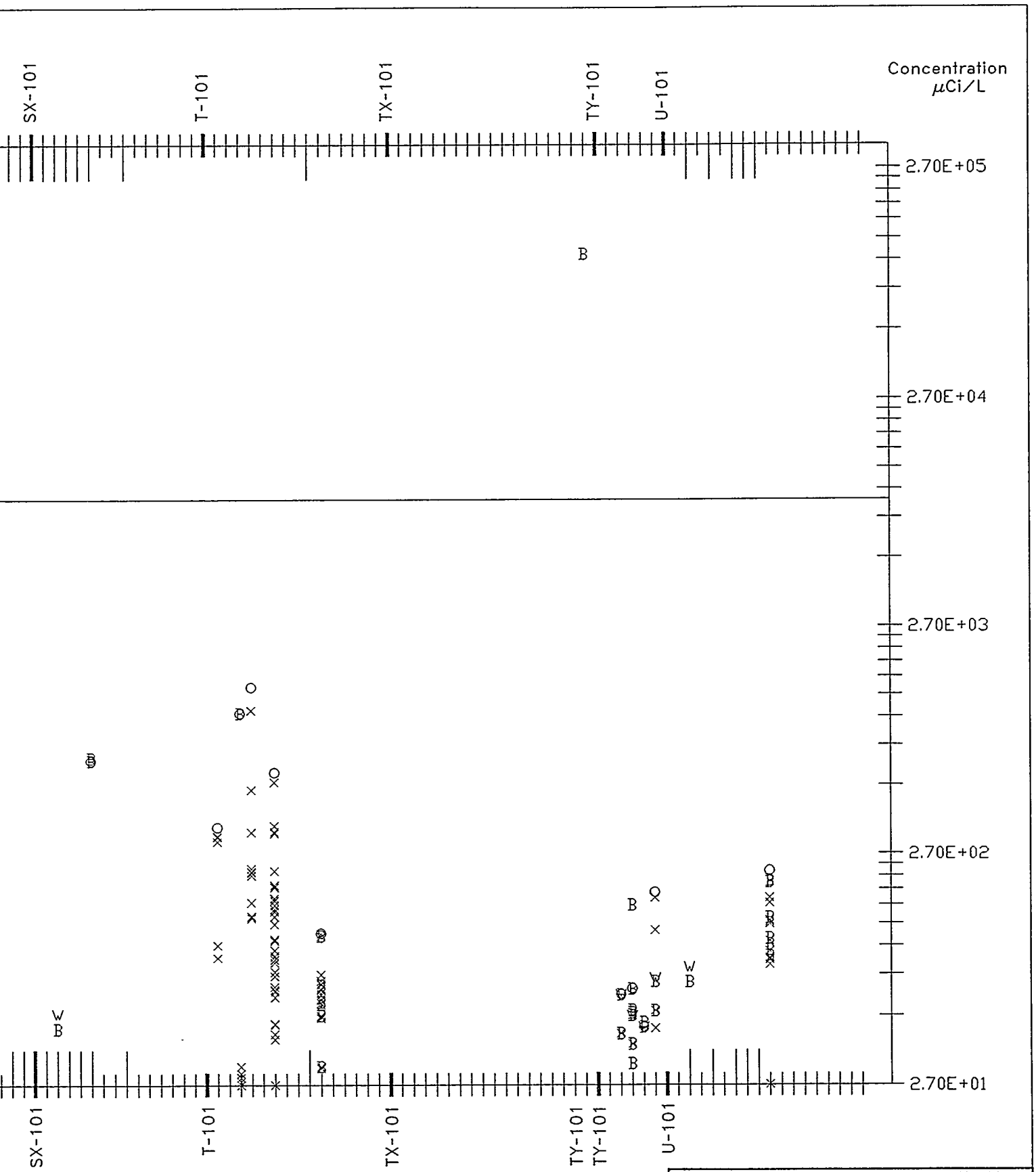
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Am241 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR01 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+10
1.00E+09
3.60E+08
1.00E+08
1.00E+07
1.00E+06
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



Inventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

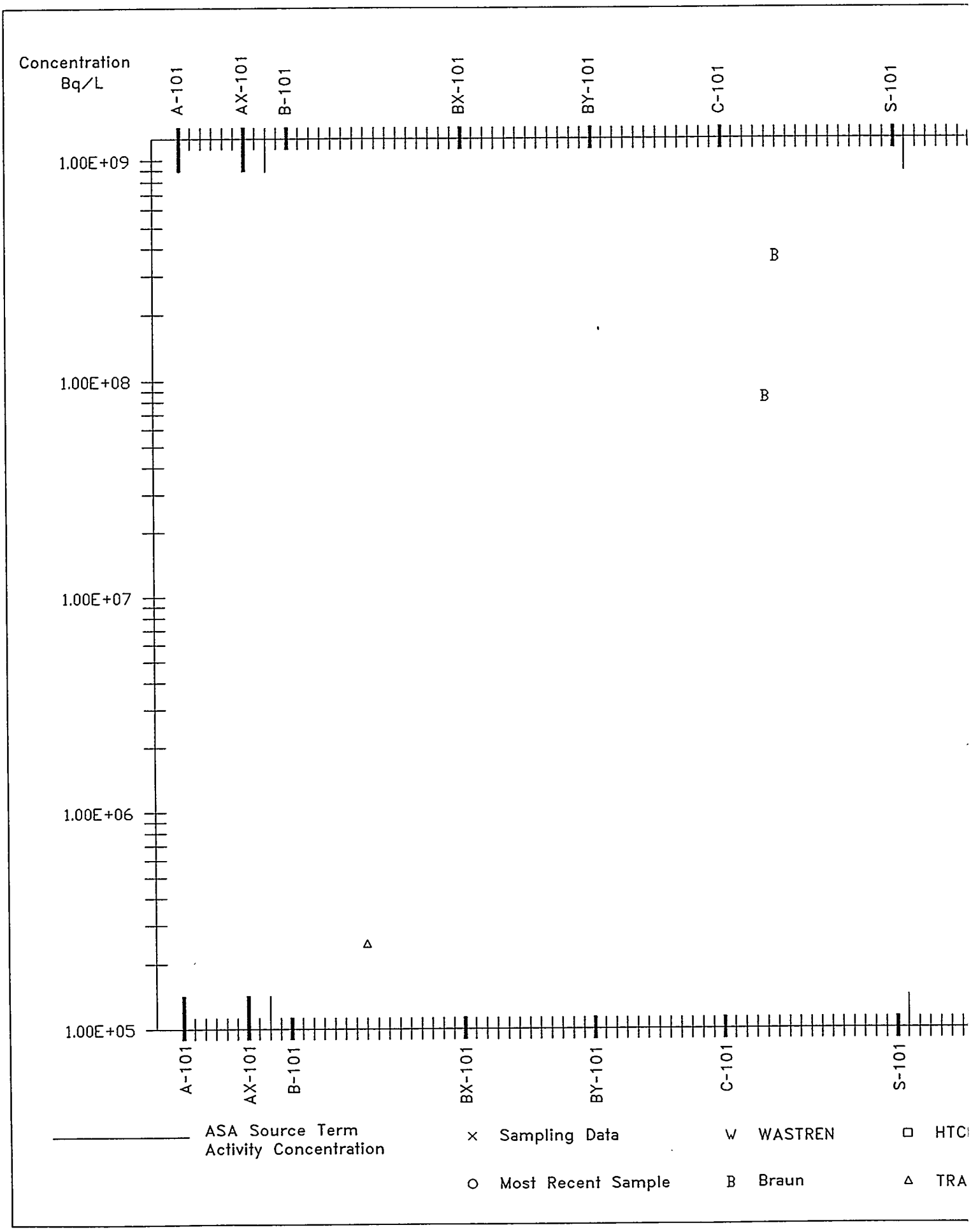
Extented tank lines represent Flamable Gas Watch List Tanks.

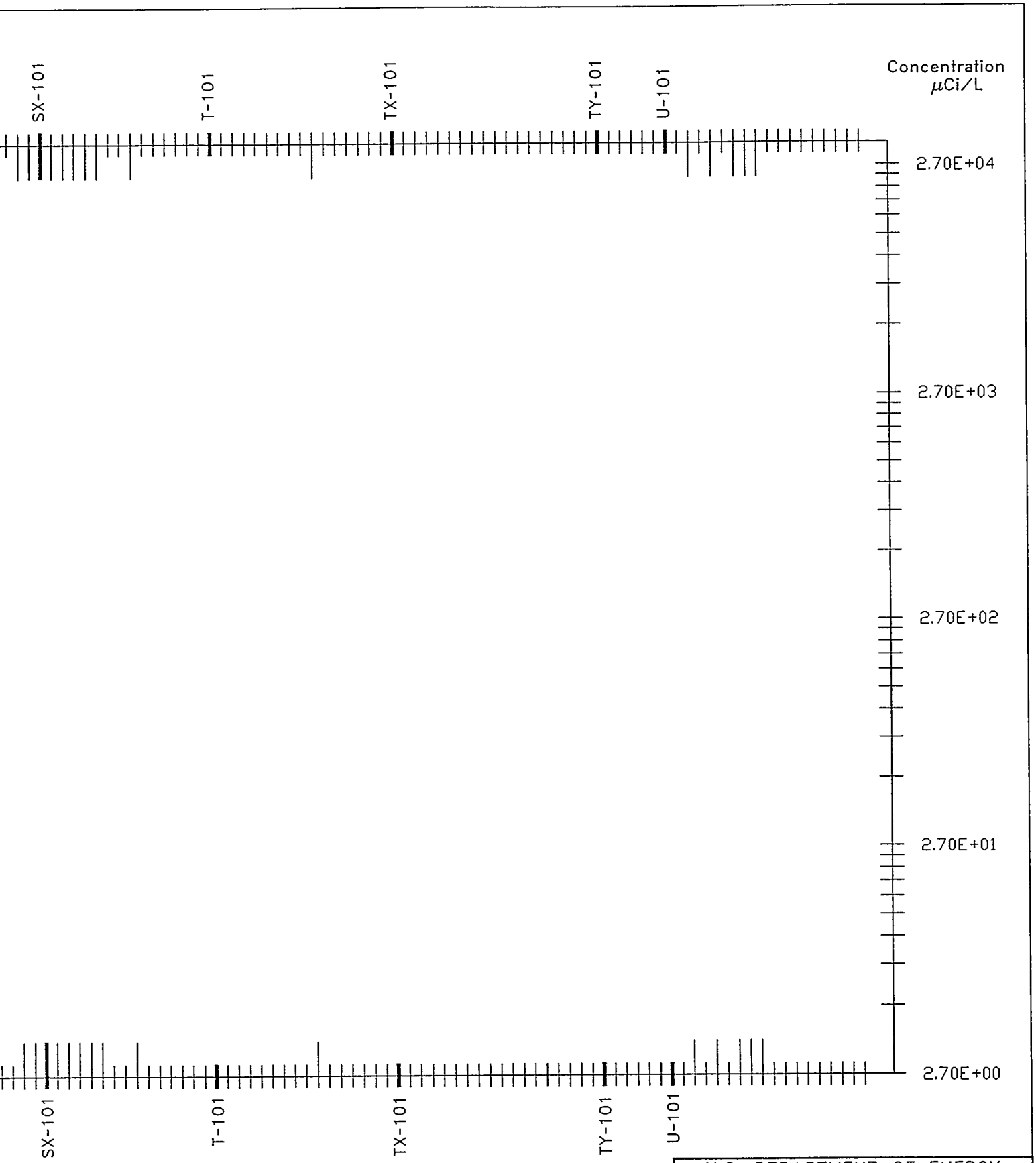
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Am241 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR02 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+09
1.00E+08
1.00E+07
1.00E+06
1.00E+05
B
B
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTC
TRA



Inventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

Extented tank lines represent Flamable Gas Watch List Tanks.

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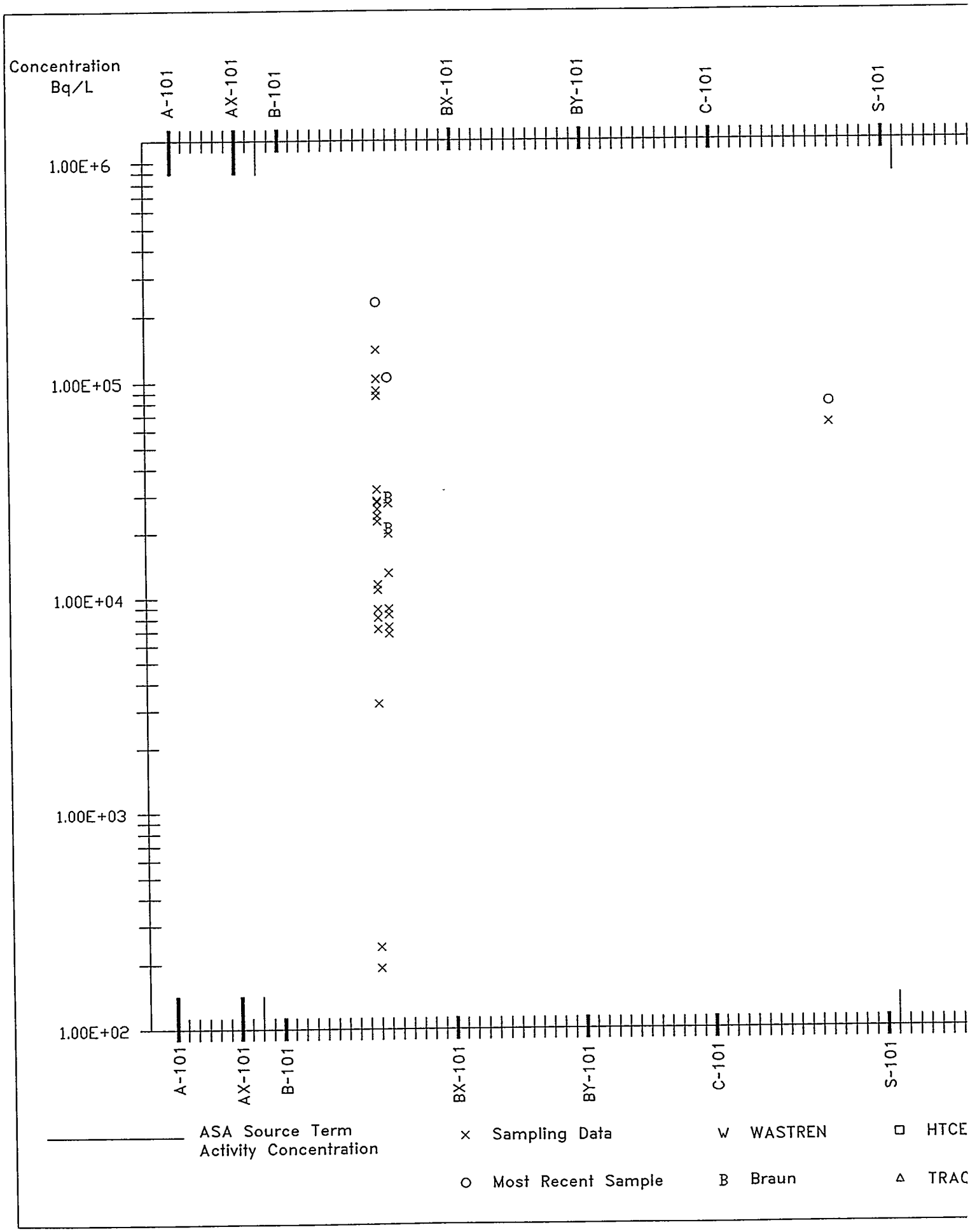
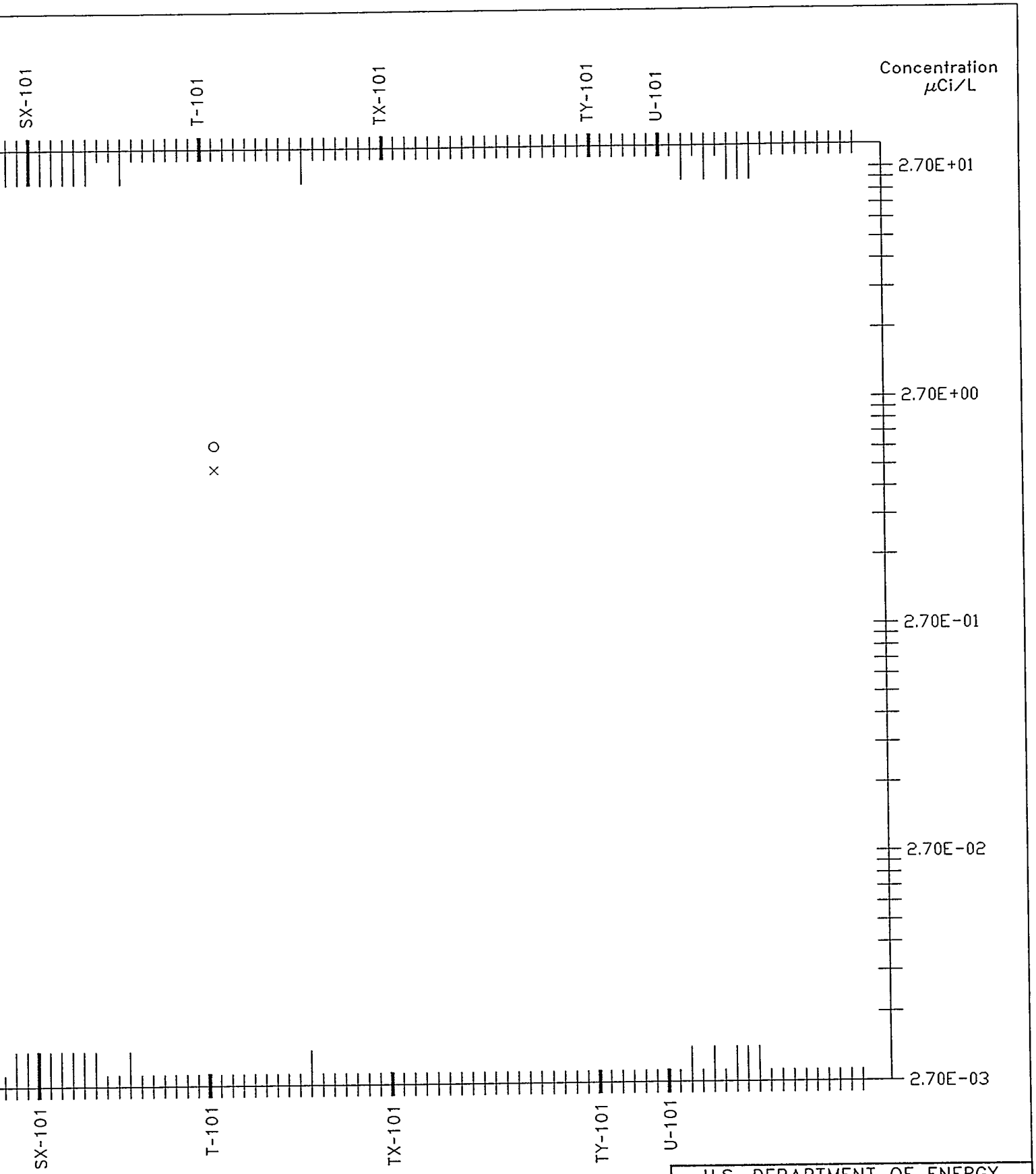
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Cm244 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR03 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+6
1.00E+05
1.00E+04
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



Inventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

Extented tank lines represent Flamable Gas Watch List Tanks.

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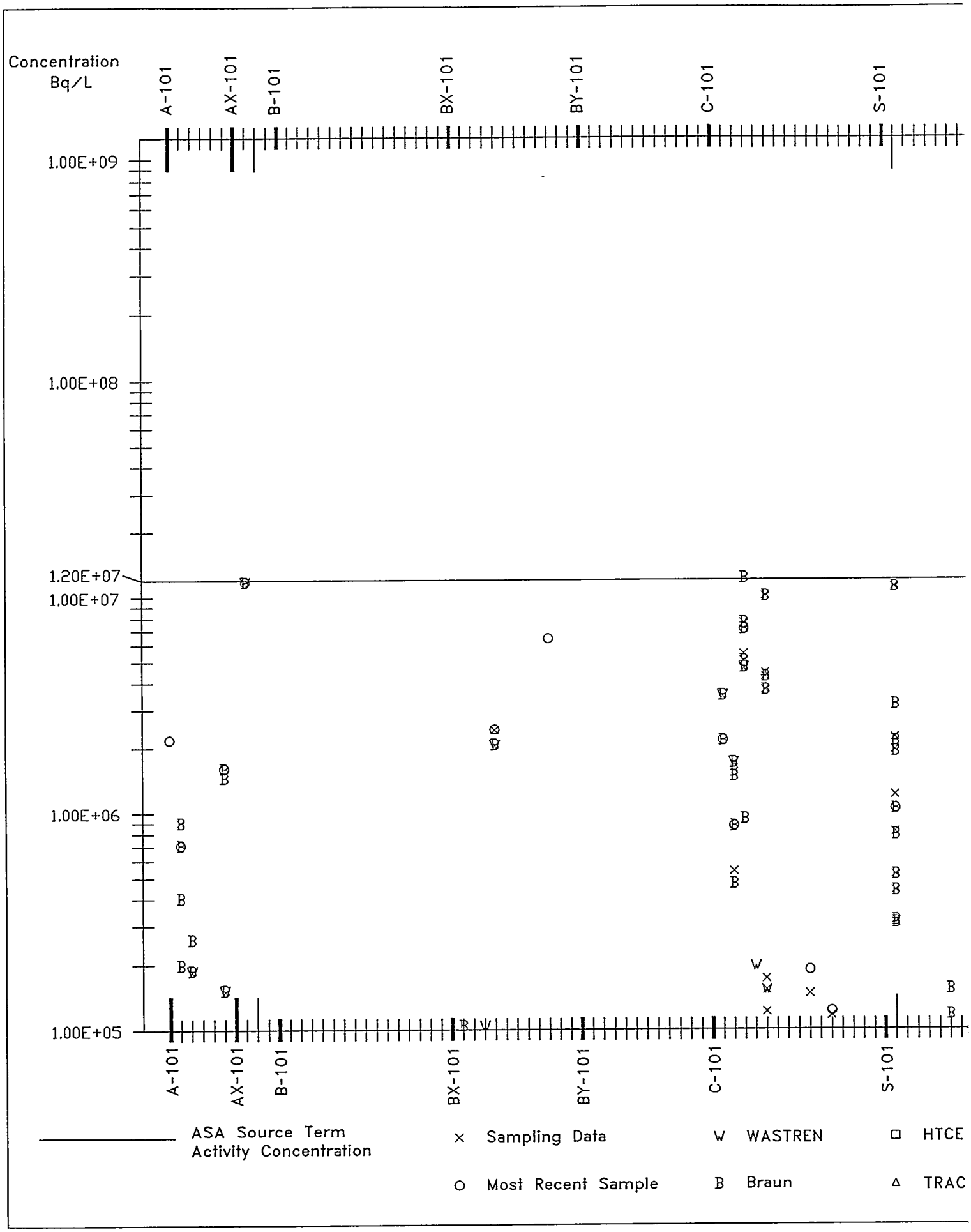
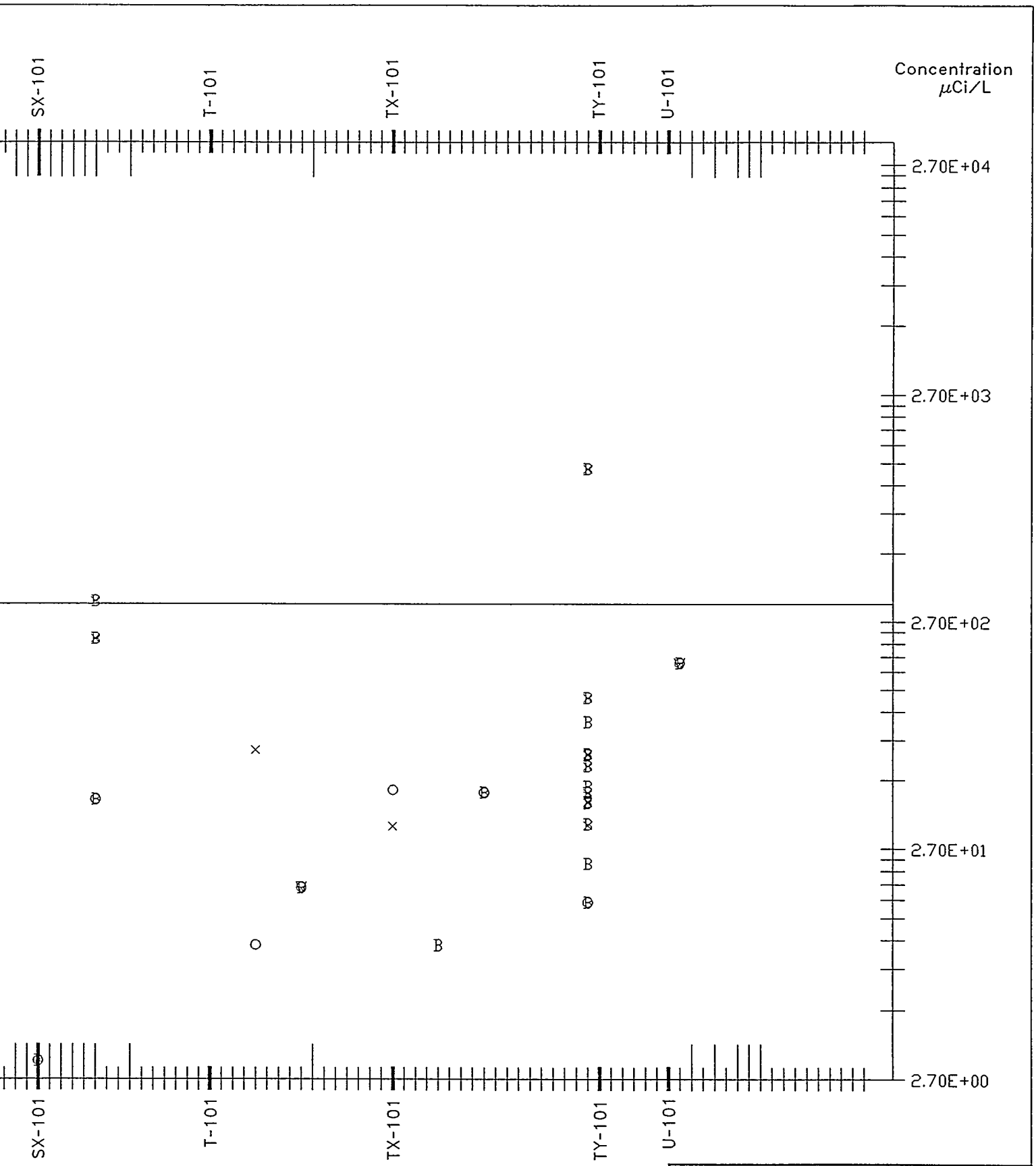
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Cm244 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No.	JOB NO.	Date
ES-VAL-CR04	E01595	4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+09
1.00E+08
1.20E+07
1.00E+07
1.00E+06
1.00E+05
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



Inventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

Extented tank lines represent Flamable Gas Watch List Tanks.

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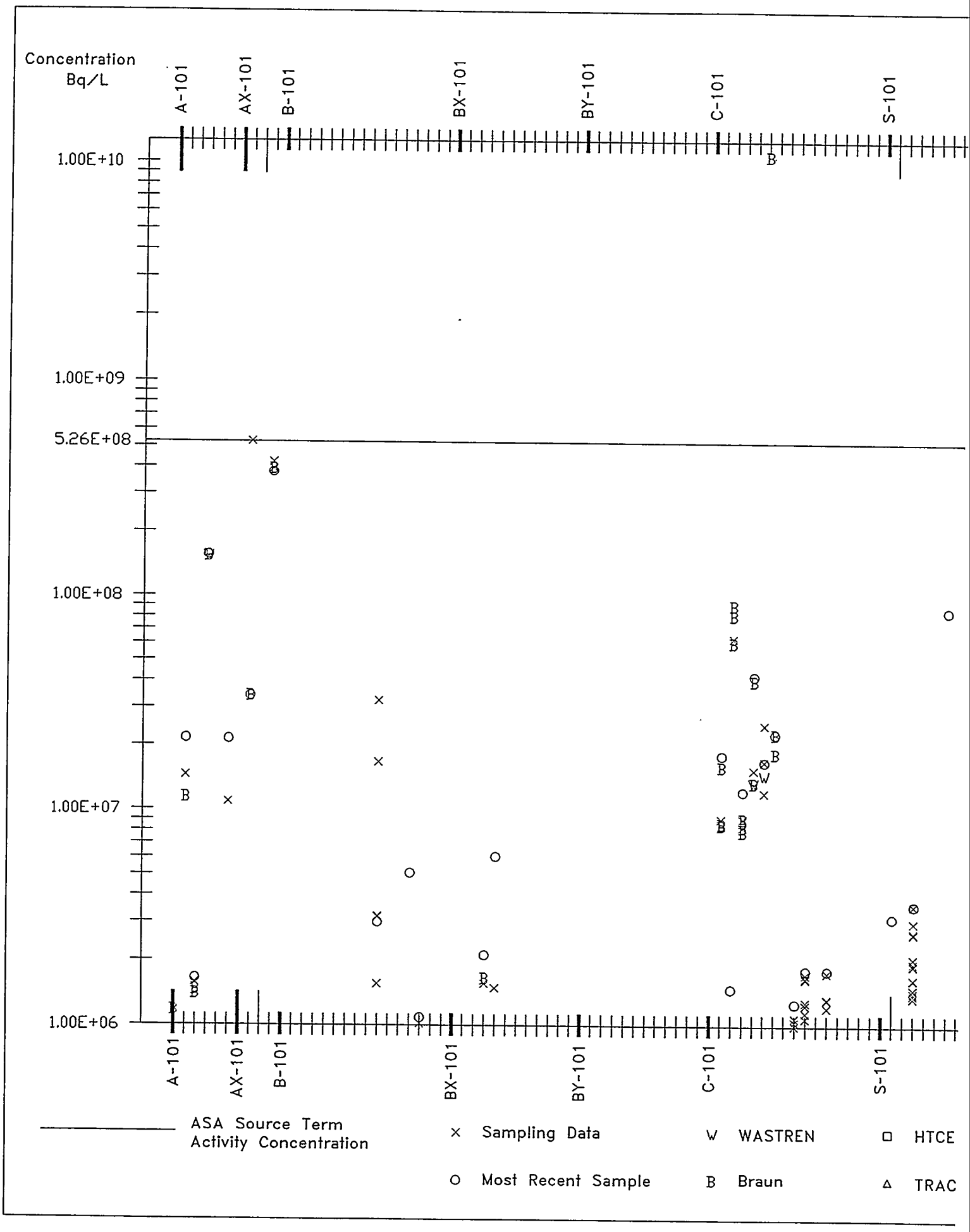
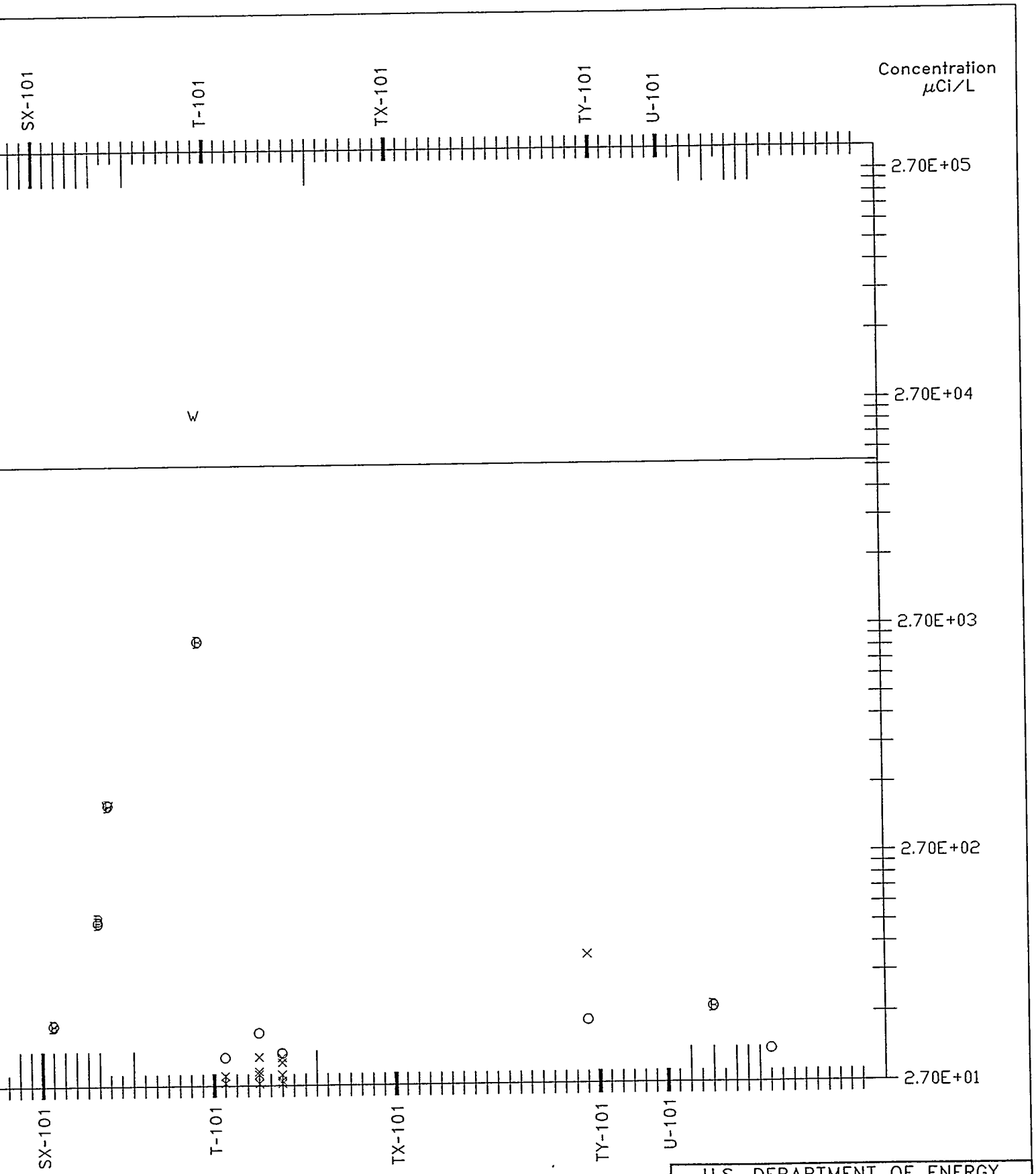
SINGLE-SHELL WASTE TANKS
Co60 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR05 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+10
1.00E+09
5.26E+08
1.00E+08
1.00E+07
1.00E+06
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



Inventory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

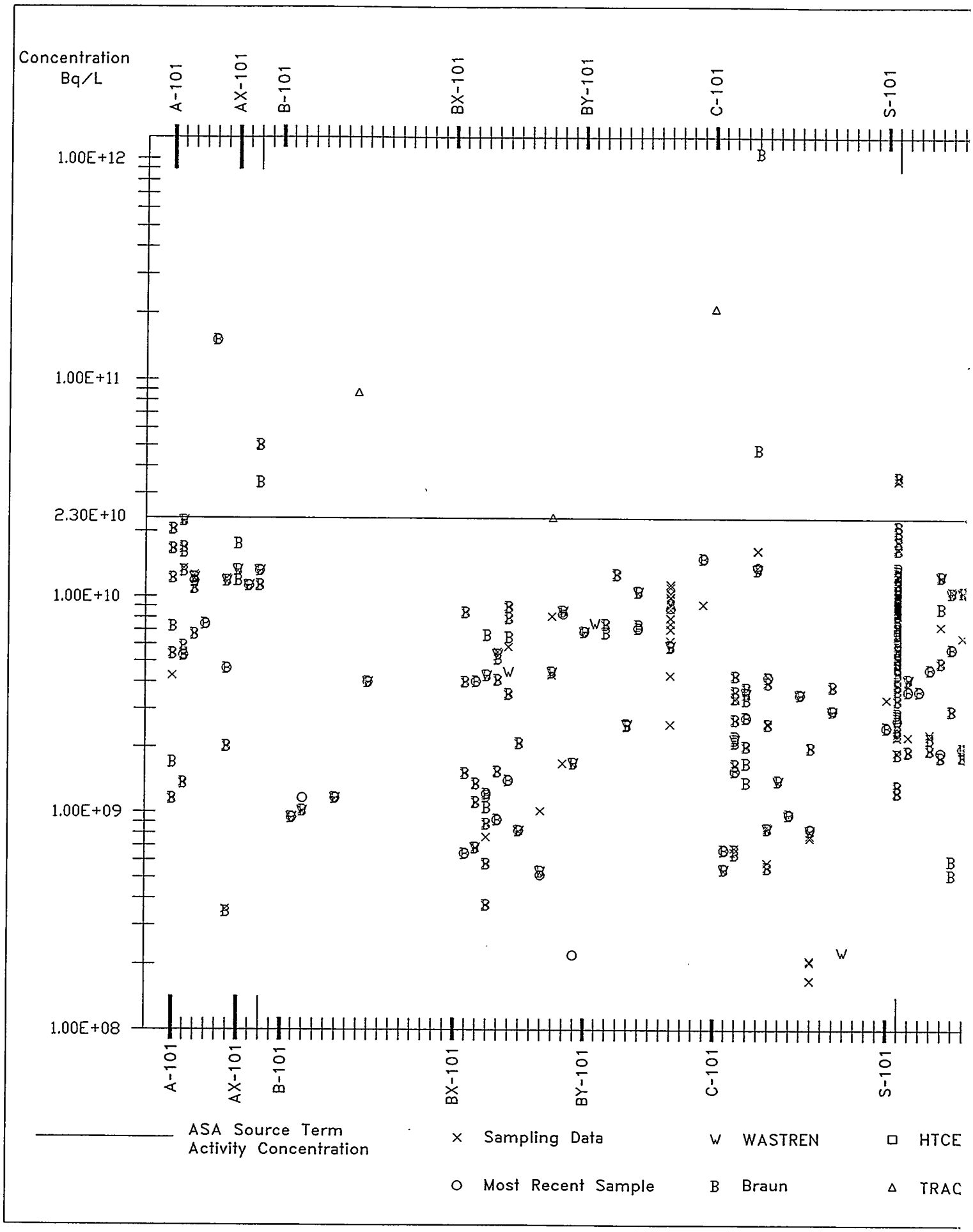
Extented tank lines represent Flamable Gas Watch List Tanks.

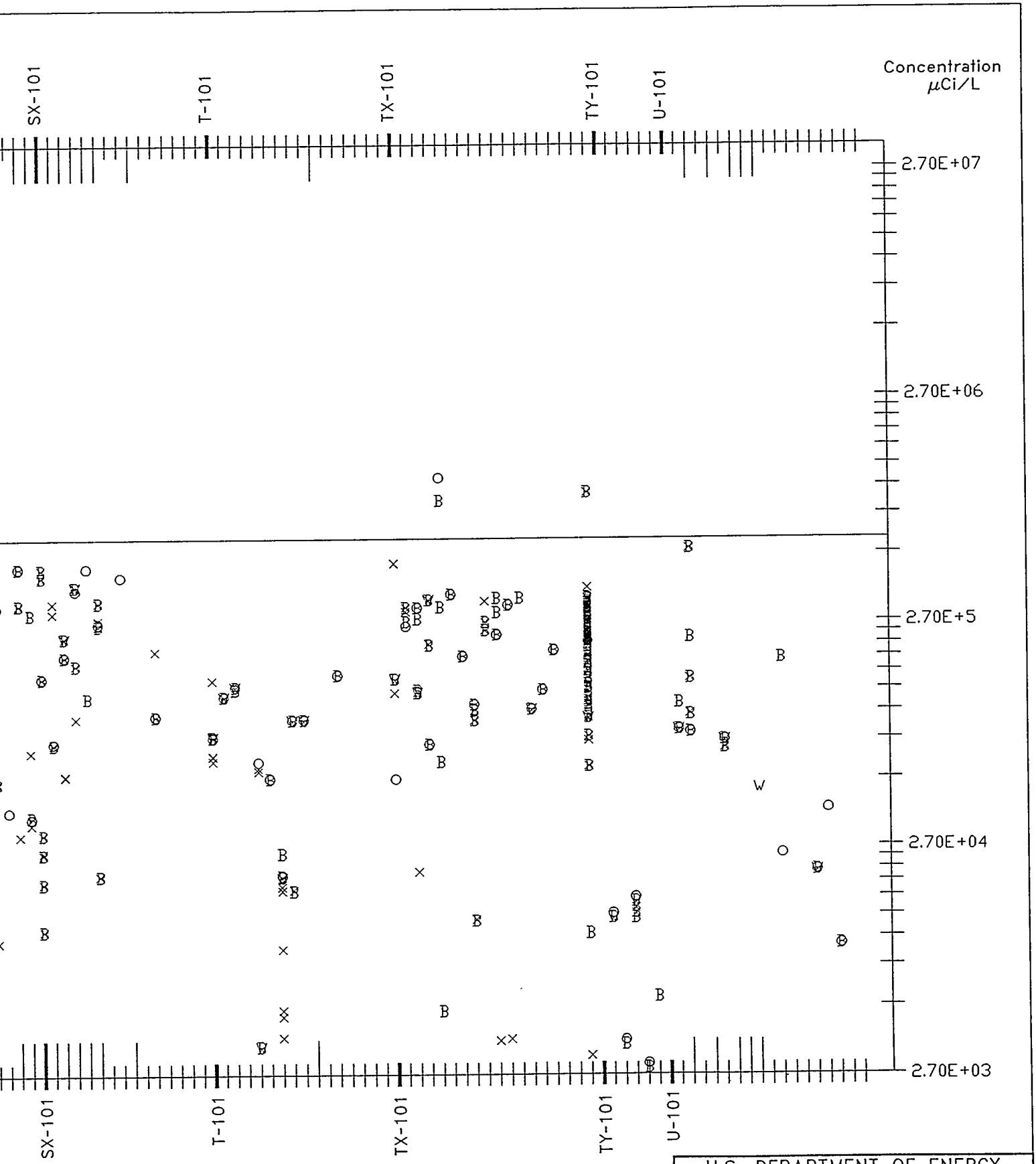
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Co60 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR06 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+12
1.00E+11
2.30E+10
1.00E+10
1.00E+09
1.00E+08
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



Inventory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

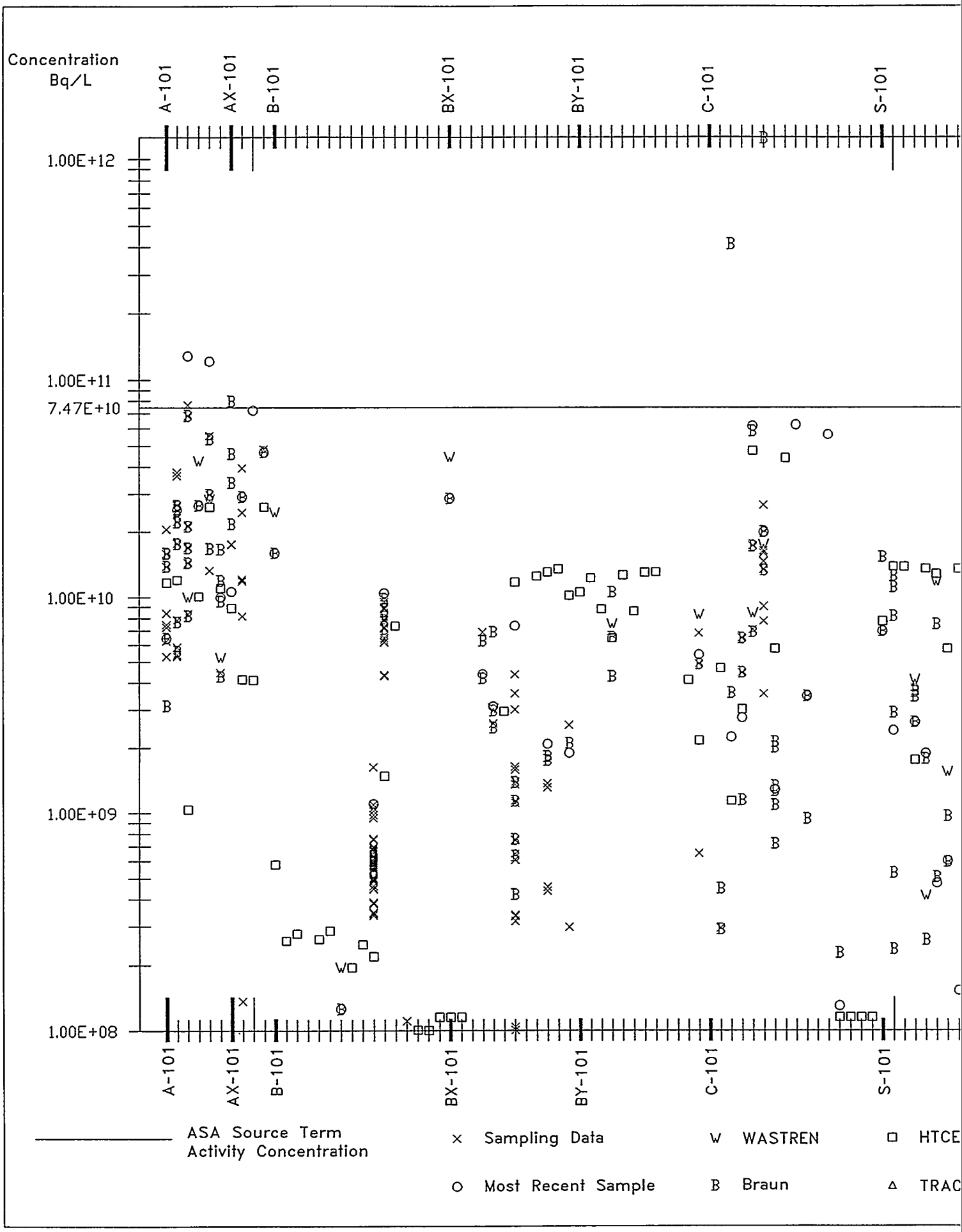
Extented tank lines represent Flamable Gas Watch List Tanks.

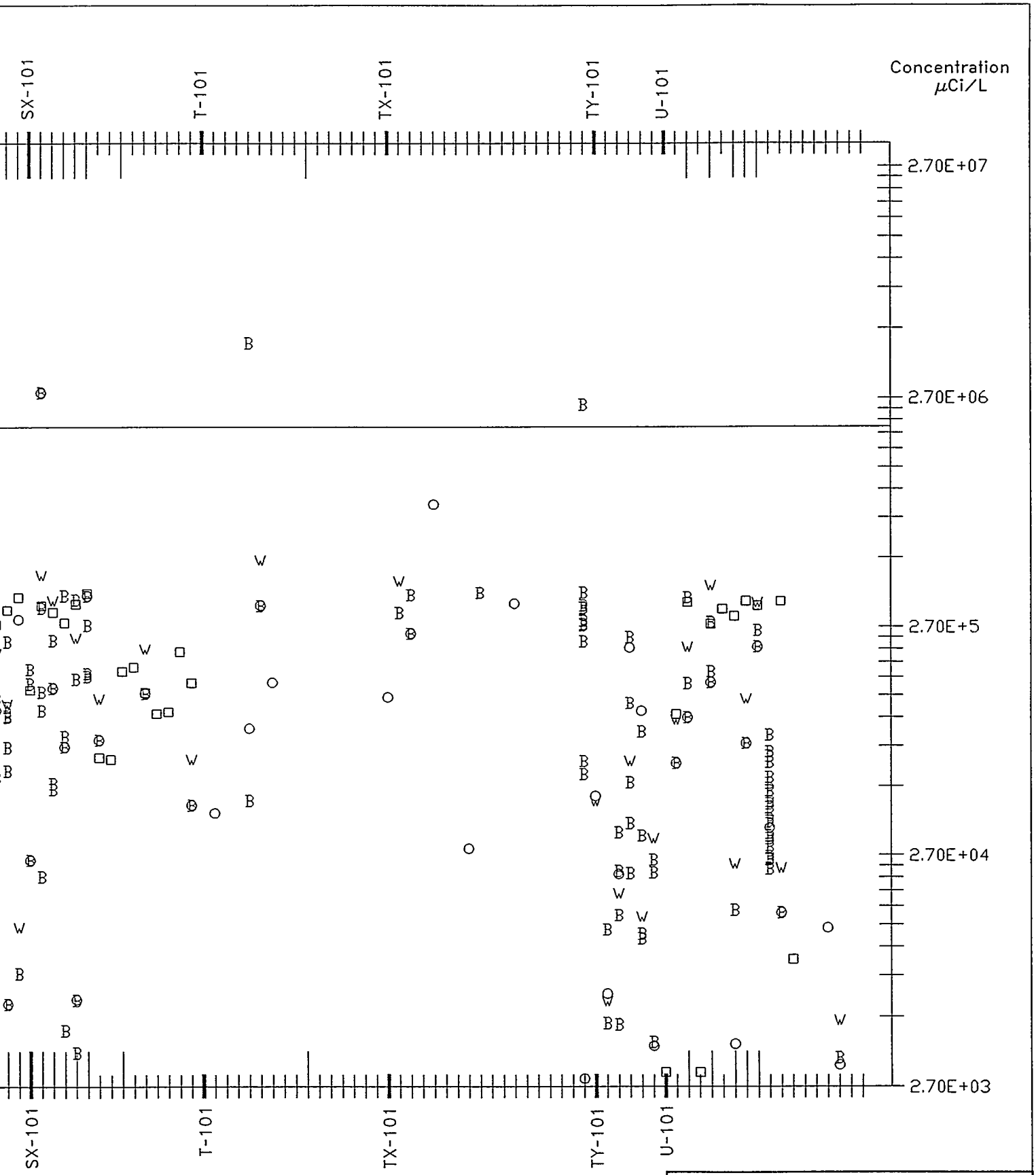
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Cs137 Liqiud

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No.	JOB NO.	Date
ES-VAL-CR07	E01595	4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+12
1.00E+11
7.47E+10
1.00E+10
1.00E+09
1.00E+08
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



nventory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

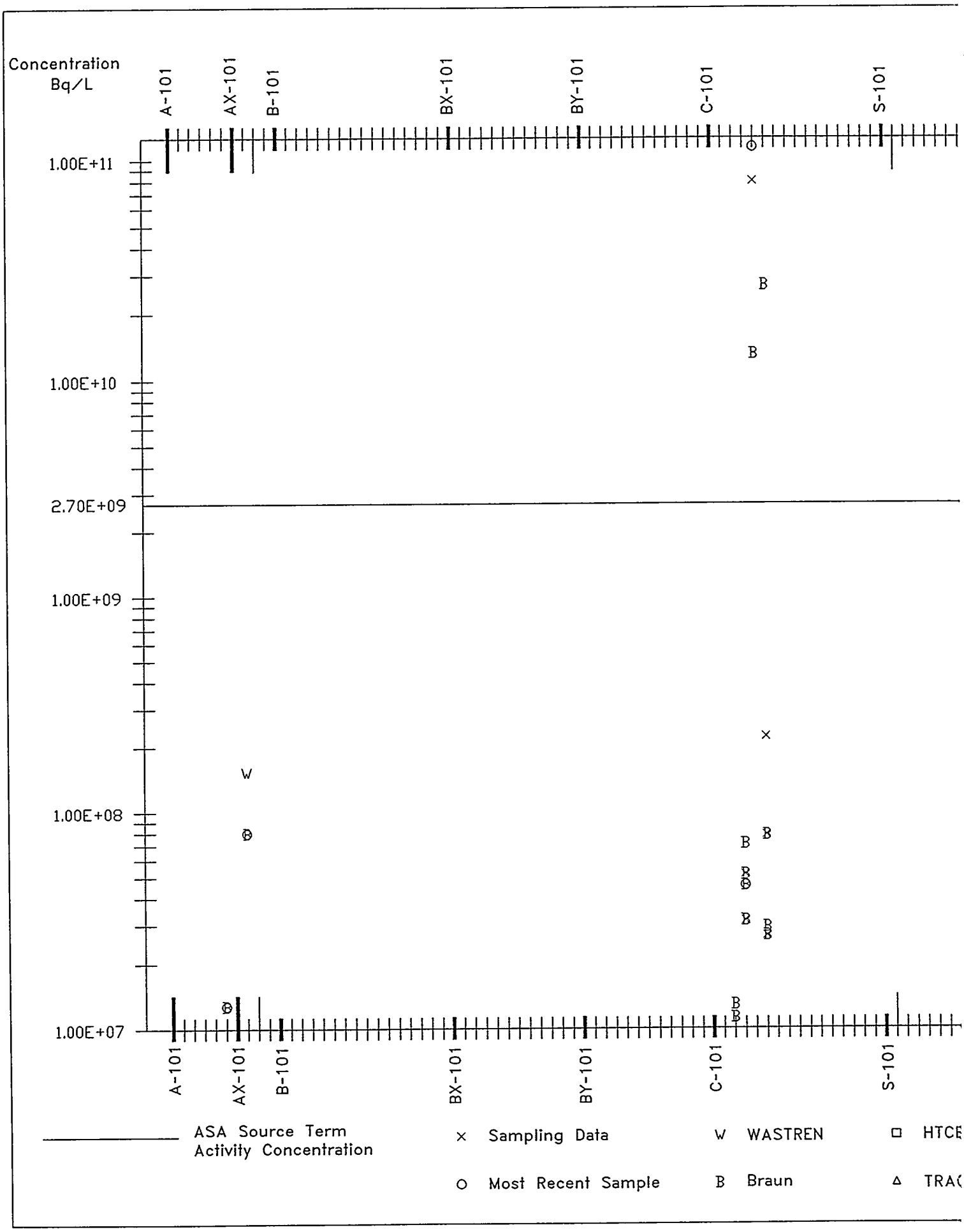
Extented tank lines represent Flamable Gas Watch List Tanks.

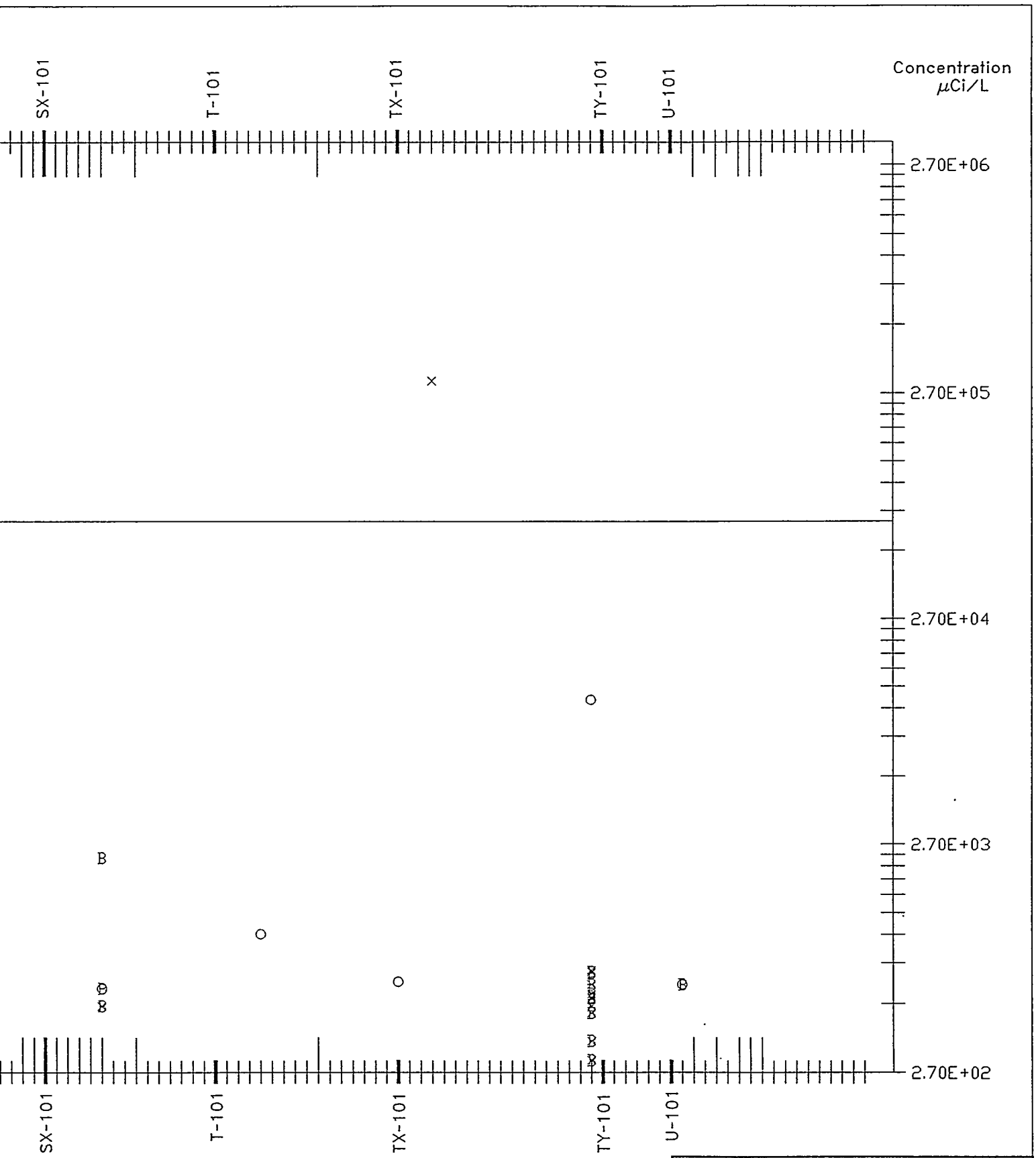
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Cs137 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR08 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+11
1.00E+10
2.70E+09
1.00E+09
1.00E+08
1.00E+07
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRA(



Inventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

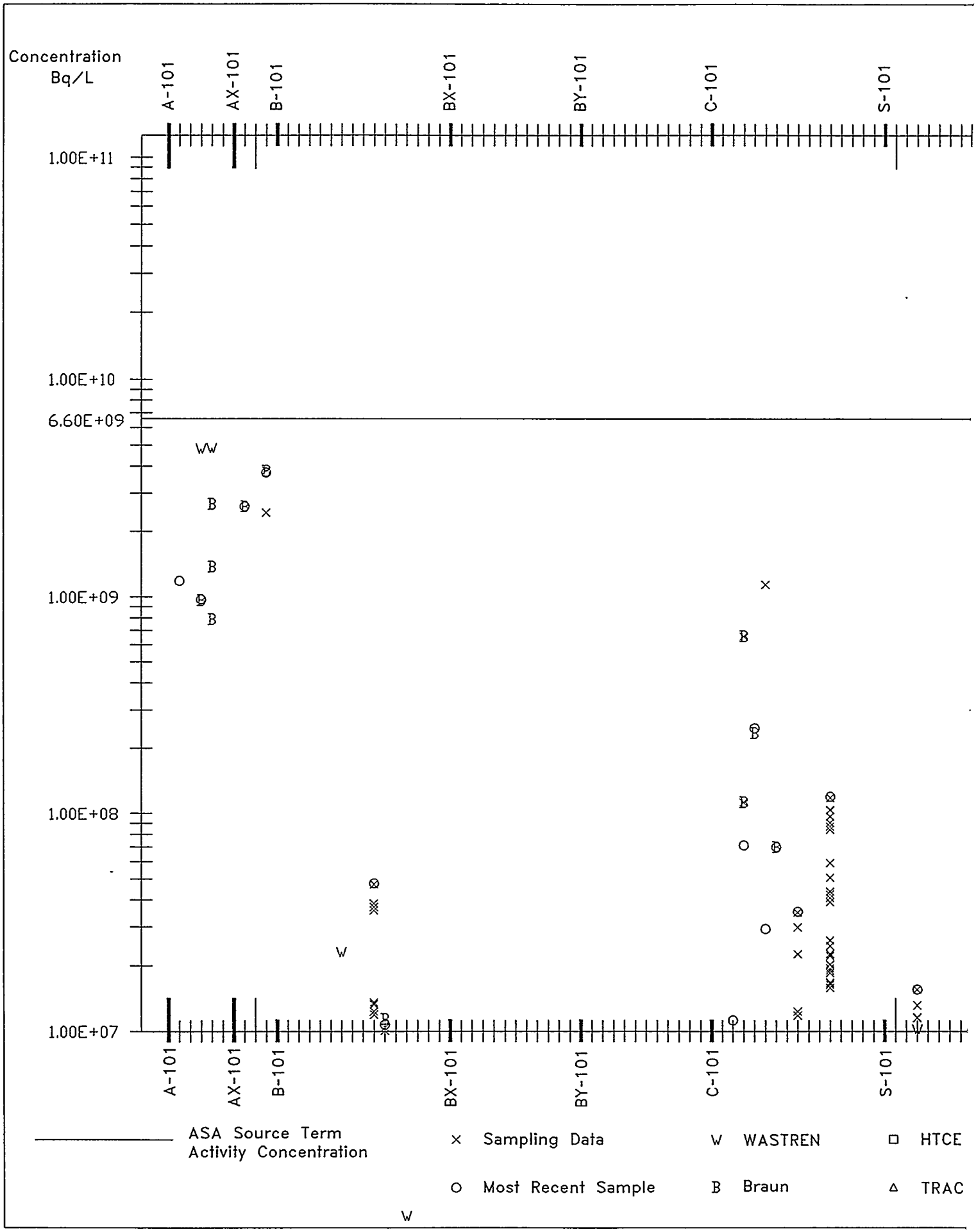
Extented tank lines represent Flamable Gas Watch List Tanks.

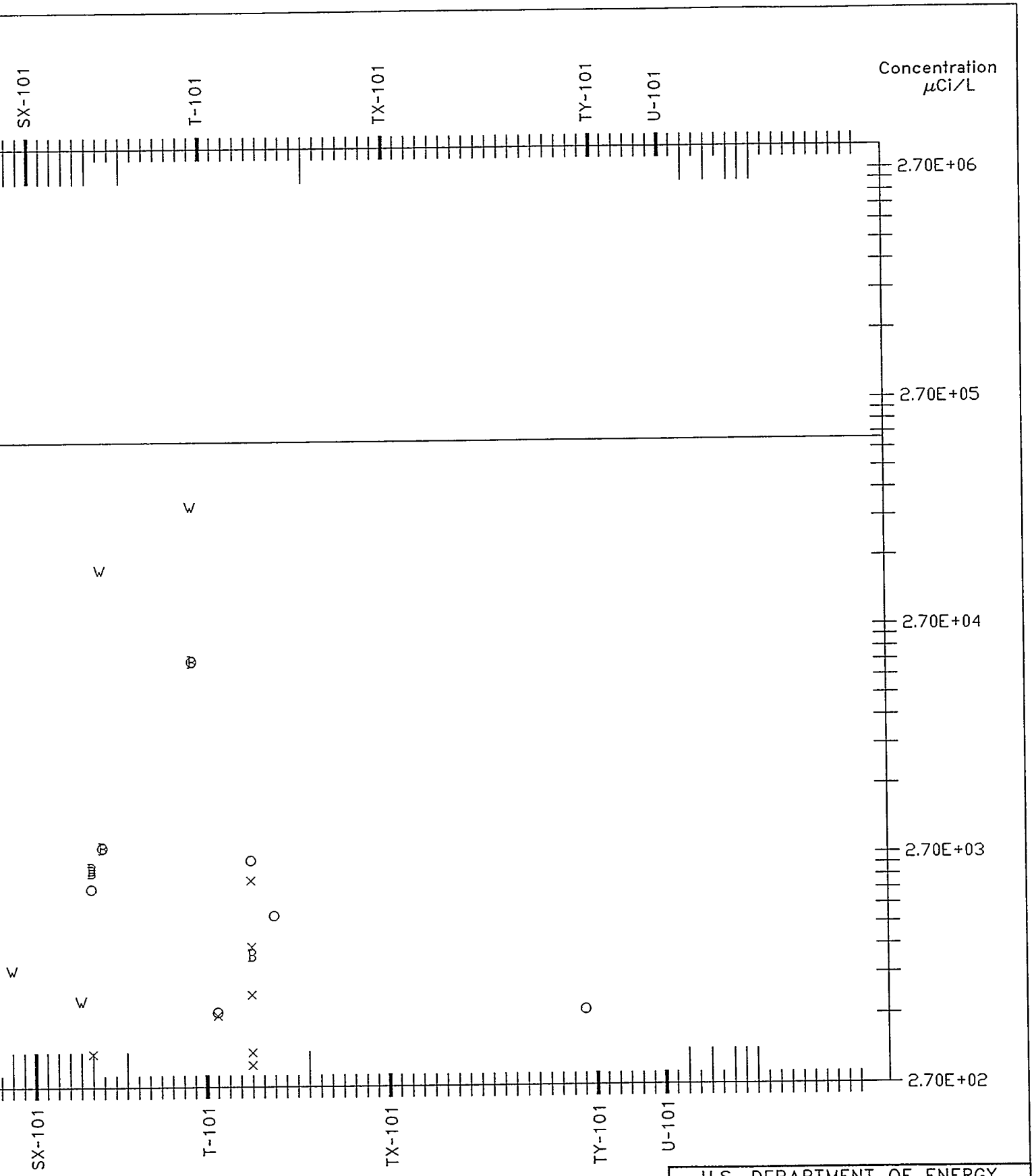
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Eu154 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR09 | JOB NO E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+11
1.00E+10
6.60E+09
1.00E+09
1.00E+08
1.00E+07
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



Inventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

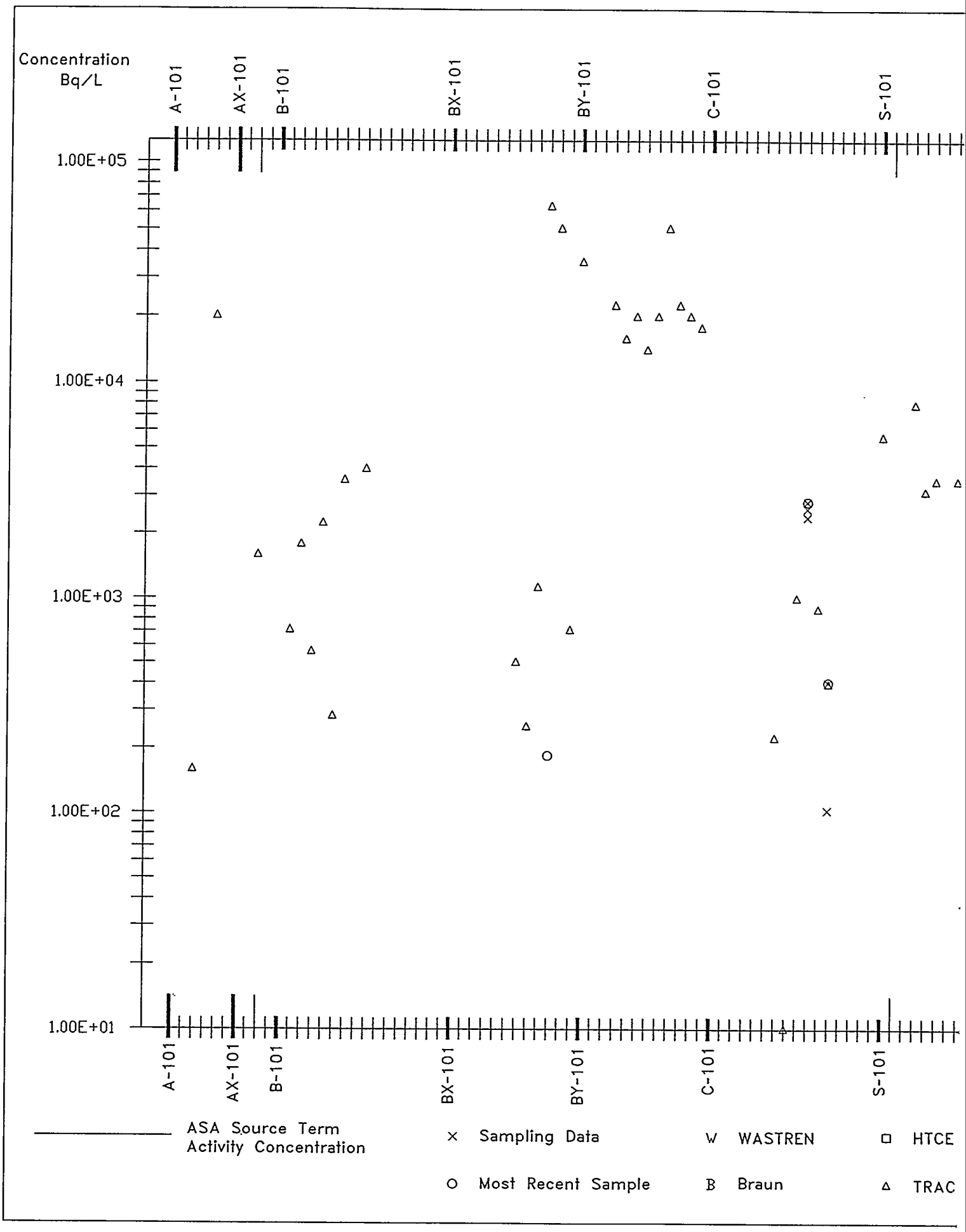
Extented tank lines represent Flamable Gas Watch List Tanks.

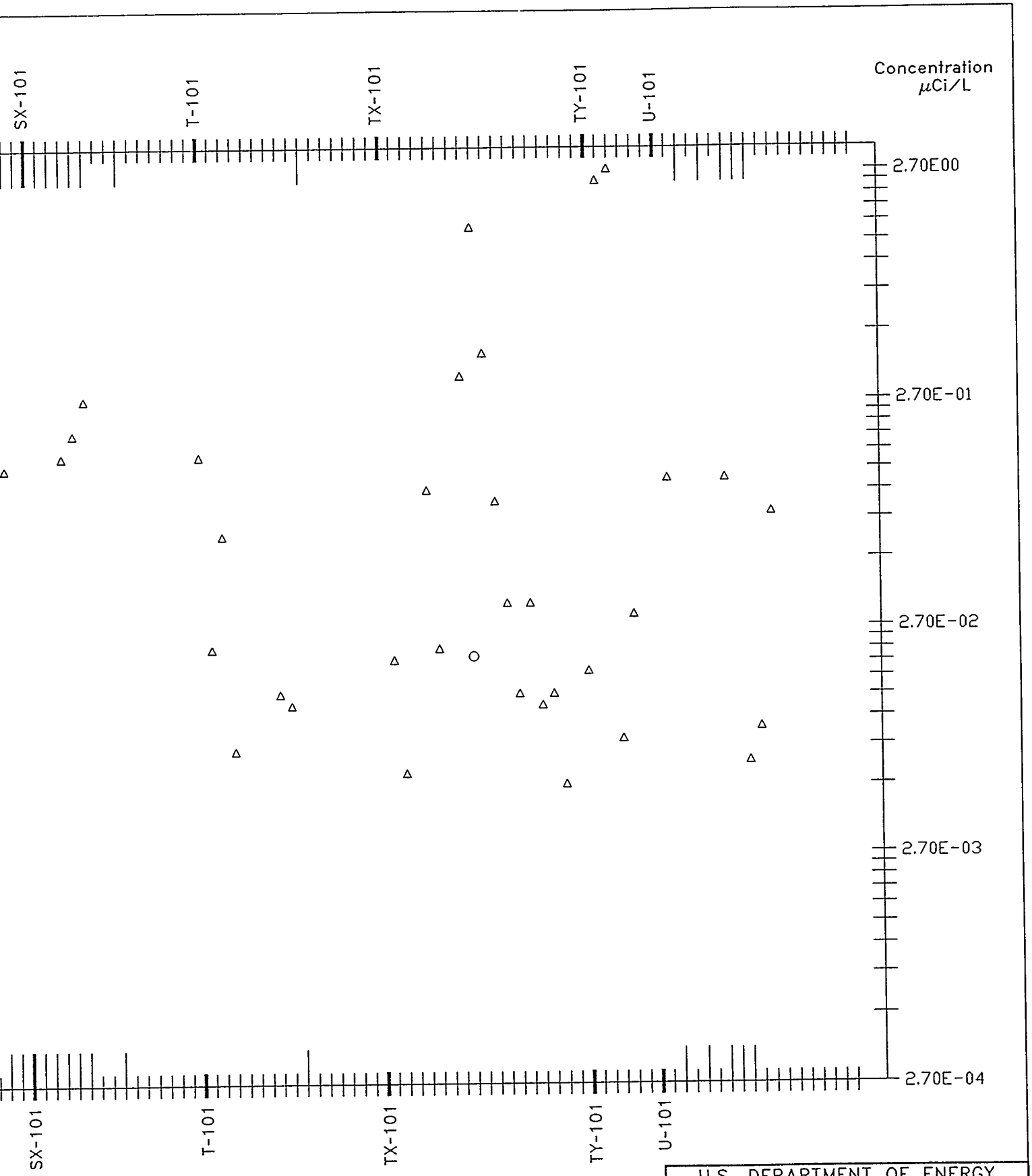
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Eu154 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR10 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+05
1.00E+04
1.00E+03
1.00E+02
1.00E+01
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun
HTCE
TRAC



Inventory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

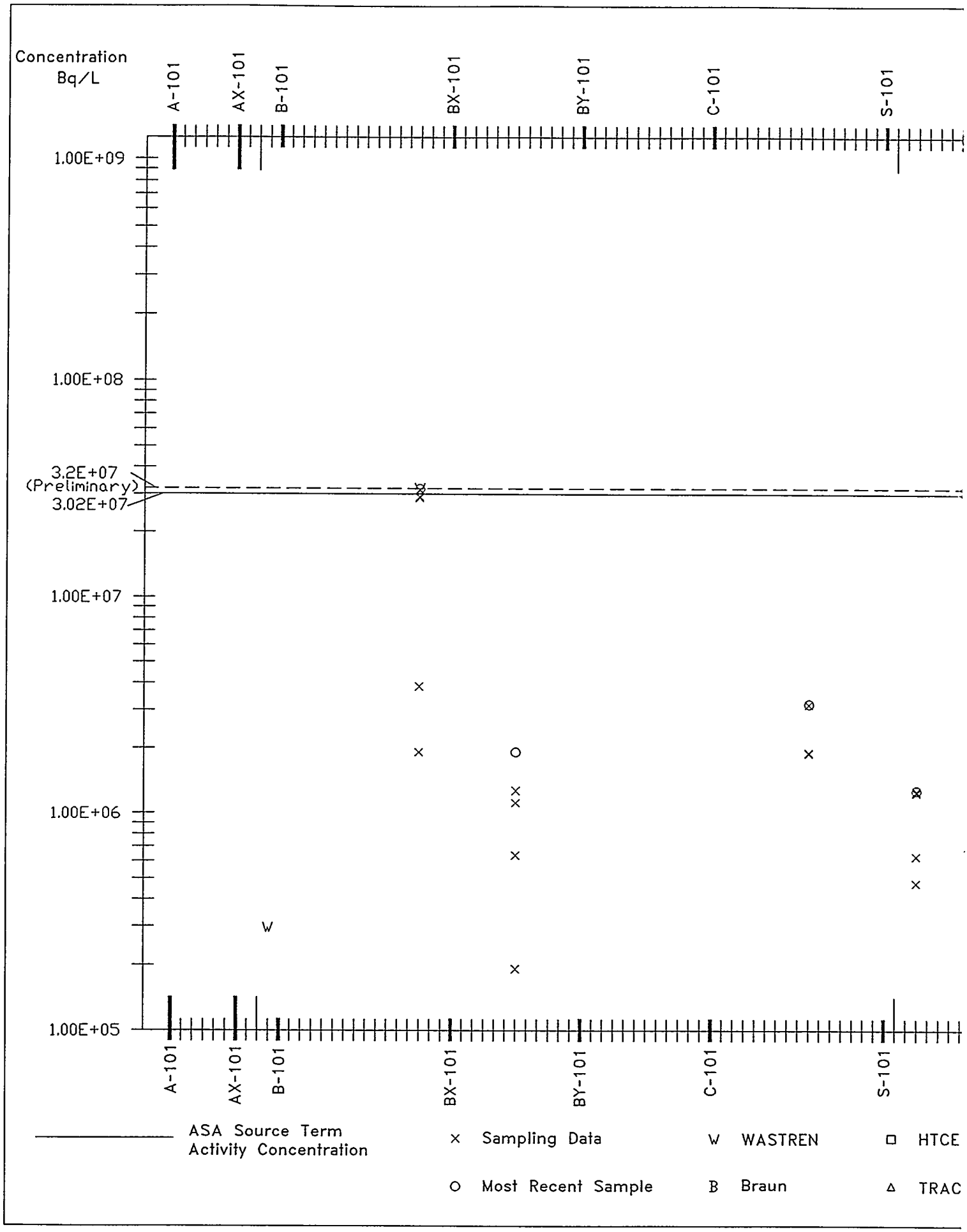
Extented tank lines represent Flamable Gas Watch List Tanks.

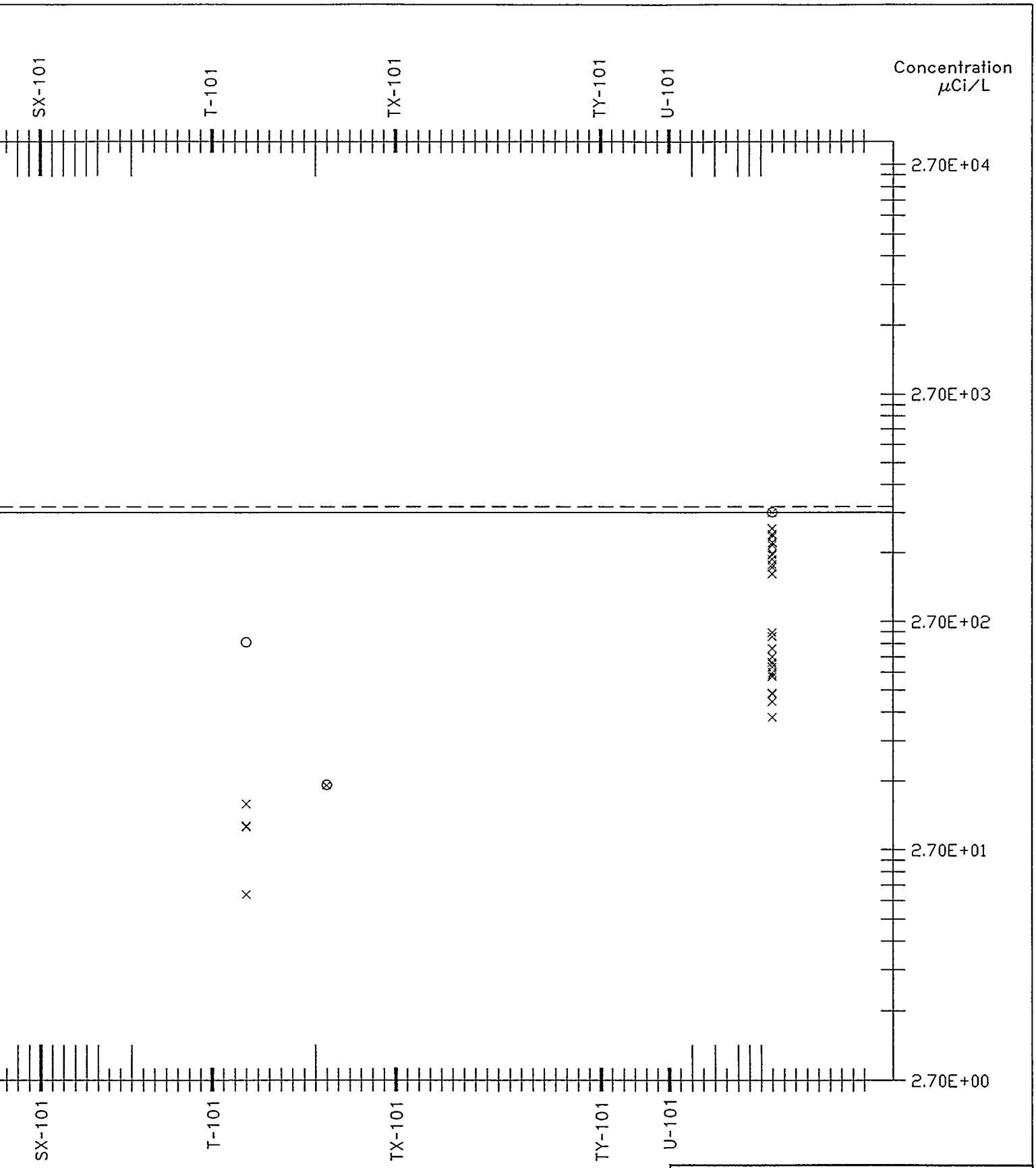
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Np237 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CR11 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+09
1.00E+08
3.2E+07
(Preliminary)
3.02E+07
1.00E+07
1.00E+06
1.00E+05
W
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



Inventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

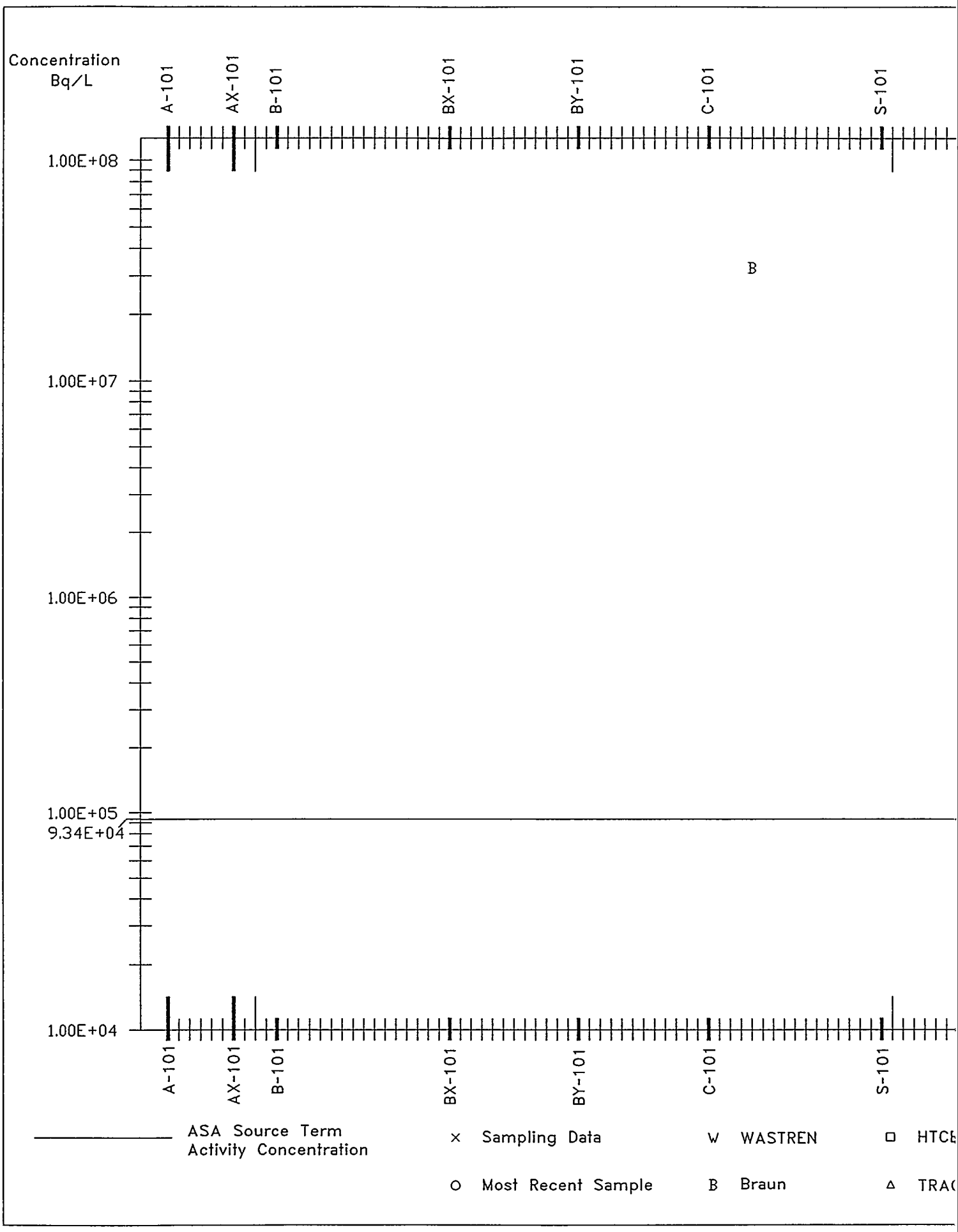
Extented tank lines represent Flamable Gas Watch List Tanks.

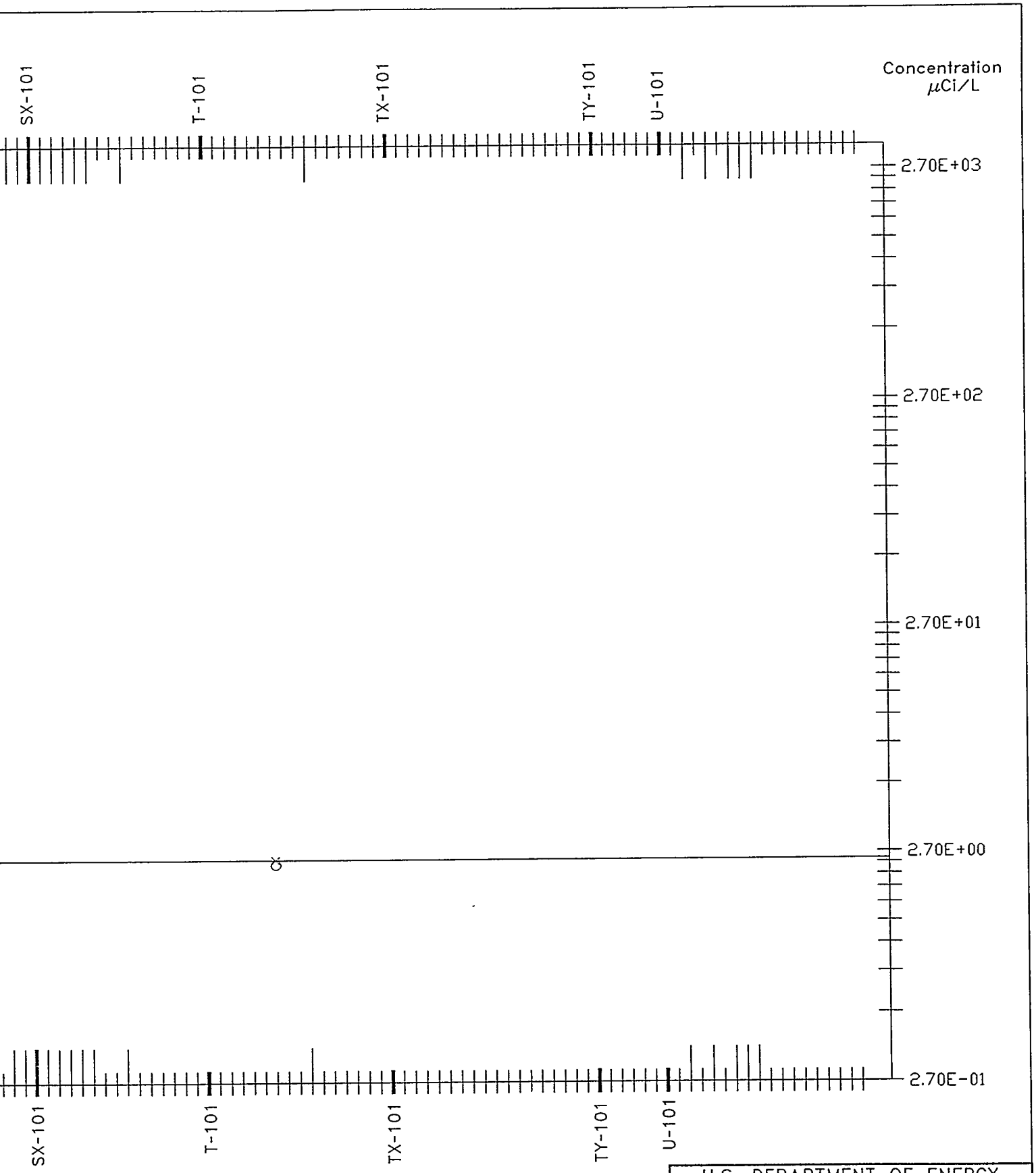
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Np237 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR12 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+08
1.00E+07
1.00E+06
1.00E+05
9.34E+04
1.00E+04
B
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRA(



Inventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

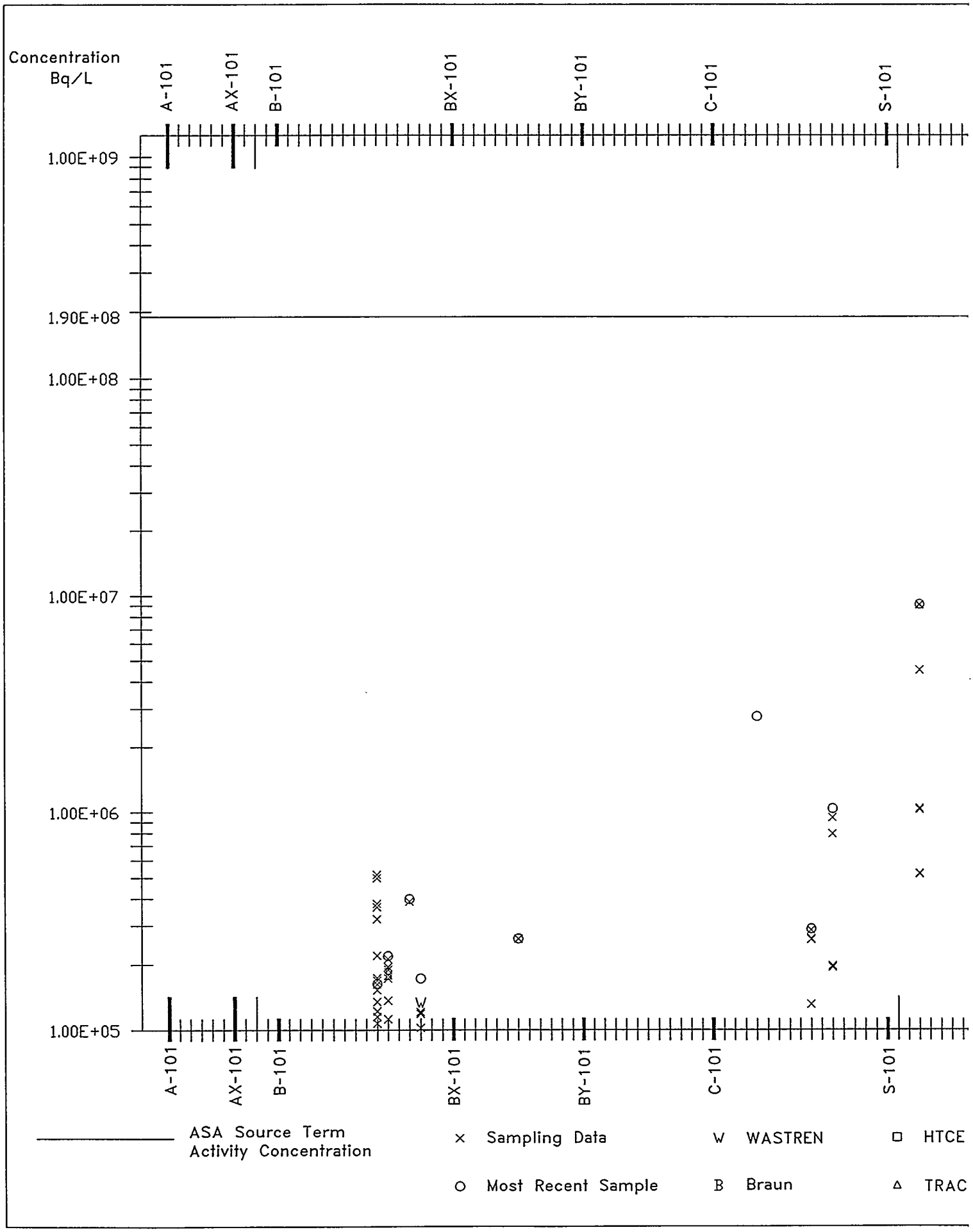
Extented tank lines represent Flamable Gas Watch List Tanks.

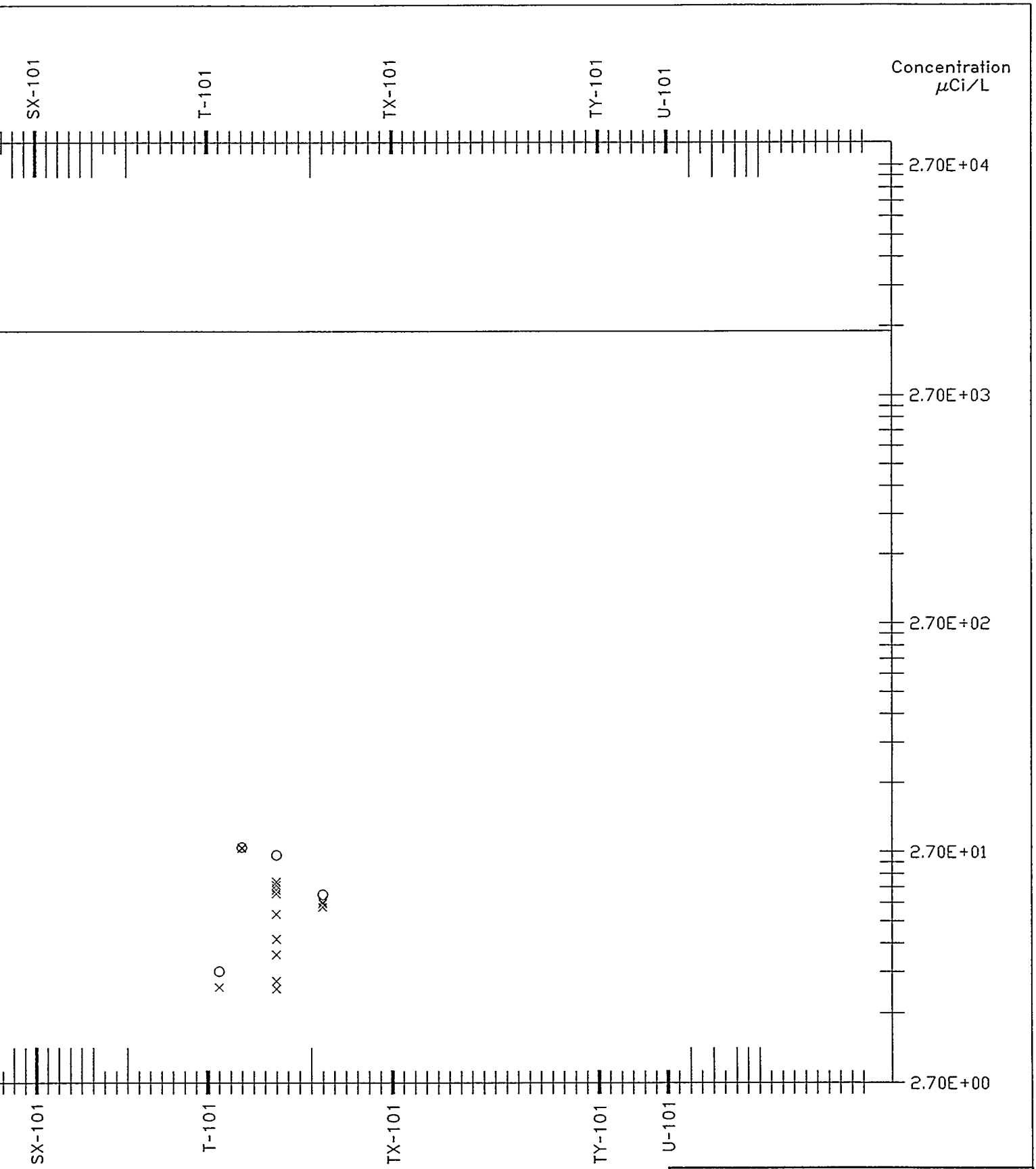
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Pu238 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CR13 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+09
1.90E+08
1.00E+08
1.00E+07
1.00E+06
1.00E+05
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
HTCE
Most Recent Sample
Braun
TRAC



Inventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

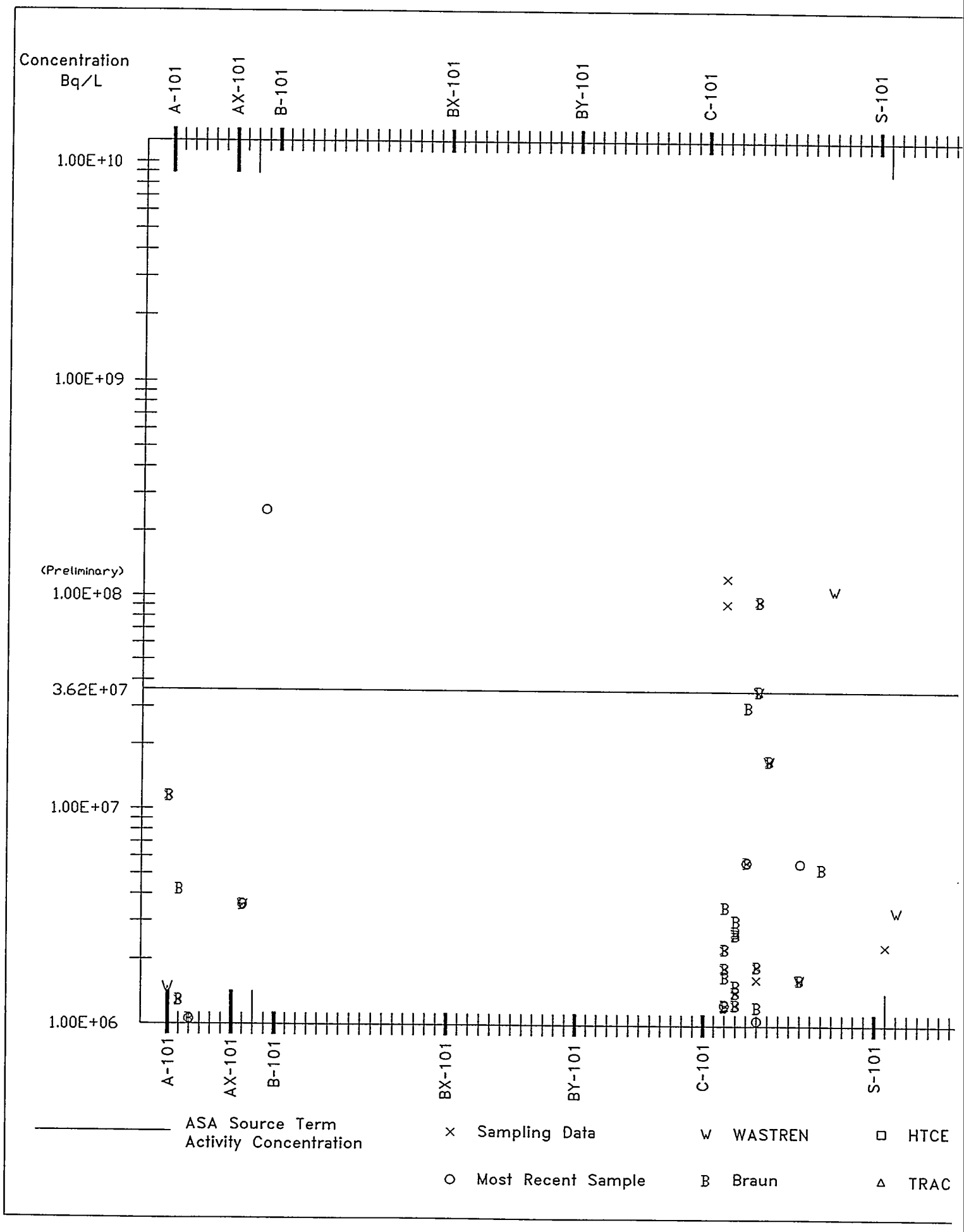
Extented tank lines represent Flamable Gas Watch List Tanks.

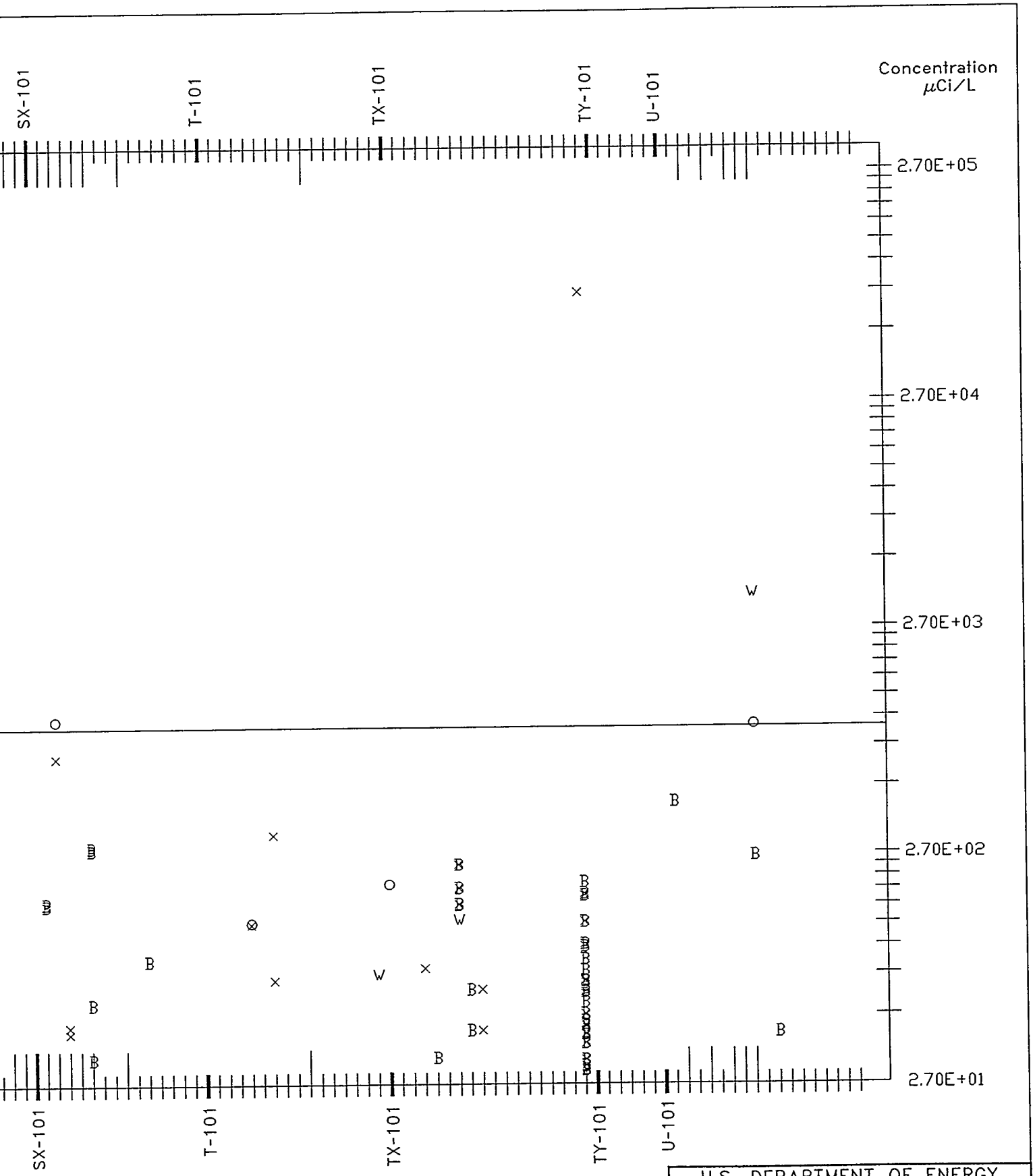
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Pu238 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR14 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+10
1.00E+09
(Preliminary)
1.00E+08
3.62E+07
1.00E+07
1.00E+06
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



Inventory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

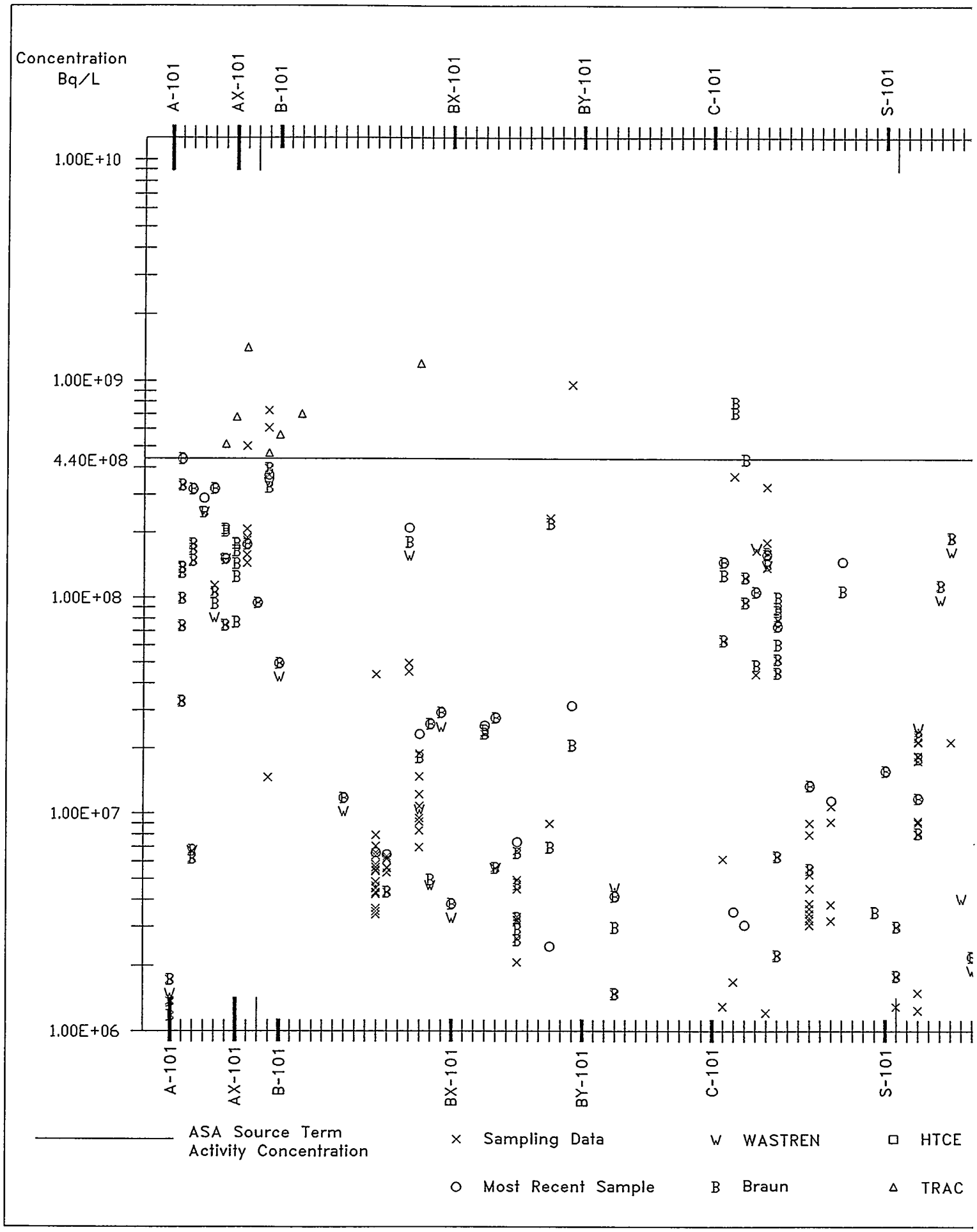
Extented tank lines represent Flamable Gas Watch List Tanks.

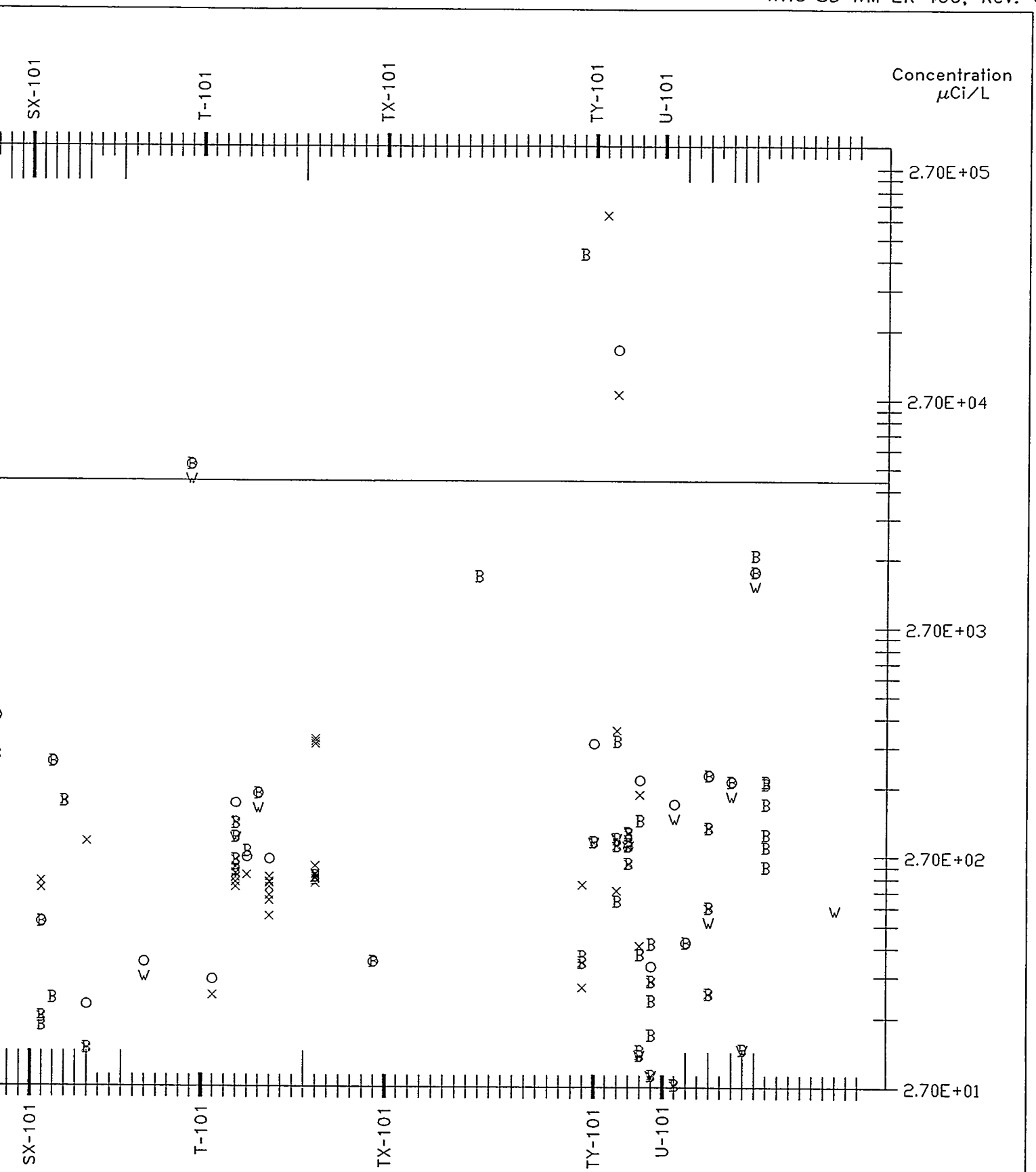
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Pu239/240 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR15 | JOB NO E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+10
1.00E+09
4.40E+08
1.00E+08
1.00E+07
1.00E+06
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



nventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

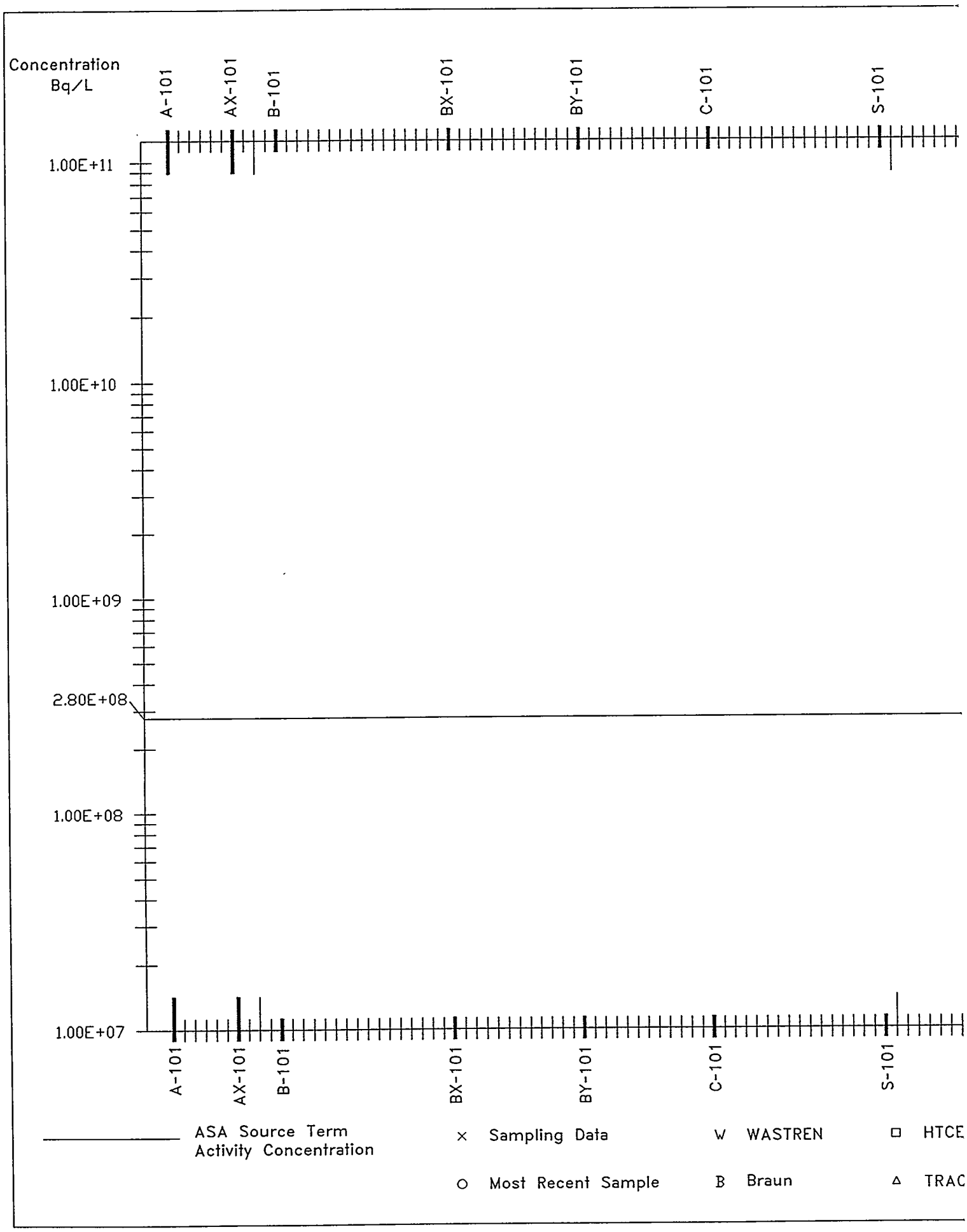
Extented tank lines represent Flamable Gas Watch List Tanks.

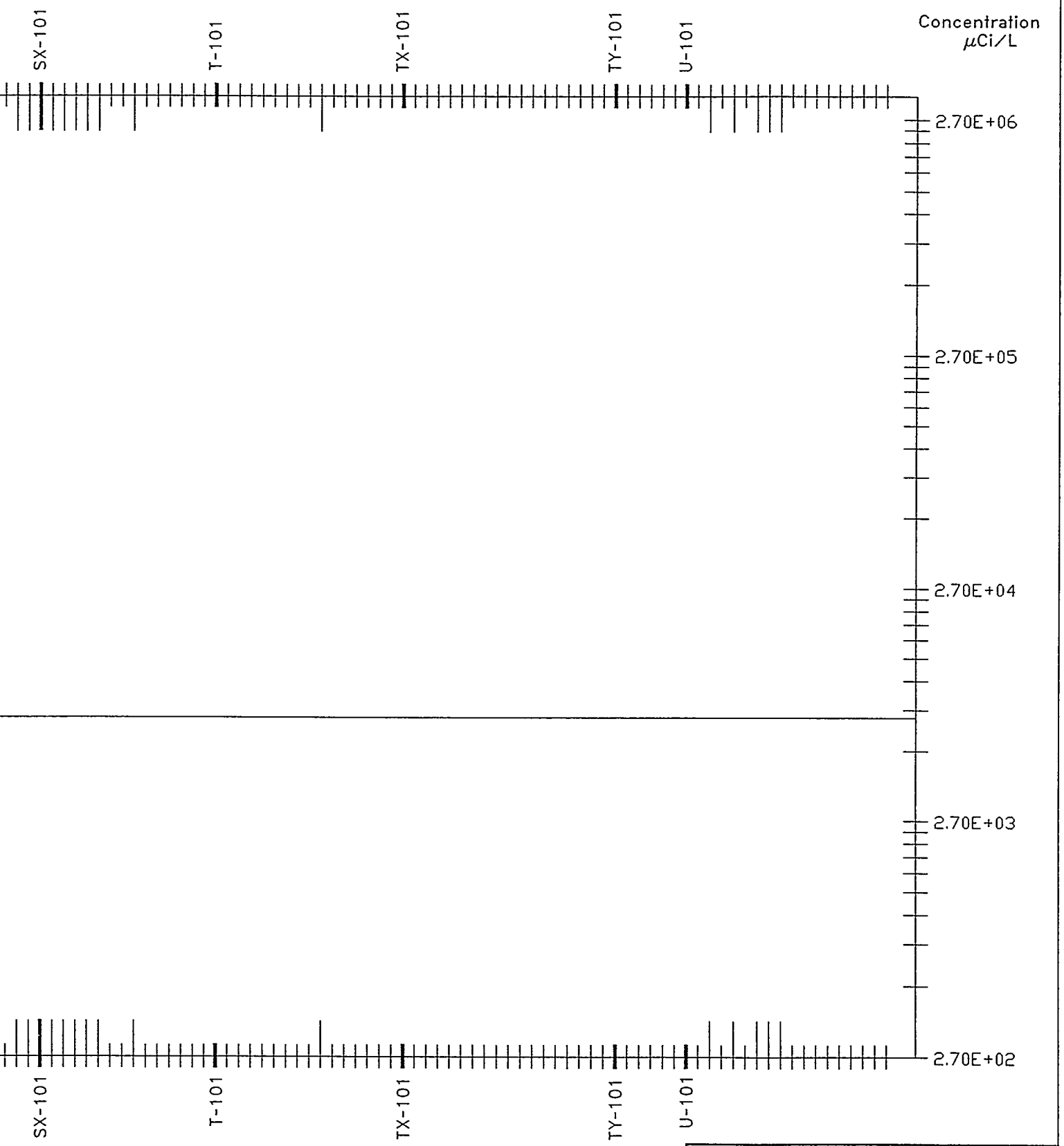
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Pu239/240 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR16 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+11
1.00E+10
1.00E+09
2.80E+08
1.00E+08
1.00E+07
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



Inventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

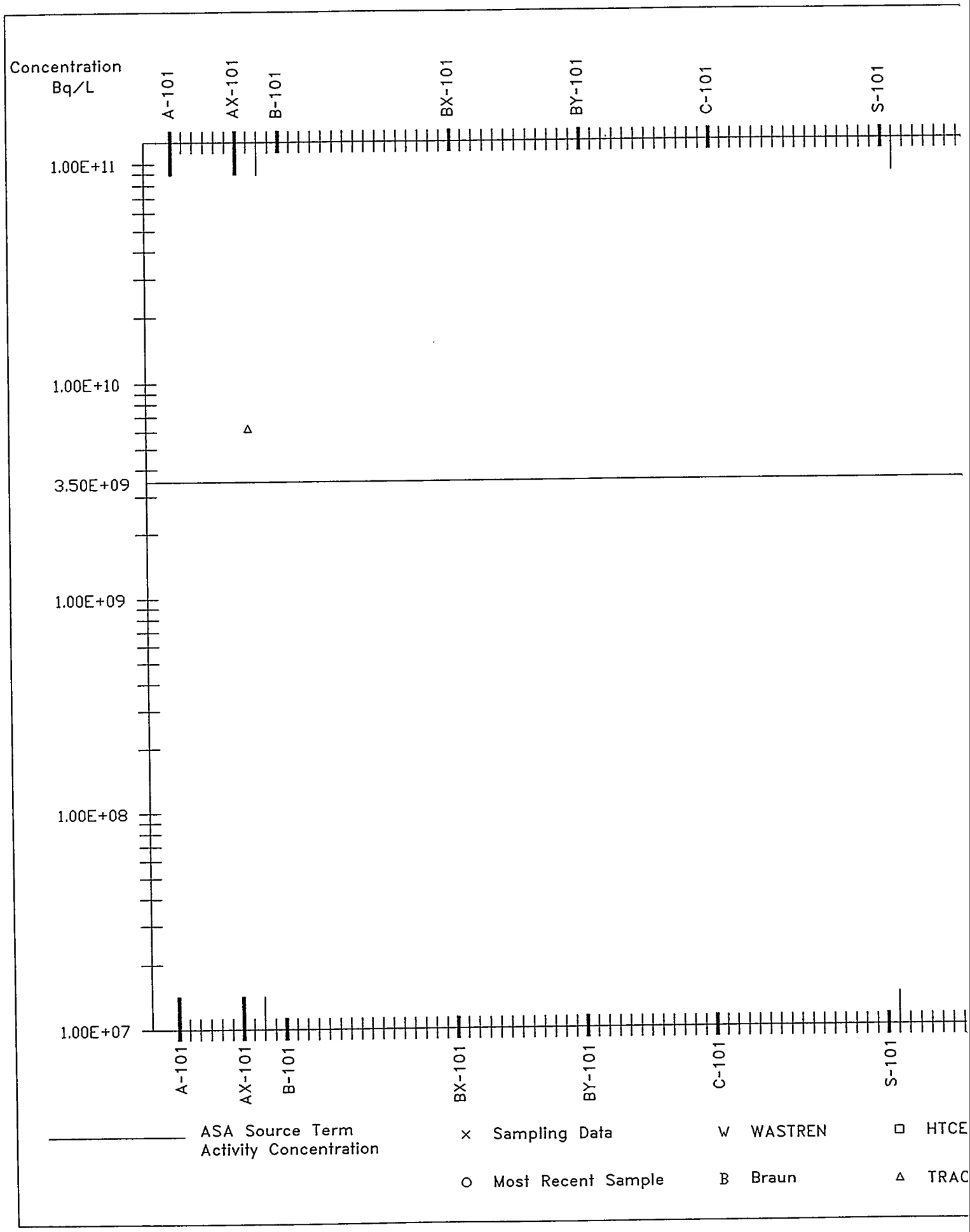
Extented tank lines represent Flamable Gas Watch List Tanks.

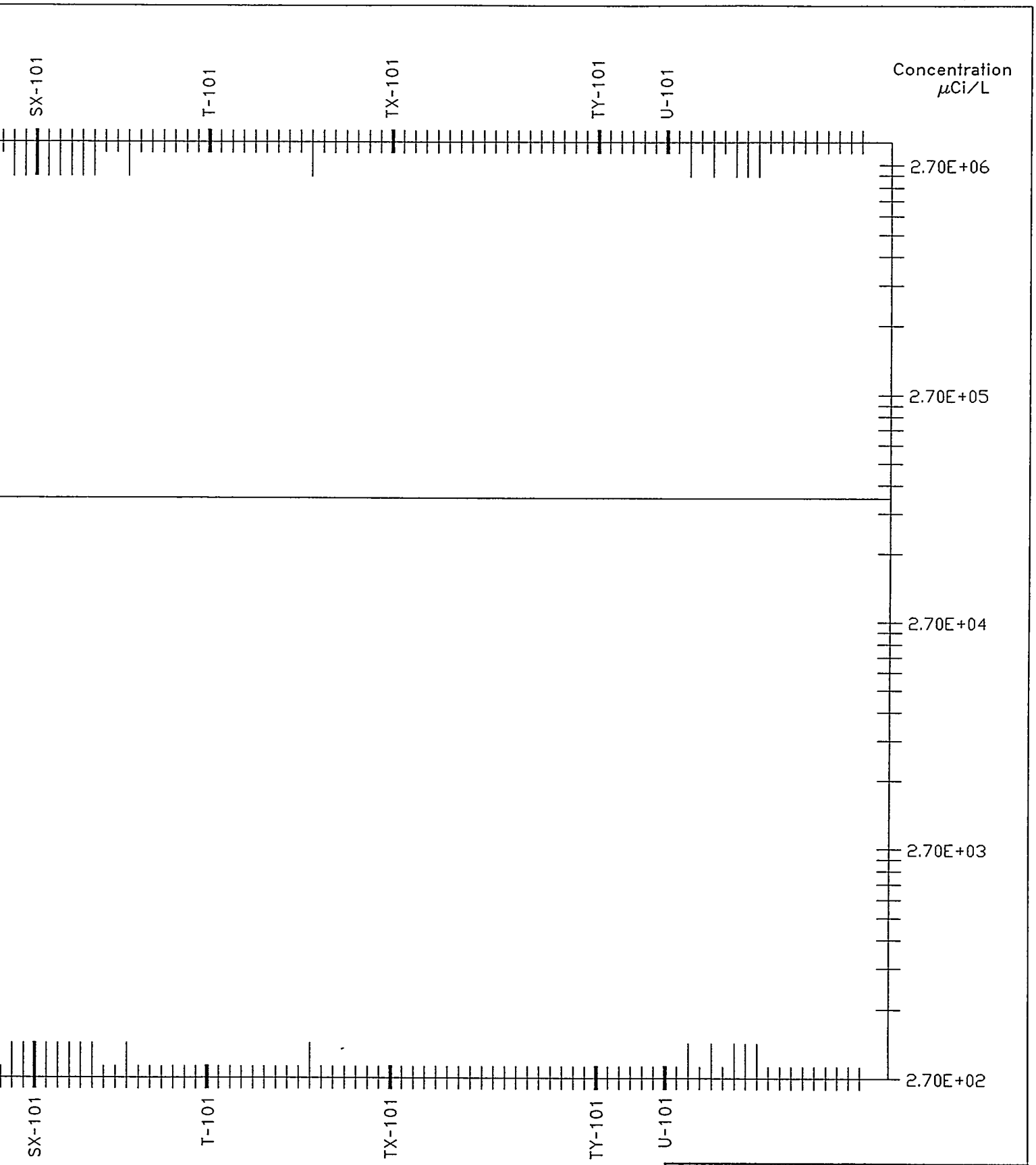
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Pu241 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CR17 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+11
1.00E+10
3.50E+09
1.00E+09
1.00E+08
1.00E+07
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



nventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

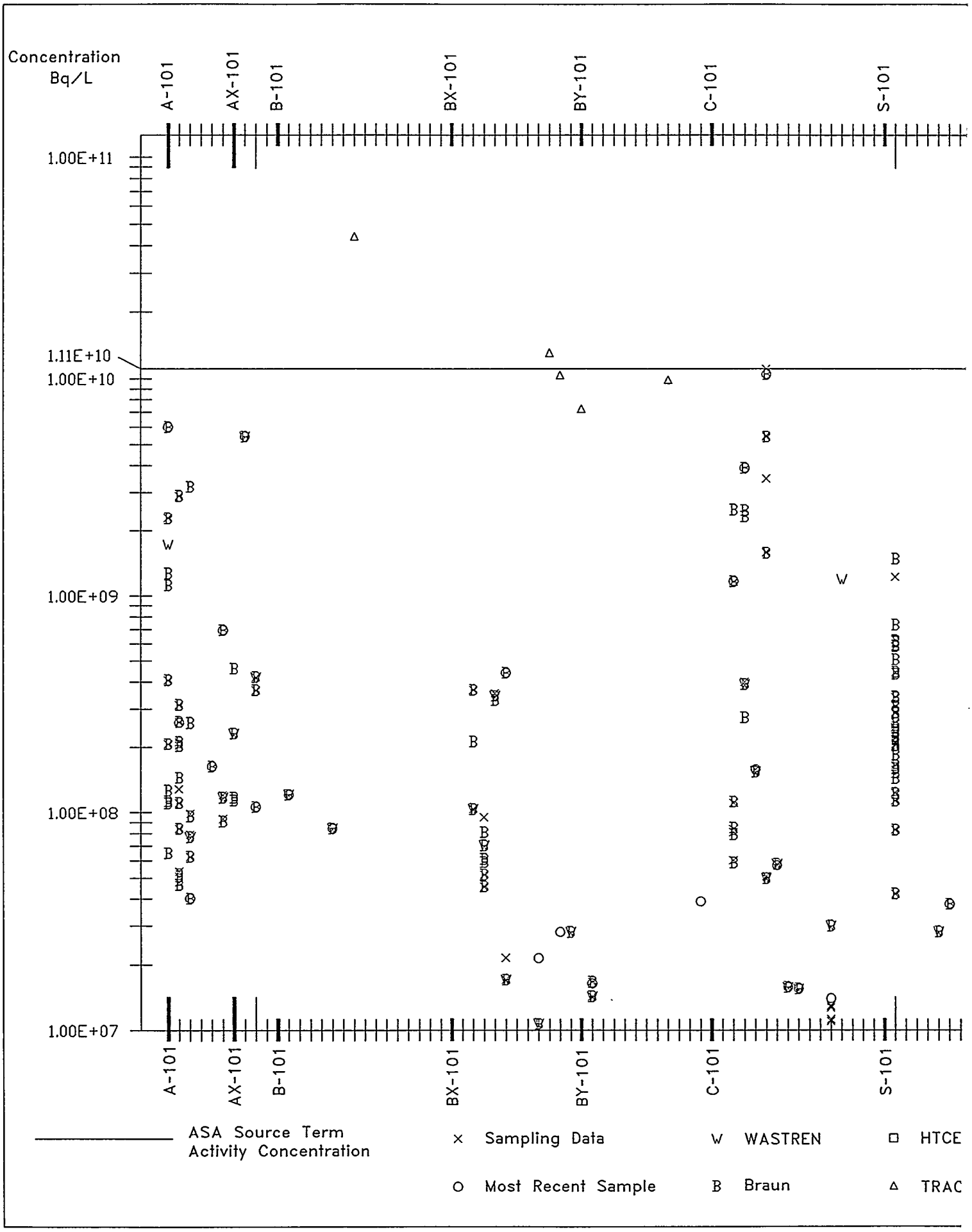
Extented tank lines represent Flamable Gas Watch List Tanks.

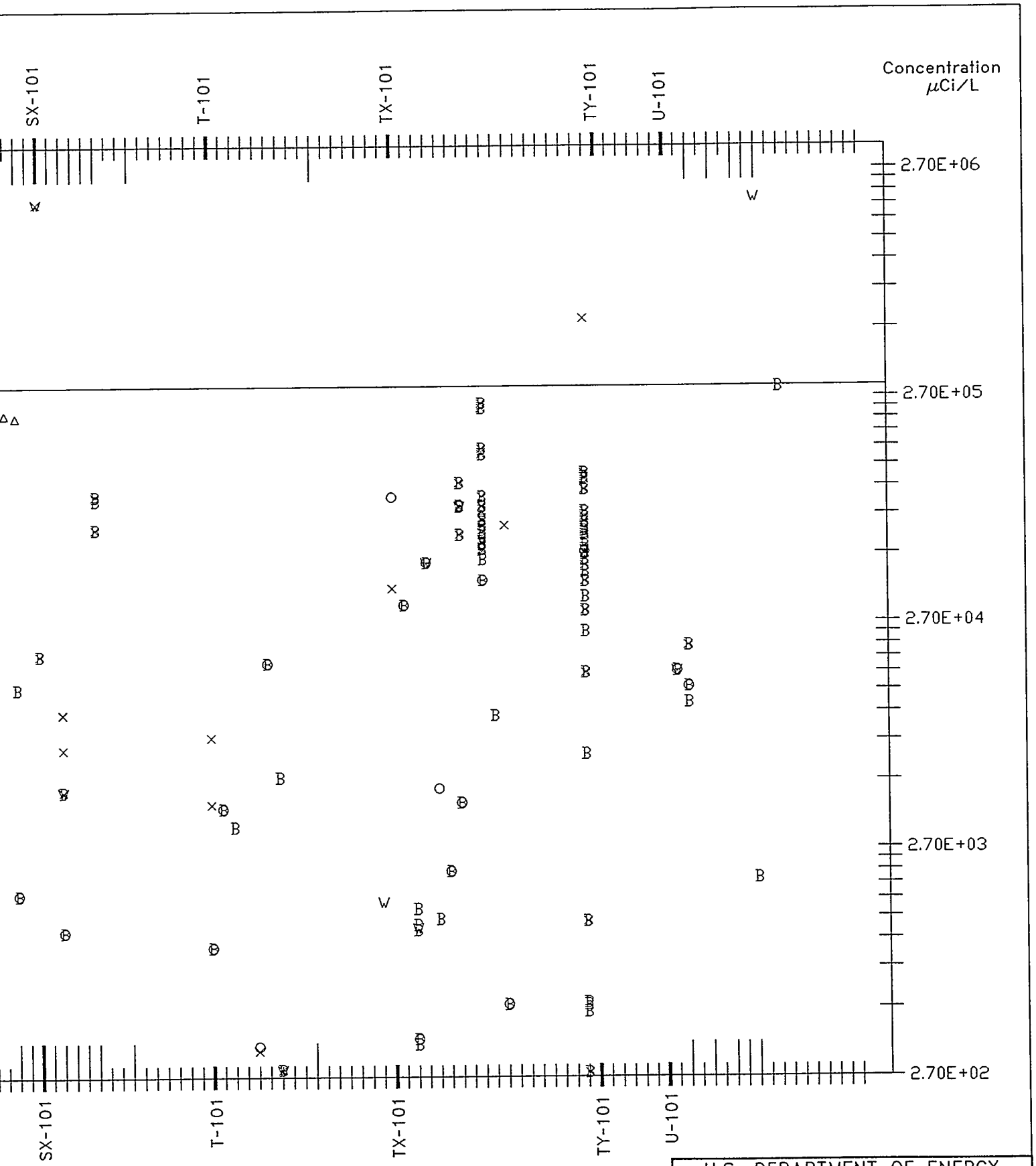
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Pu241 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR18 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+11
1.11E+10
1.00E+10
1.00E+09
1.00E+08
1.00E+07
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



Inventory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

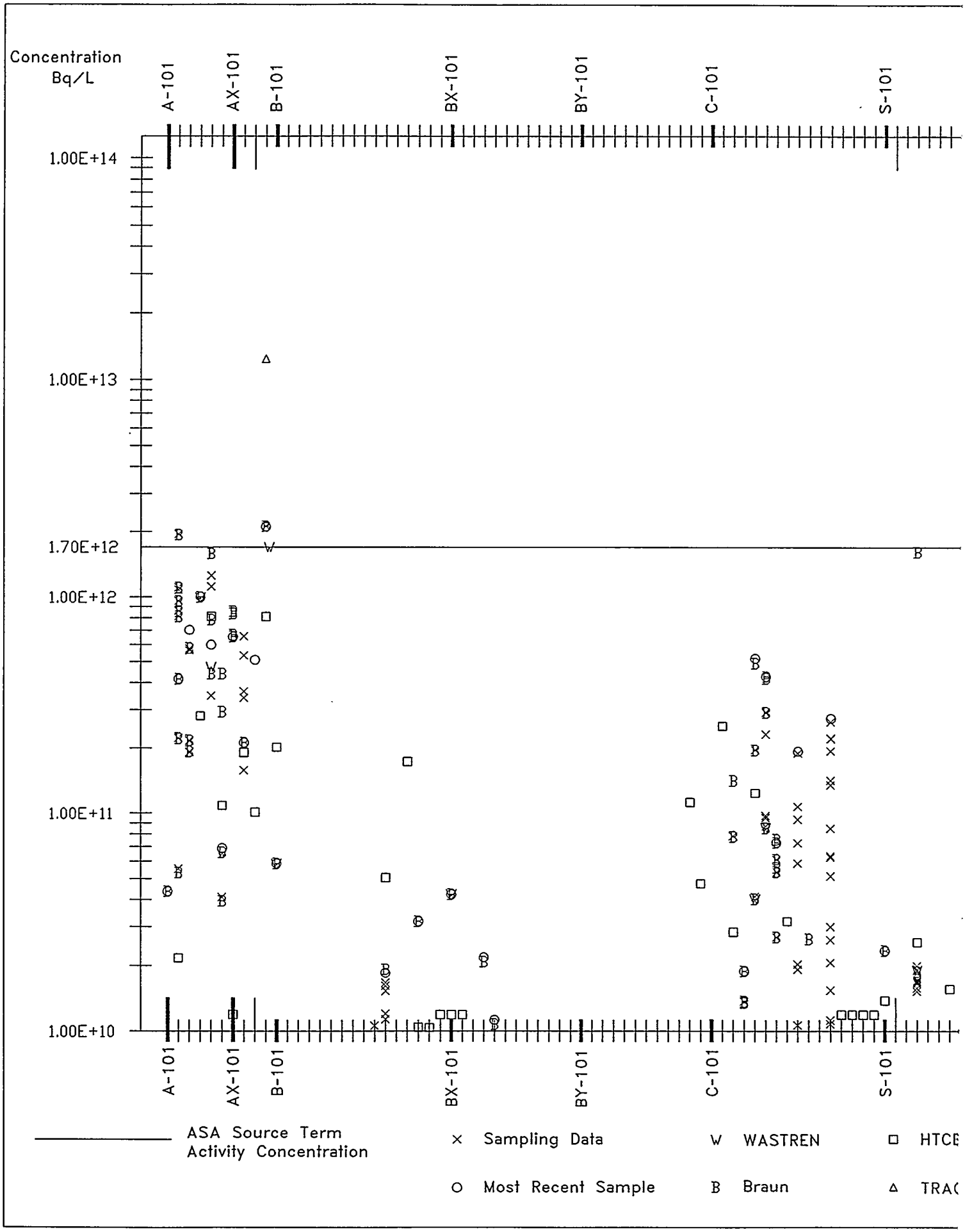
Extented tank lines represent Flamable Gas Watch List Tanks.

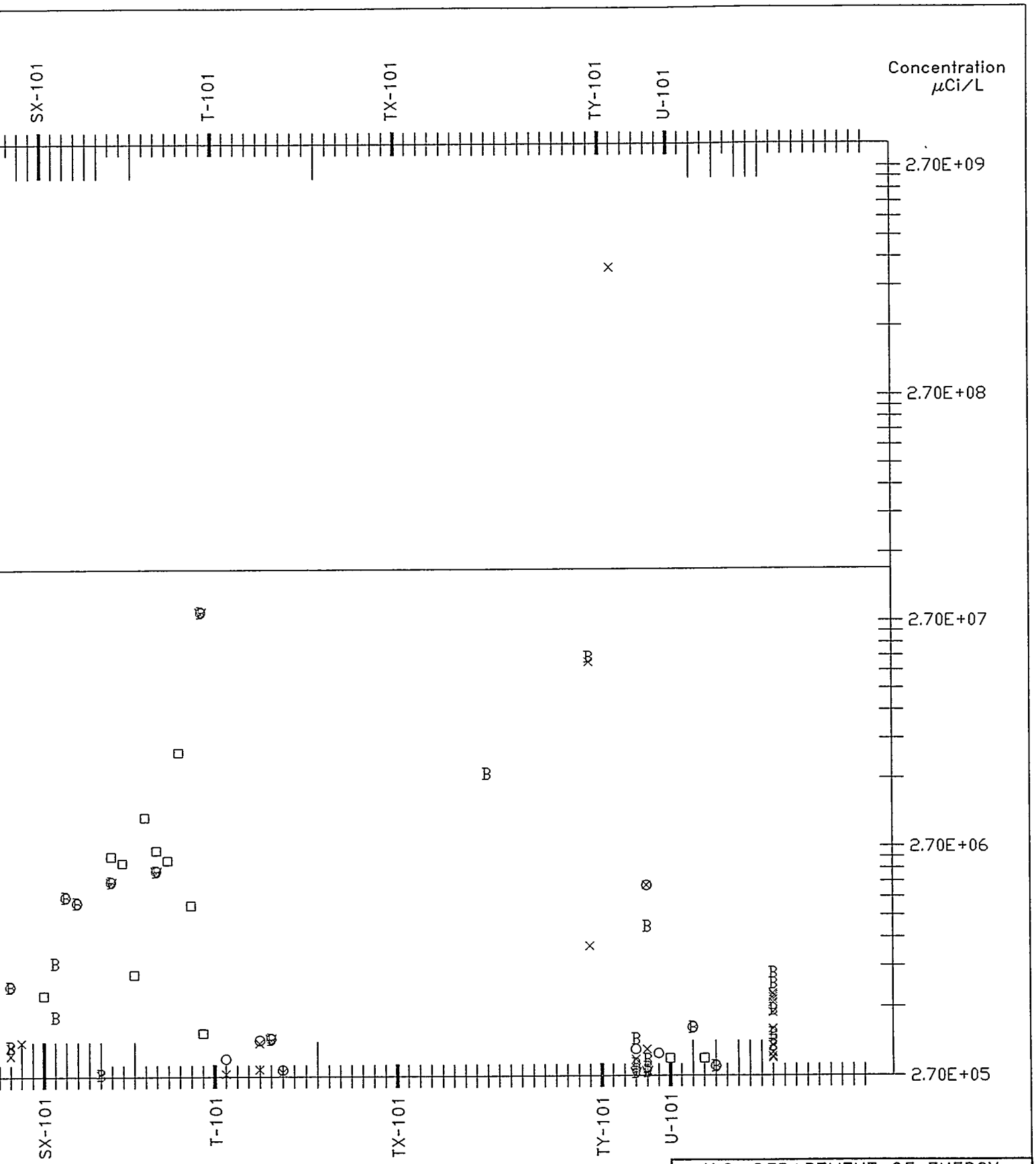
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Sr90 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR19 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+14
1.00E+13
1.70E+12
1.00E+12
1.00E+11
1.00E+10
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
HTCE
Most Recent Sample
Braun
TRAC



Inventory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

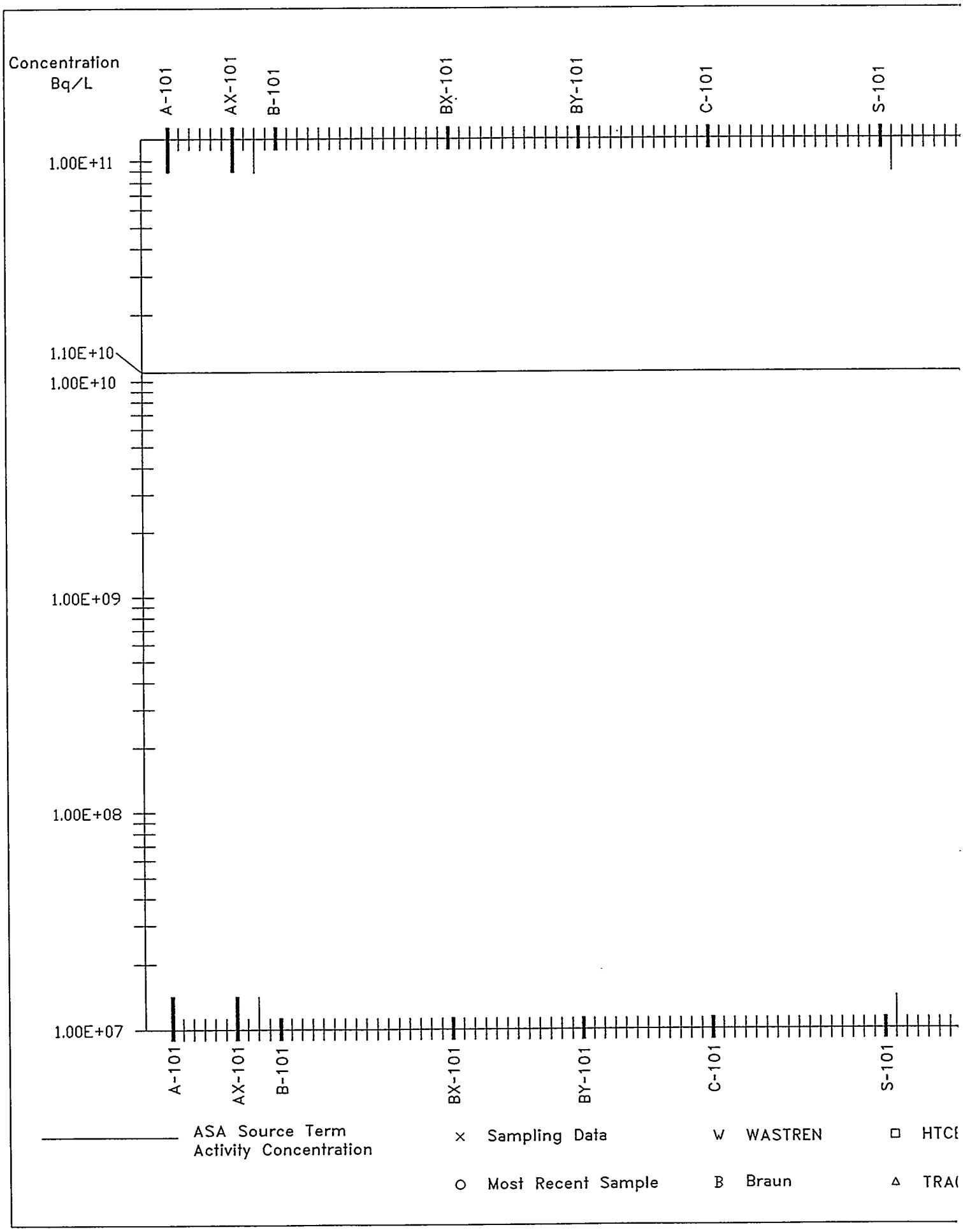
Extented tank lines represent Flamable Gas Watch List Tanks.

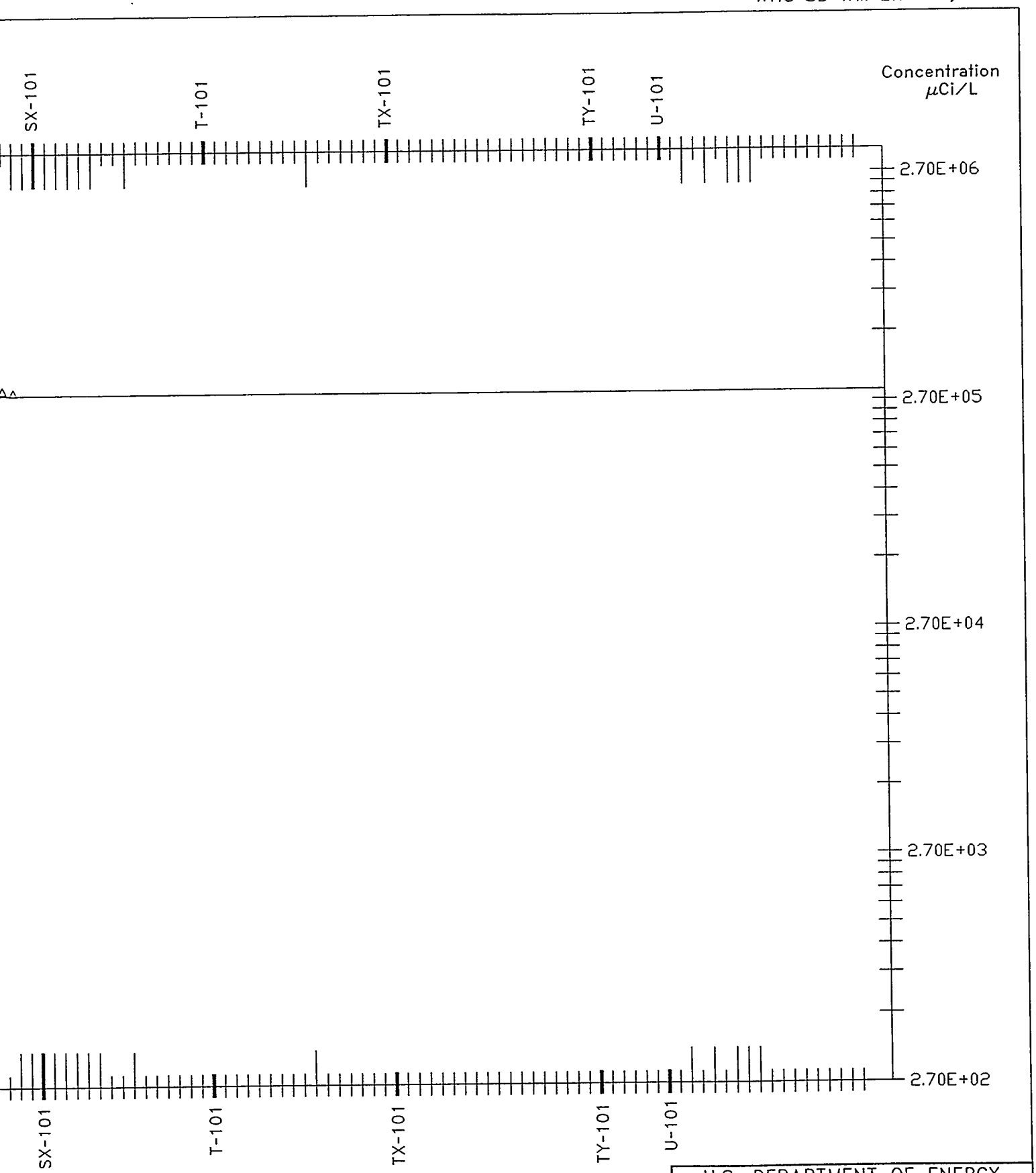
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Sr90 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CR20 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+11
1.10E+10
1.00E+10
1.00E+09
1.00E+08
1.00E+07
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



Inventory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

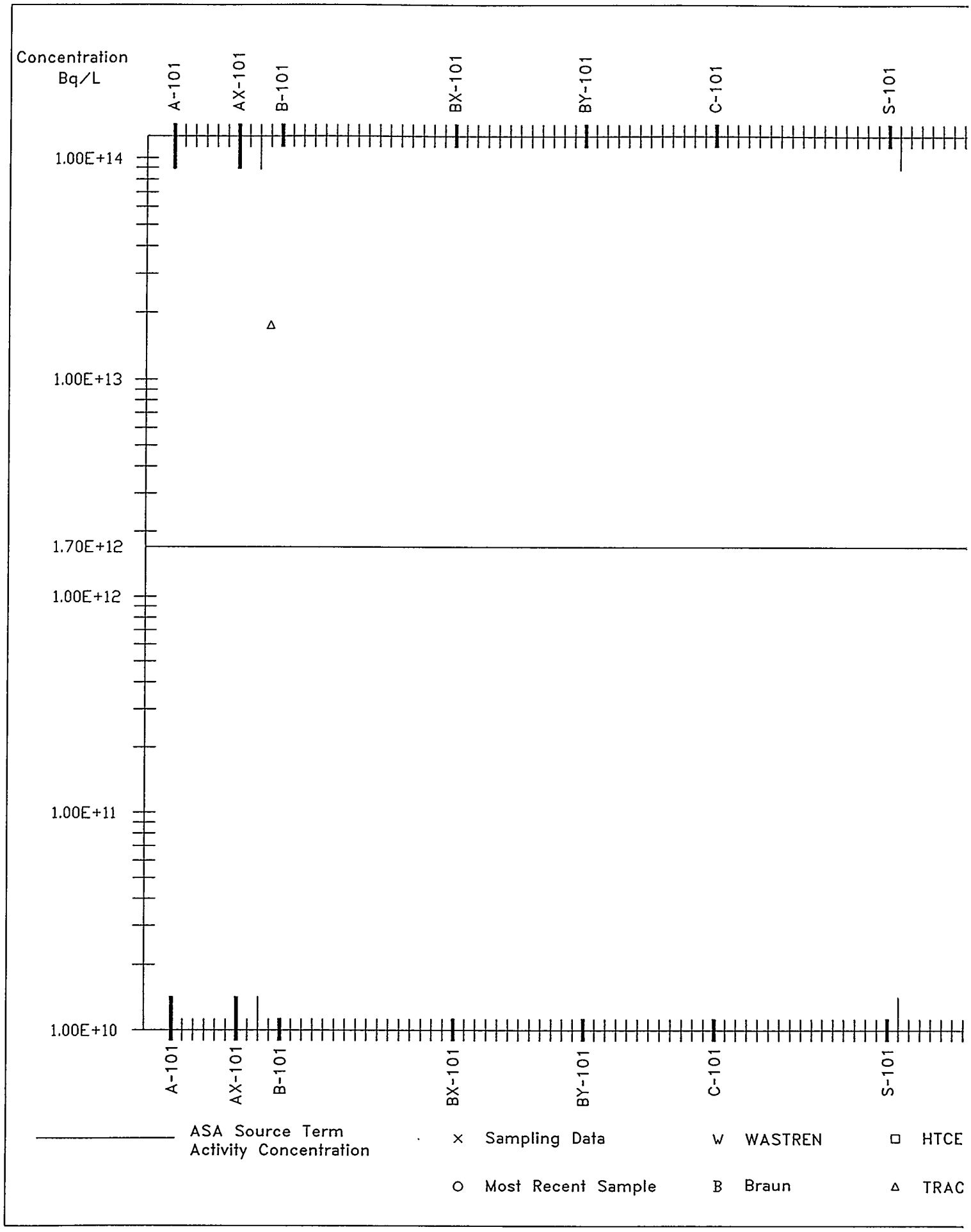
Extented tank lines represent Flamable Gas Watch List Tanks.

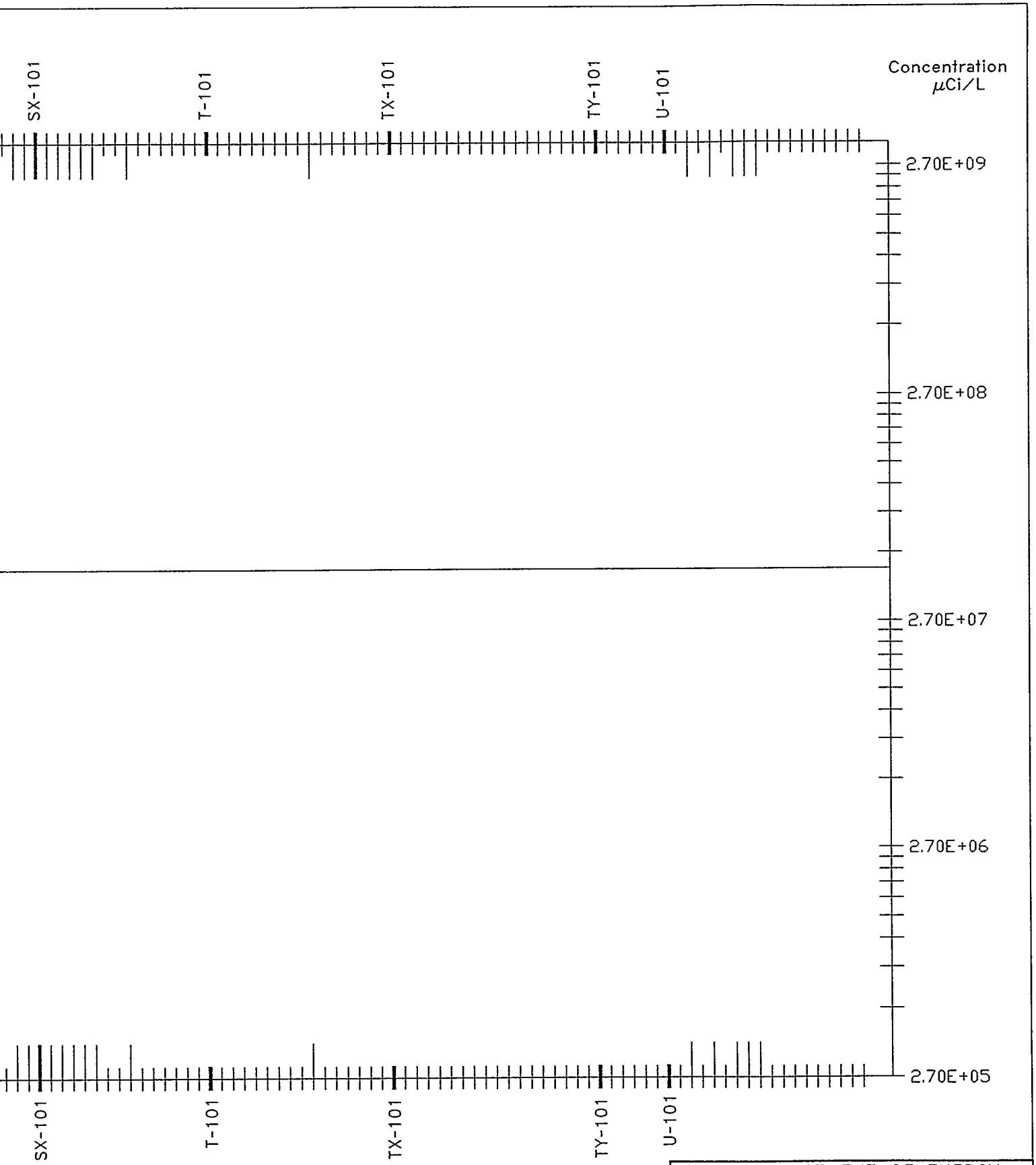
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Y90 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR21 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+14
1.00E+13
1.70E+12
1.00E+12
1.00E+11
1.00E+10
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



Inventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

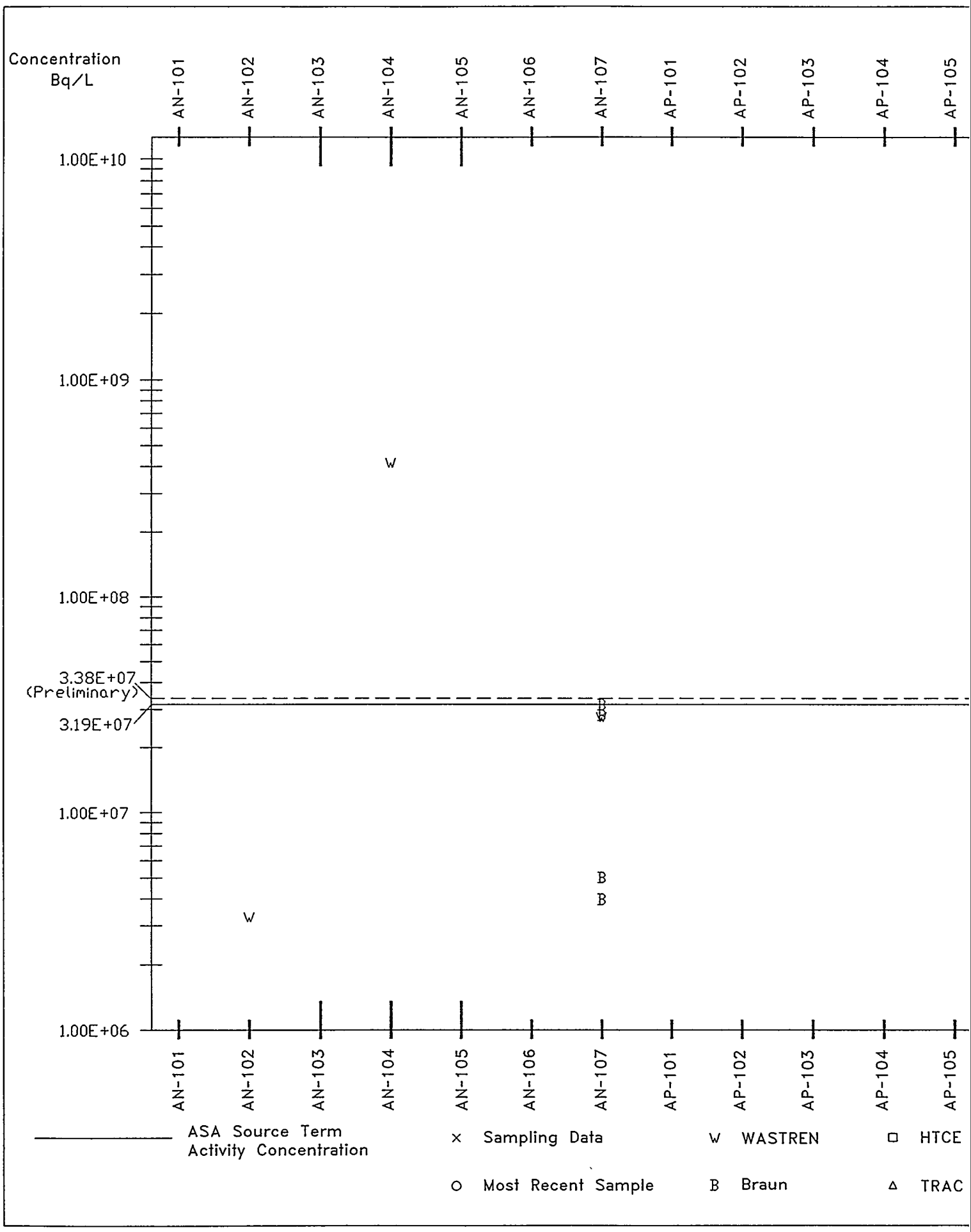
Extented tank lines represent Flamable Gas Watch List Tanks.

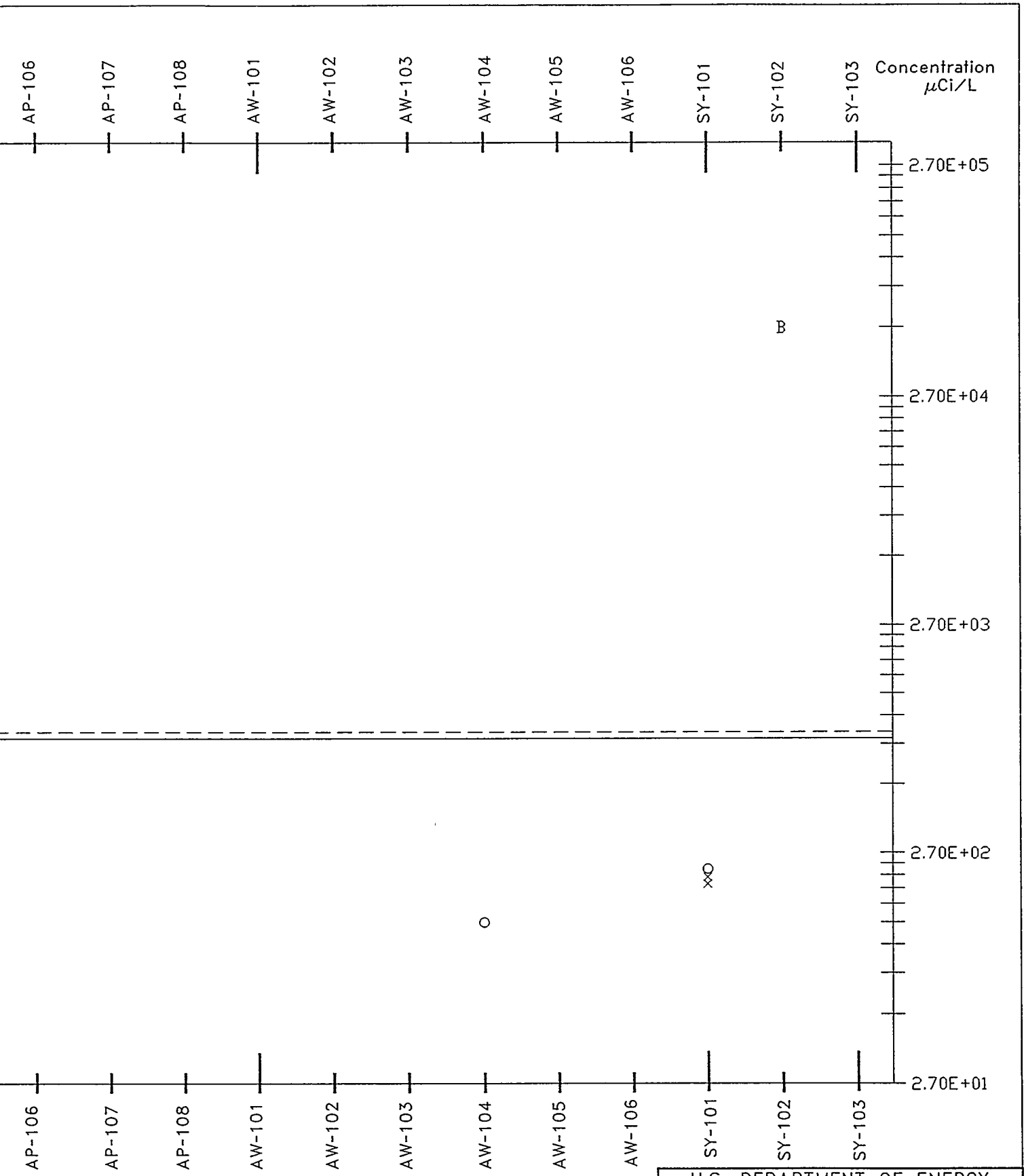
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Y90 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR22 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+10
1.00E+09
1.00E+08
3.38E+07
(Preliminary)
3.19E+07
1.00E+07
1.00E+06
W
W
B
B
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□ HTCE
○ Most Recent Sample
B Braun
△ TRAC



nventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

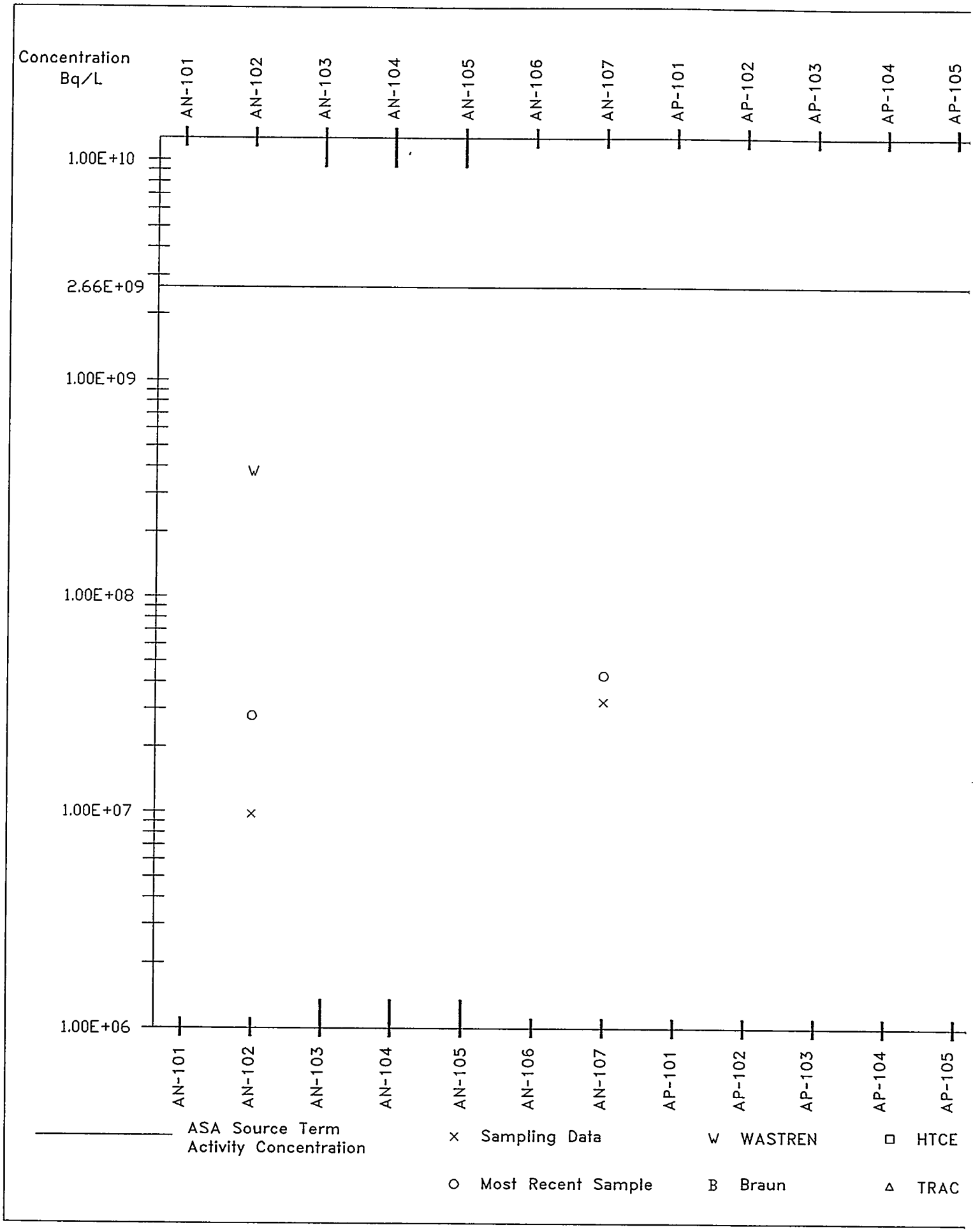
Extented tank lines represent Flamable Gas Watch List Tanks.

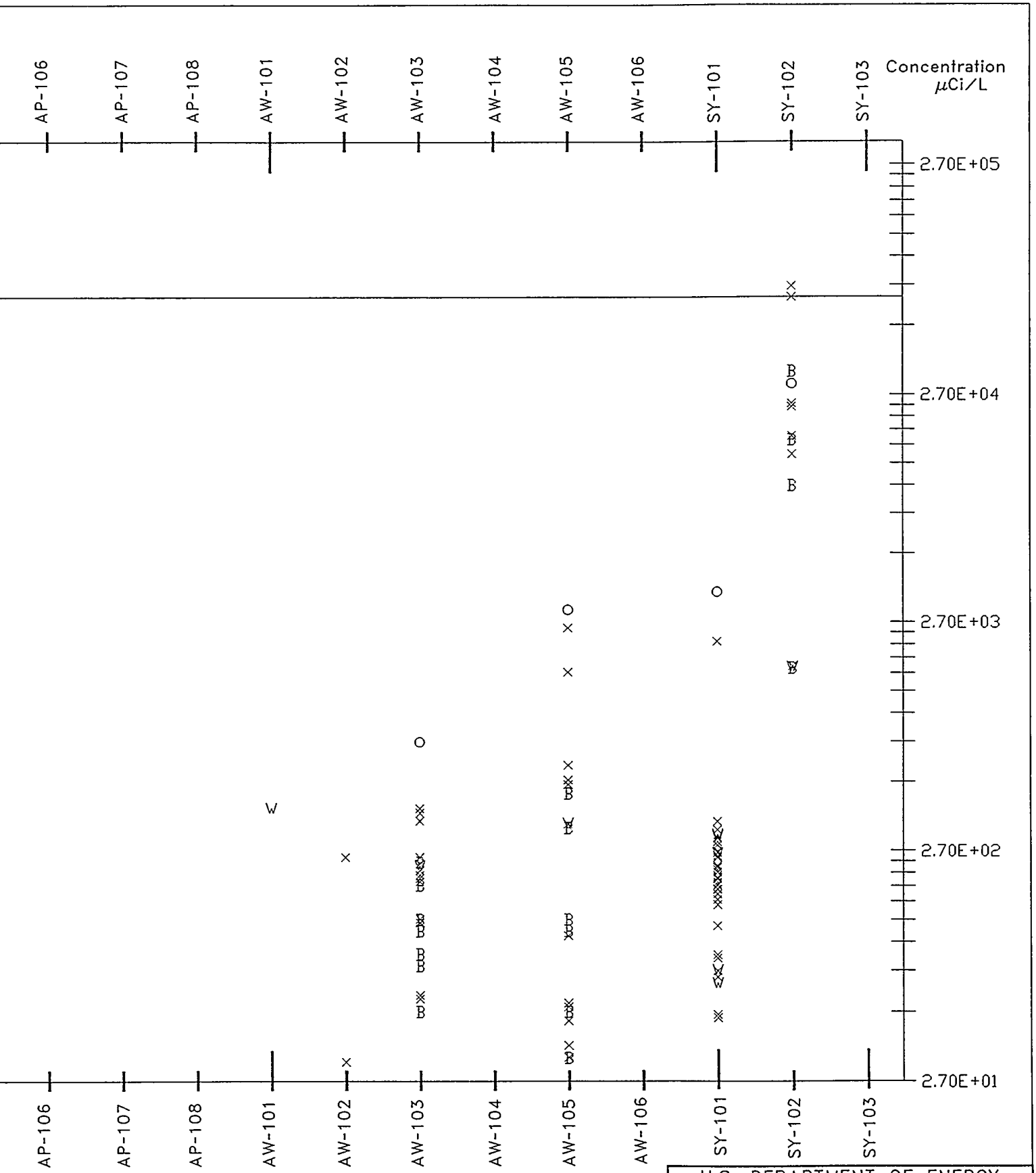
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Am241 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR23 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+10
2.66E+09
1.00E+09
1.00E+08
1.00E+07
1.00E+06
W
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□ HTCE
○ Most Recent Sample
B Braun
△ TRAC



Inventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

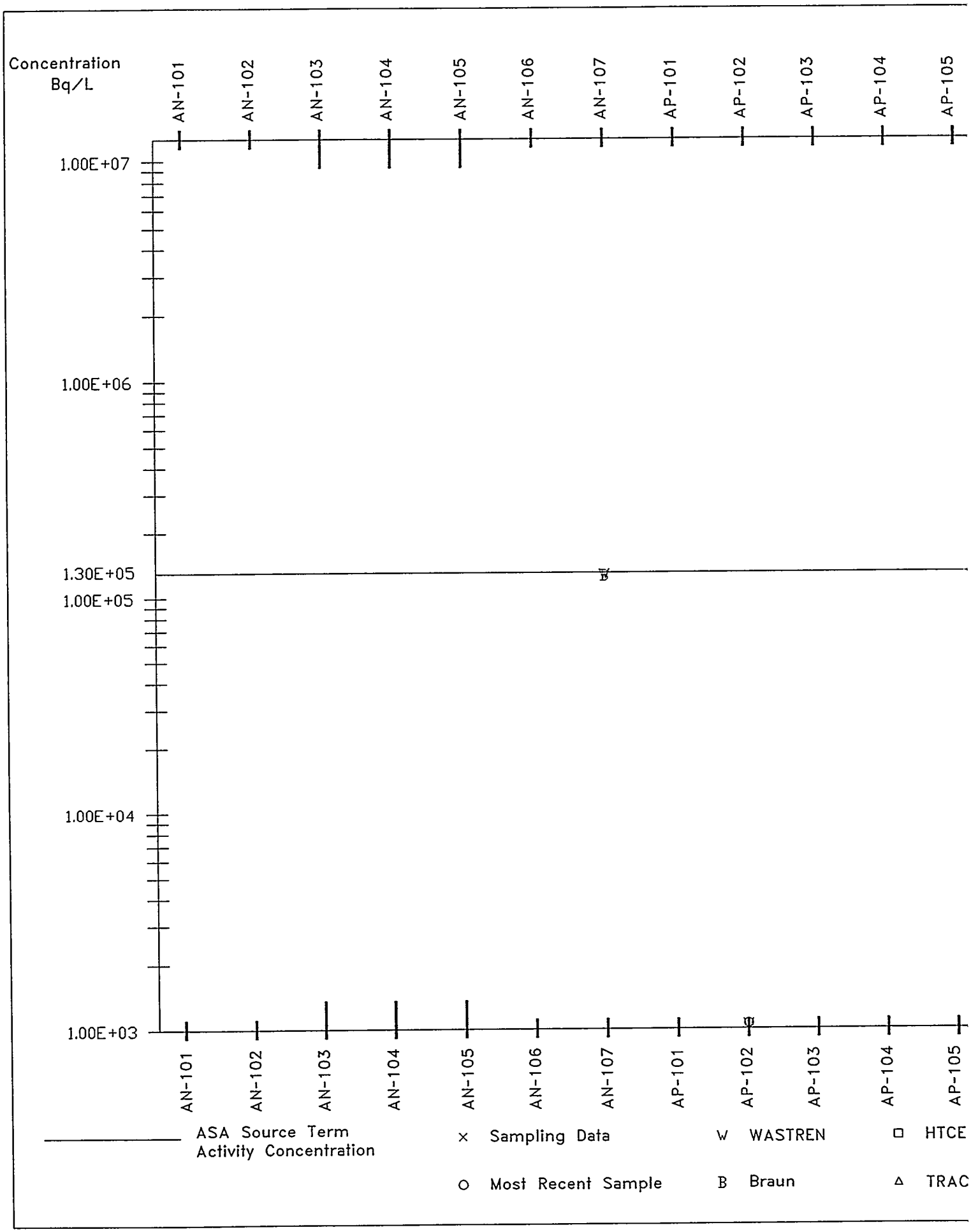
Extented tank lines represent Flamable Gas Watch List Tanks.

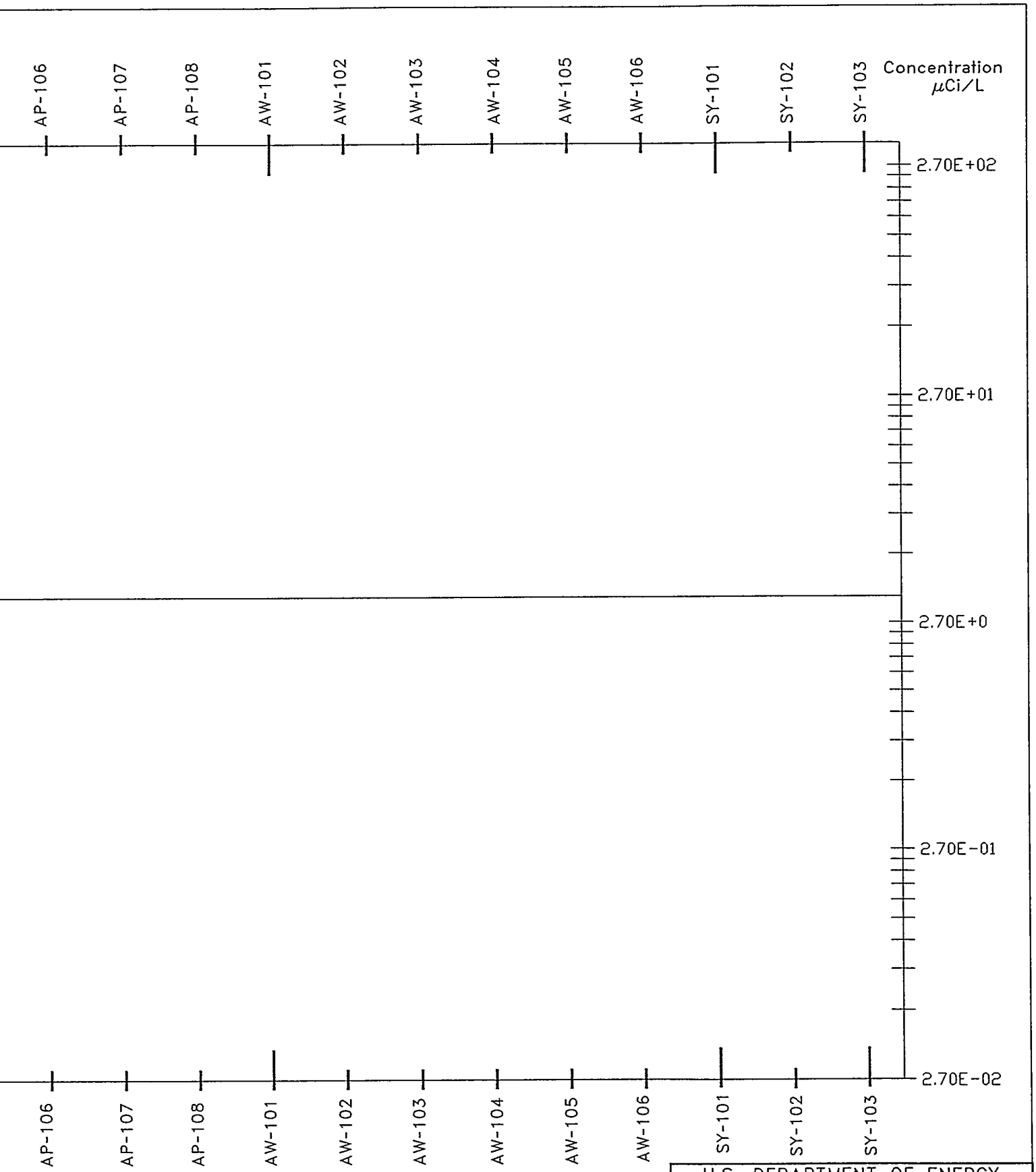
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Am241 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR24 | JOB NO E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+07
1.00E+06
1.30E+05
1.00E+05
1.00E+04
1.00E+03
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
HTCE
Most Recent Sample
Braun
TRAC



Inventory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

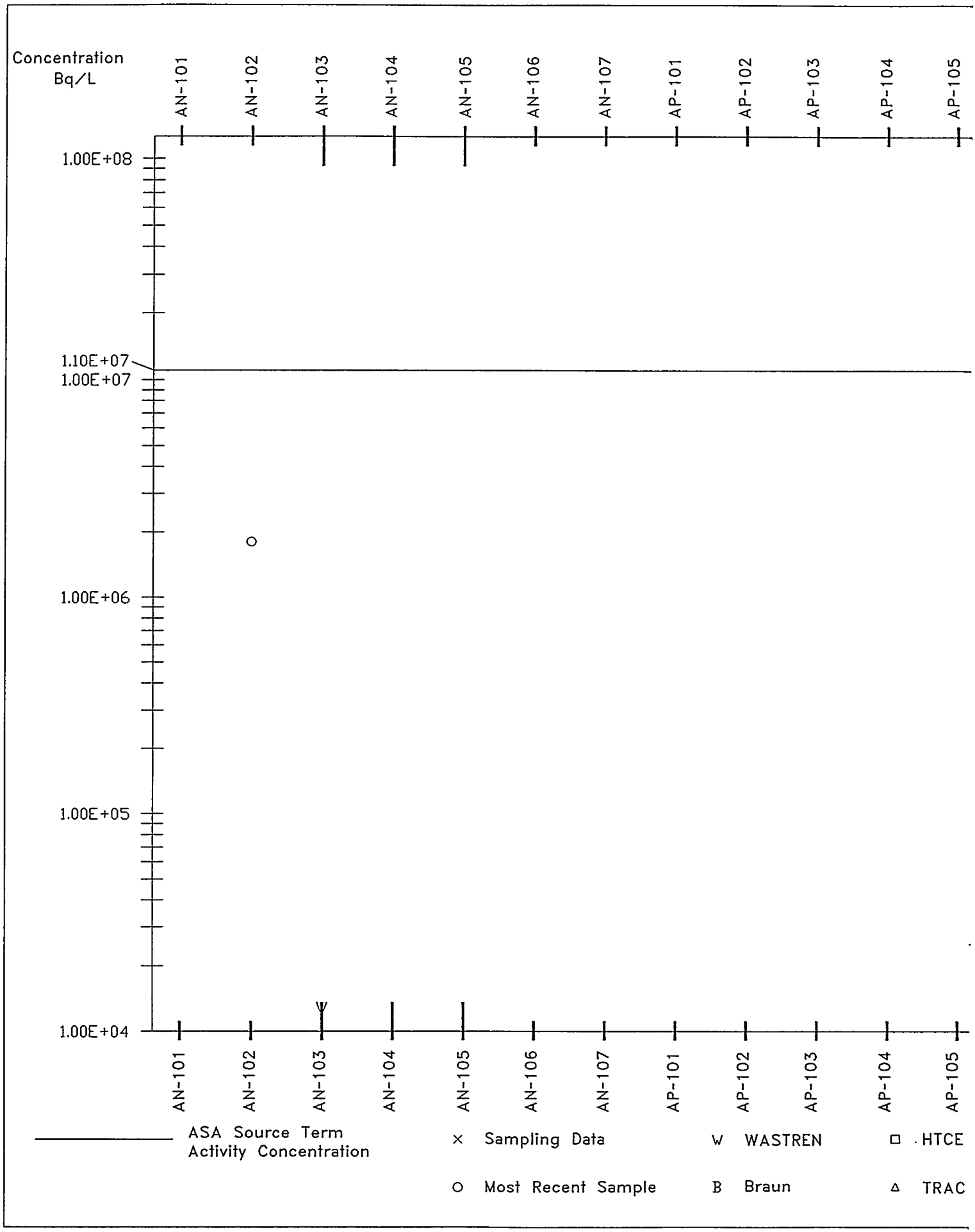
Extented tank lines represent Flamable Gas Watch List Tanks.

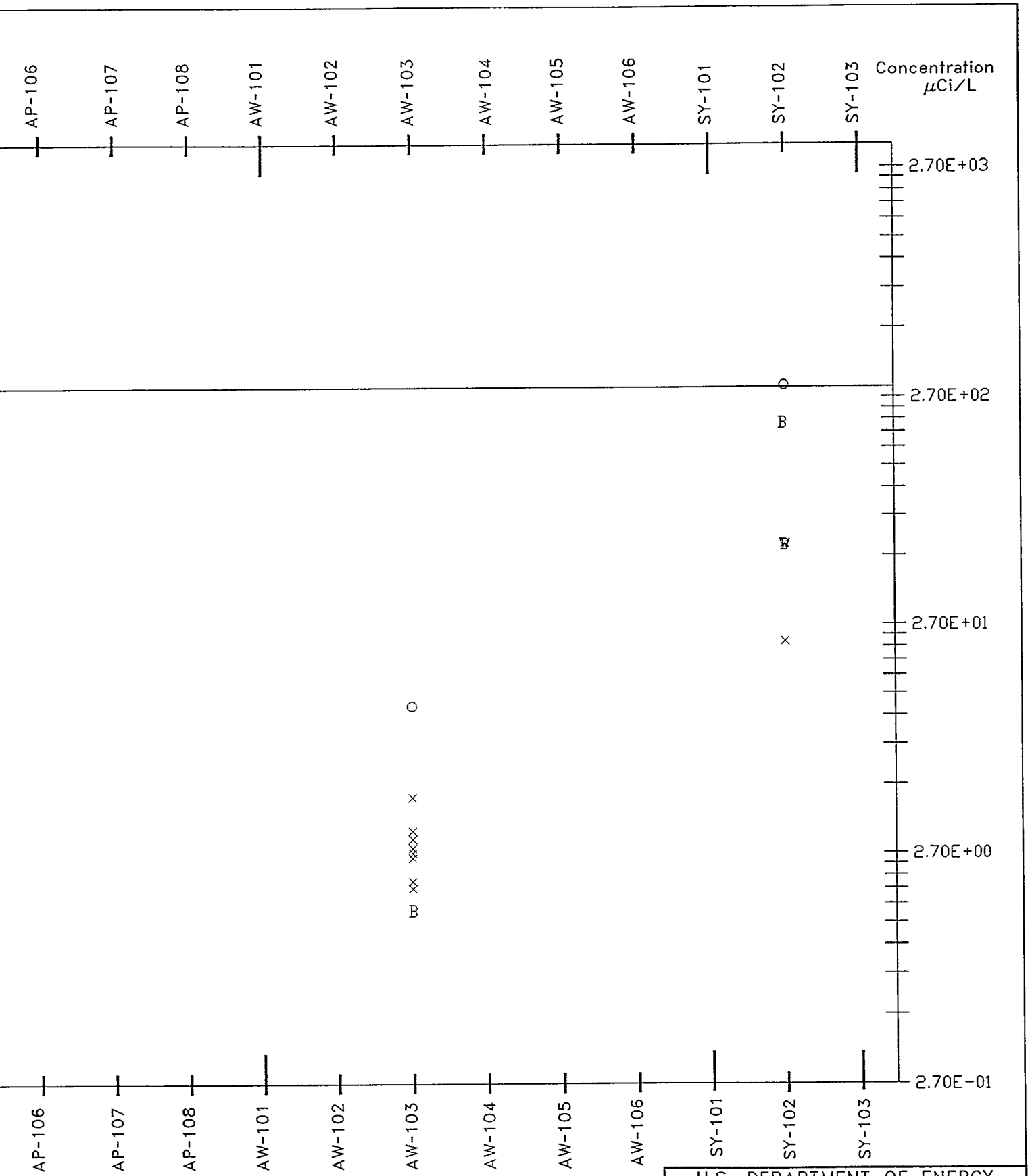
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Cm244 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR25 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+08
1.10E+07
1.00E+07
1.00E+06
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□ HTCE
○ Most Recent Sample
B Braun
△ TRAC



nventory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

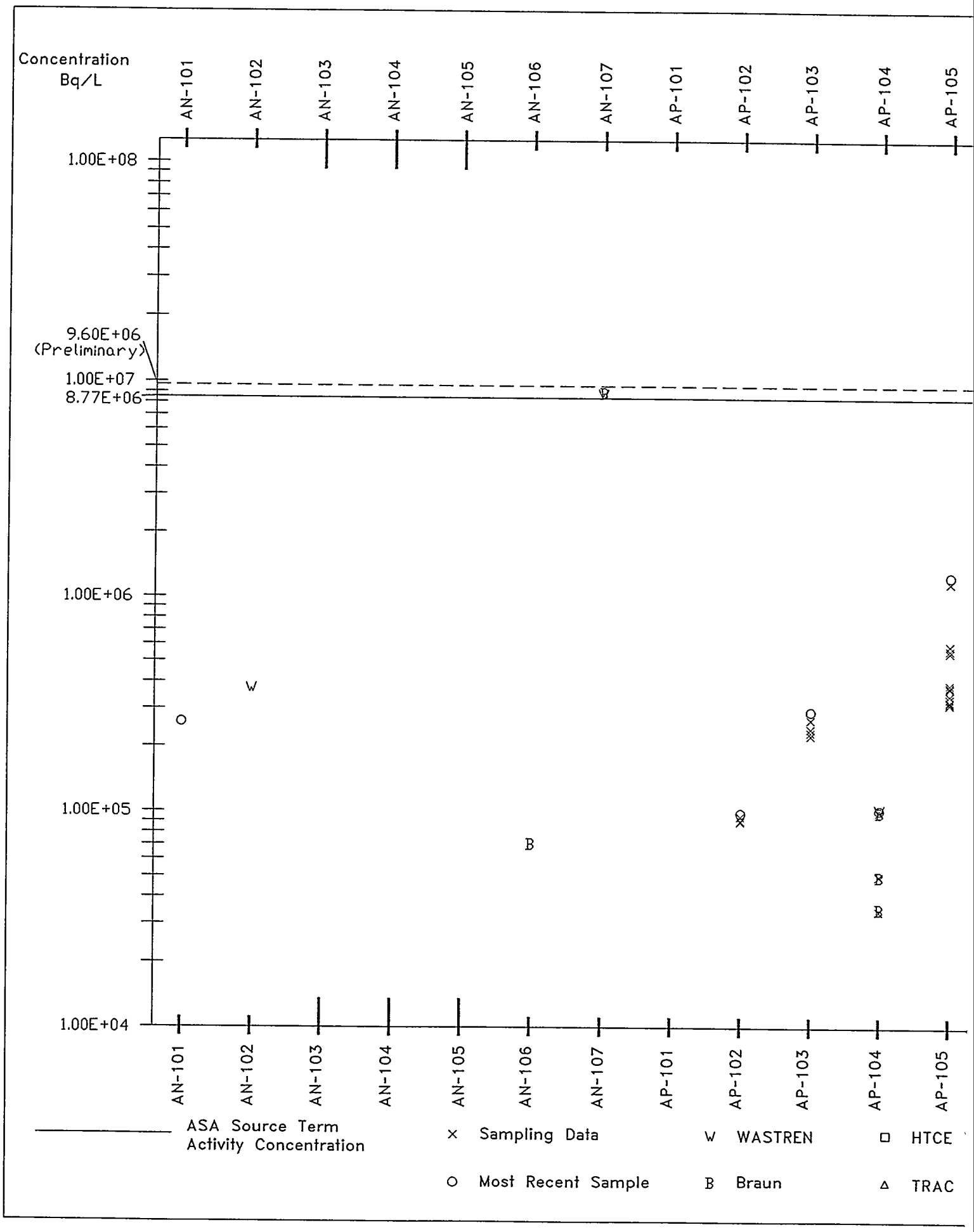
Extented tank lines represent Flamable Gas Watch List Tanks.

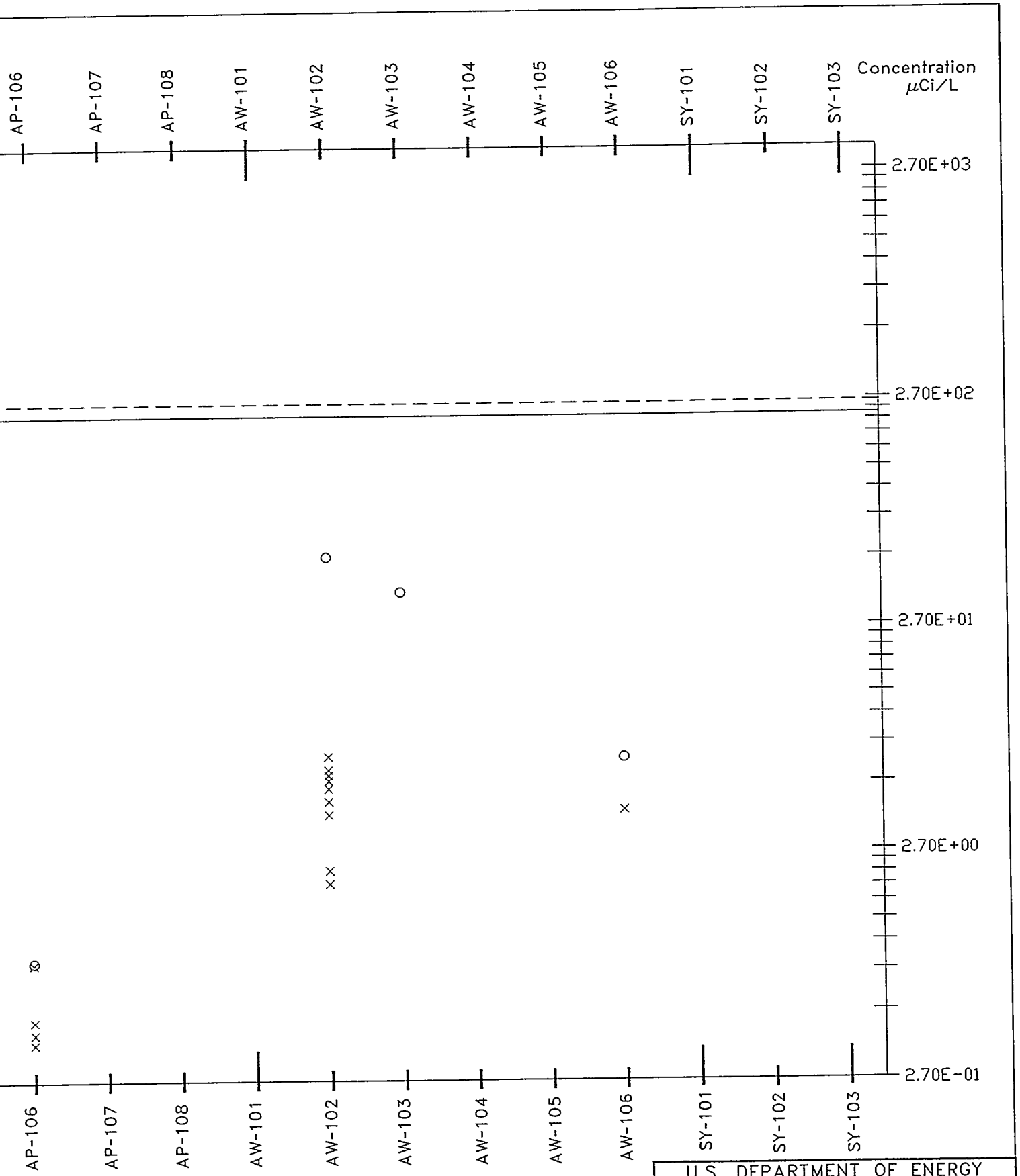
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Cm244 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR26 | JOB NO E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+08
9.60E+06
(Preliminary)
1.00E+07
8.77E+06
1.00E+06
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□ HTCE
○ Most Recent Sample
B Braun
△ TRAC



nventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

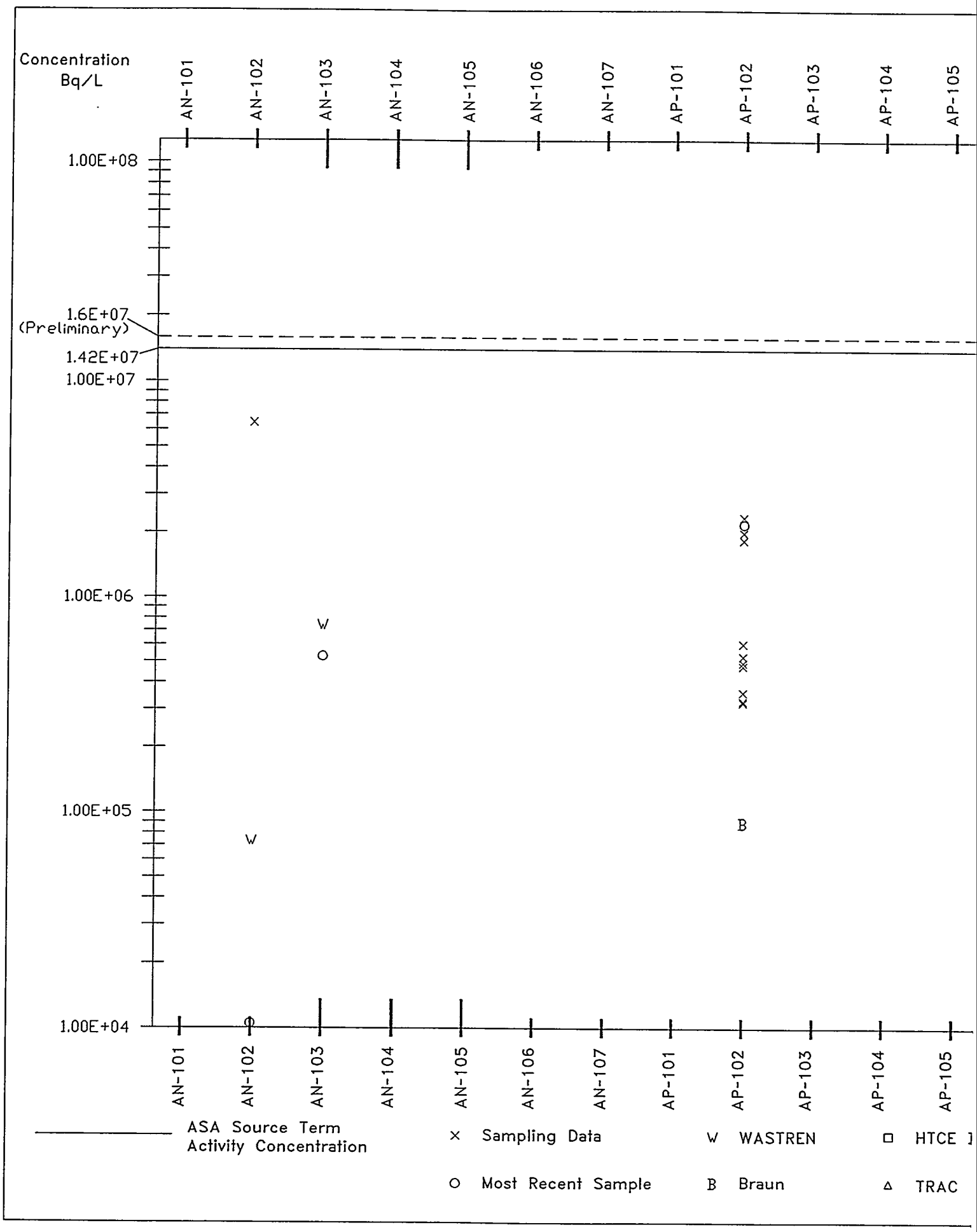
Extented tank lines represent Flamable Gas Watch List Tanks.

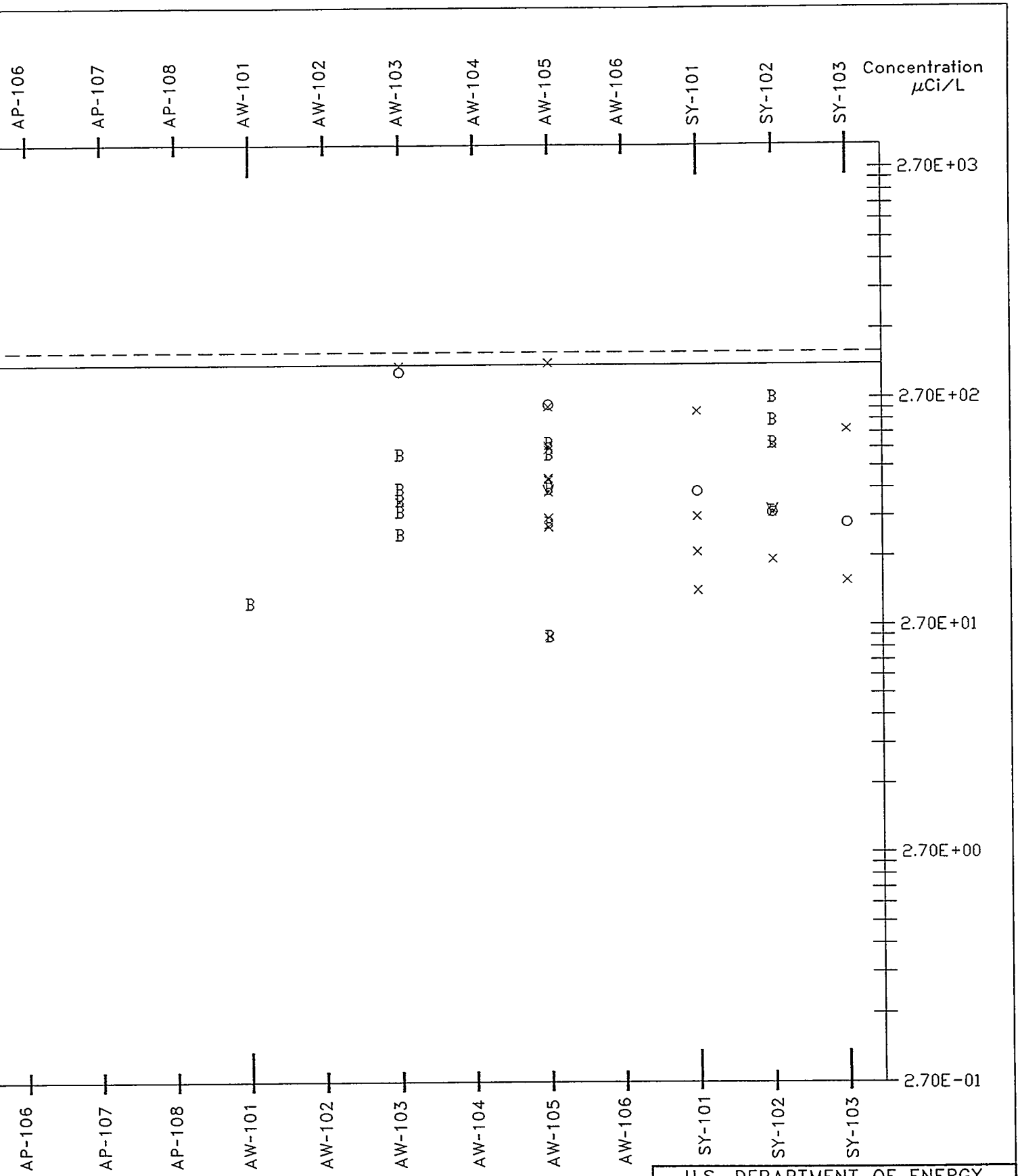
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Co60 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR27 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+08
1.6E+07
(Preliminary)
1.42E+07
1.00E+07
1.00E+06
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



ventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

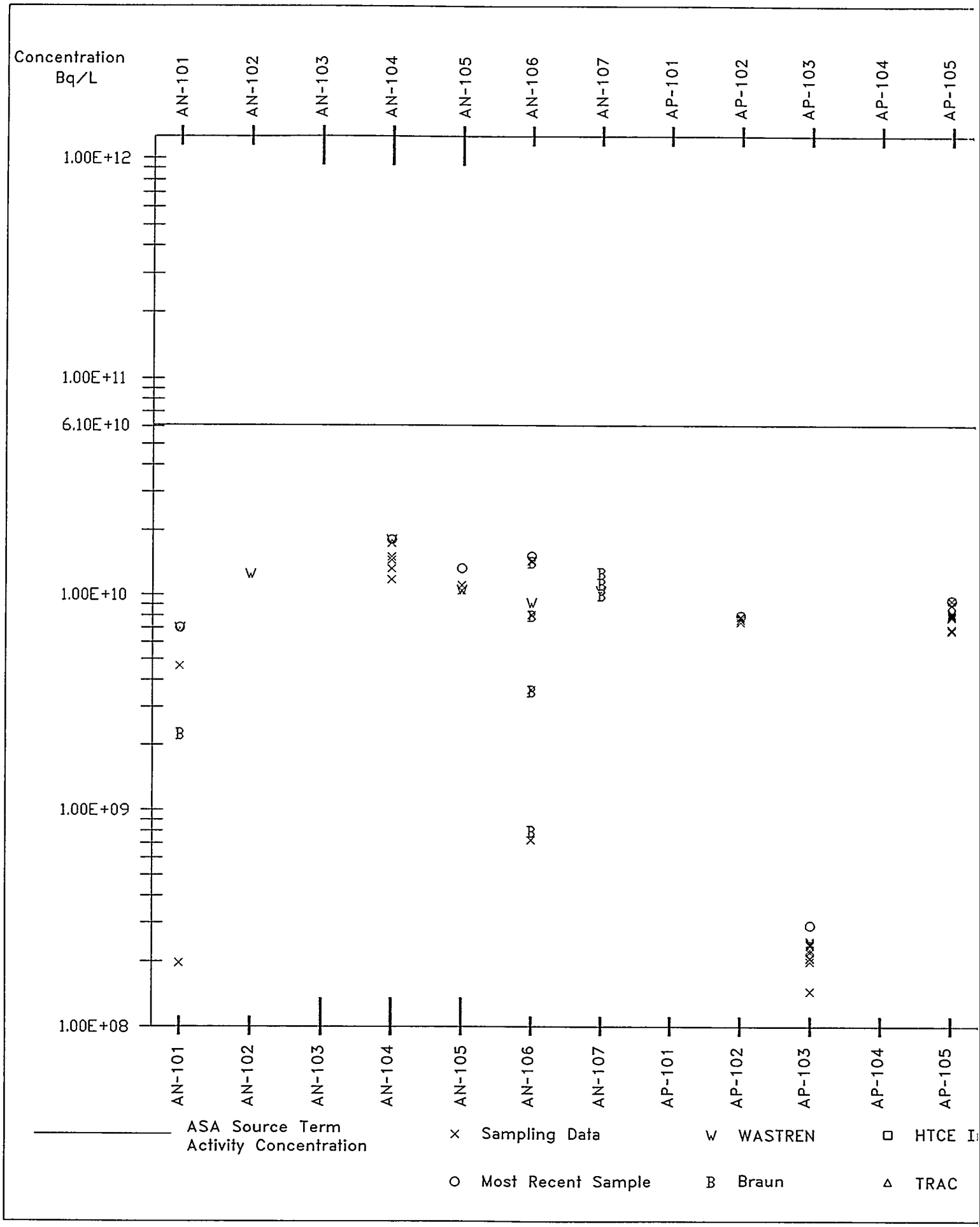
Extented tank lines represent Flamable Gas Watch List Tanks.

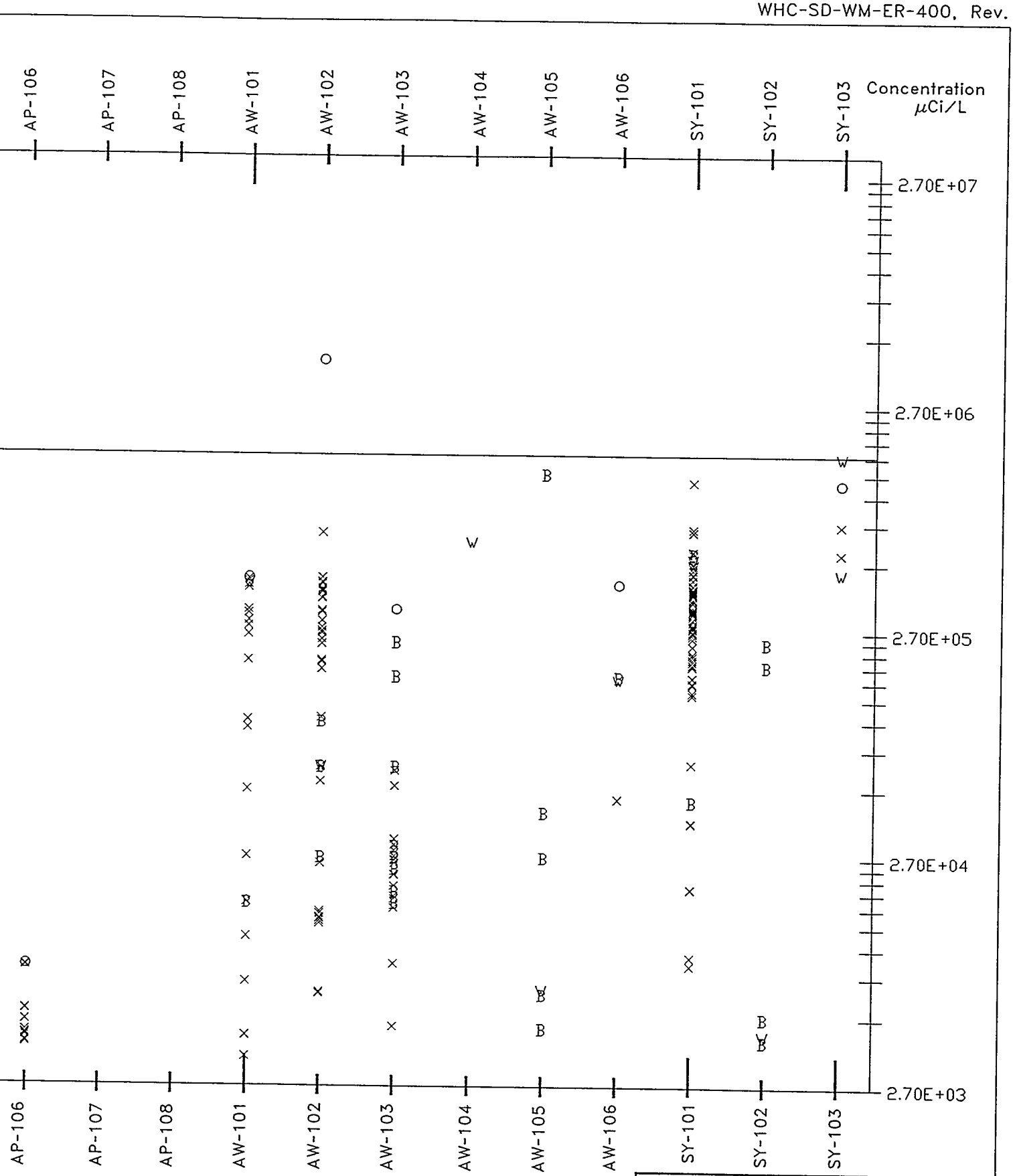
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Co60 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CR28 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
1.00E+12
1.00E+11
6.10E+10
1.00E+10
1.00E+09
1.00E+08
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE I
TRAC



entory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

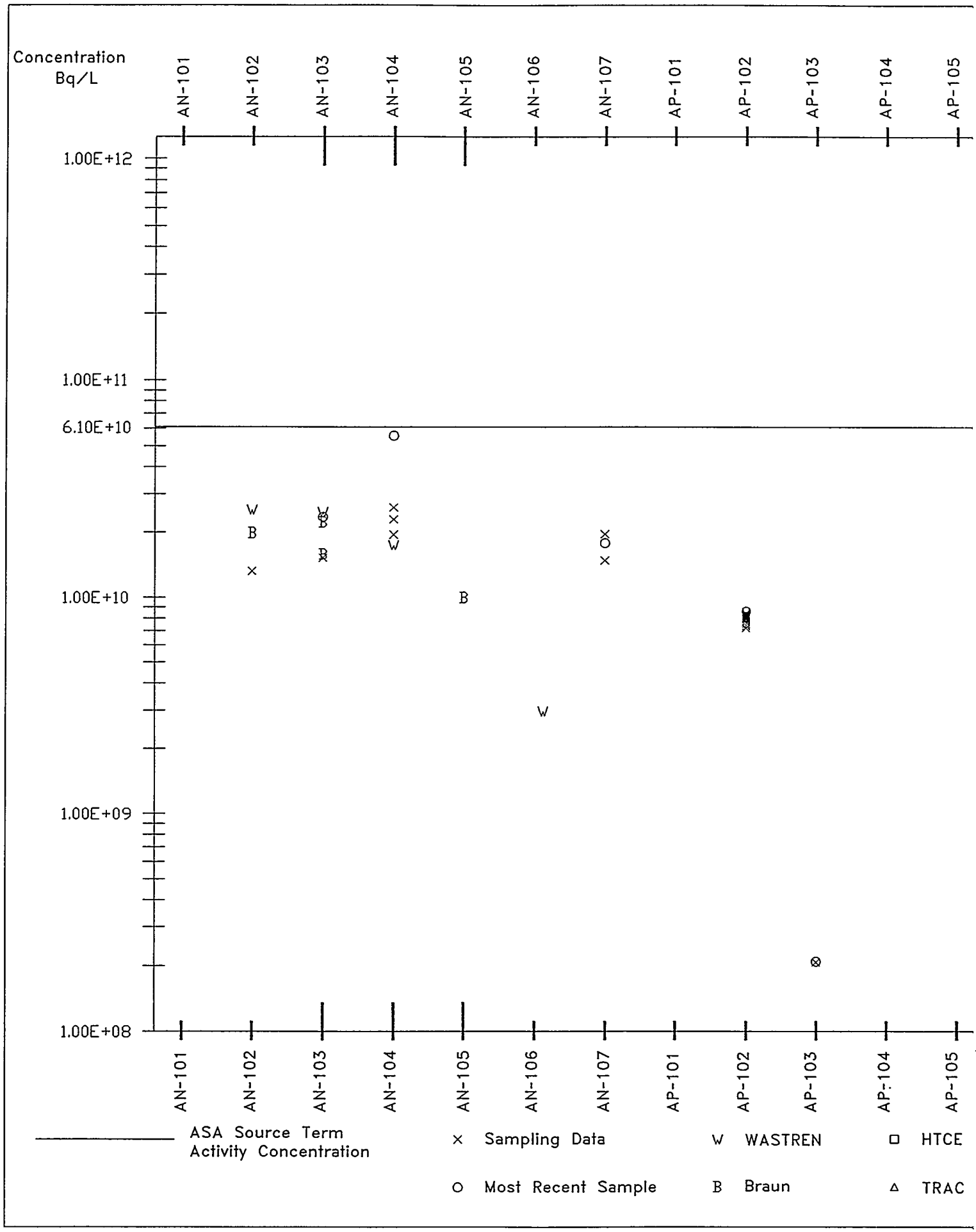
Extented tank lines represent Flamable Gas Watch List Tanks.

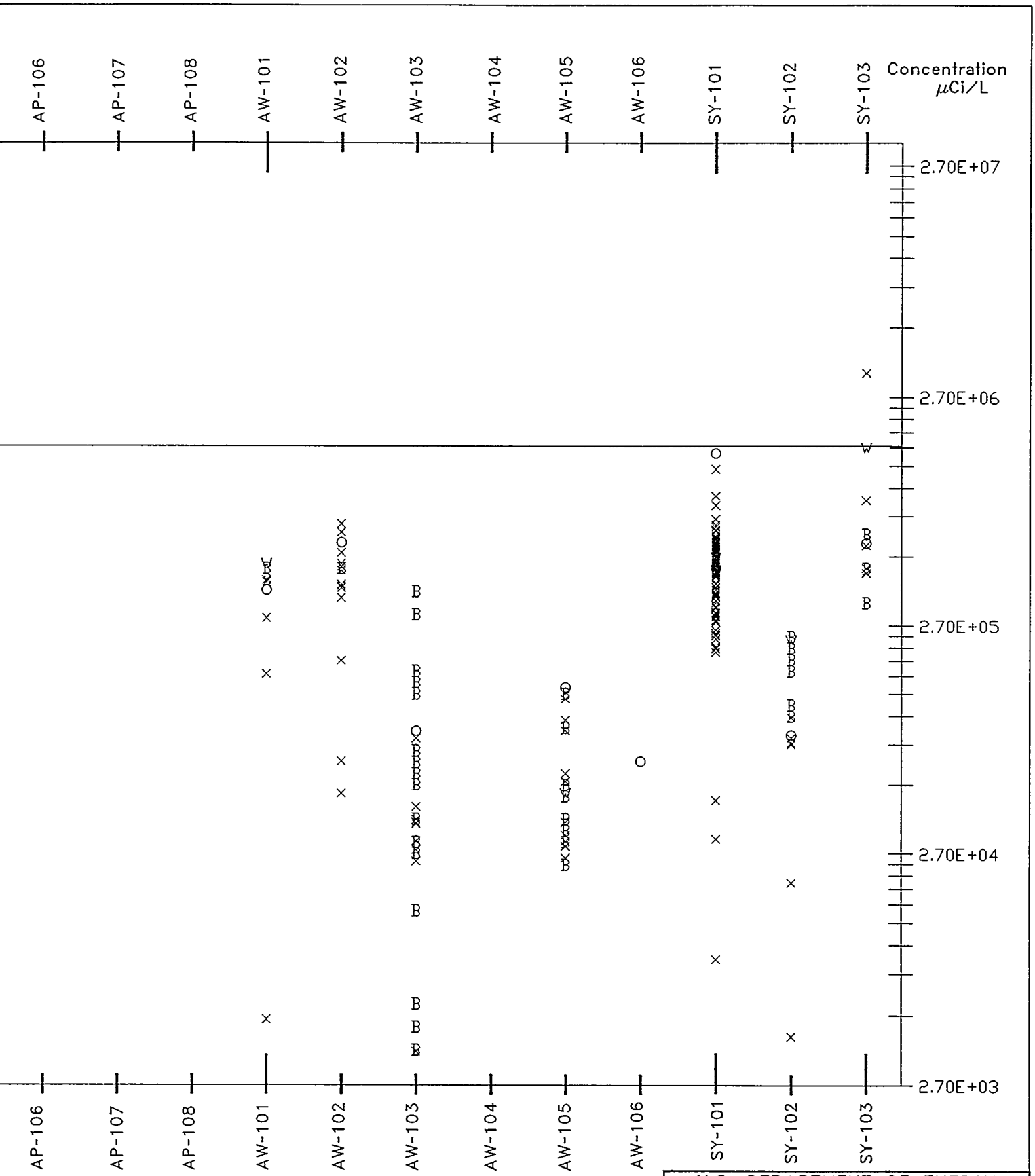
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Cs137 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR29 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+12
1.00E+11
6.10E+10
1.00E+10
1.00E+09
1.00E+08
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



nventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

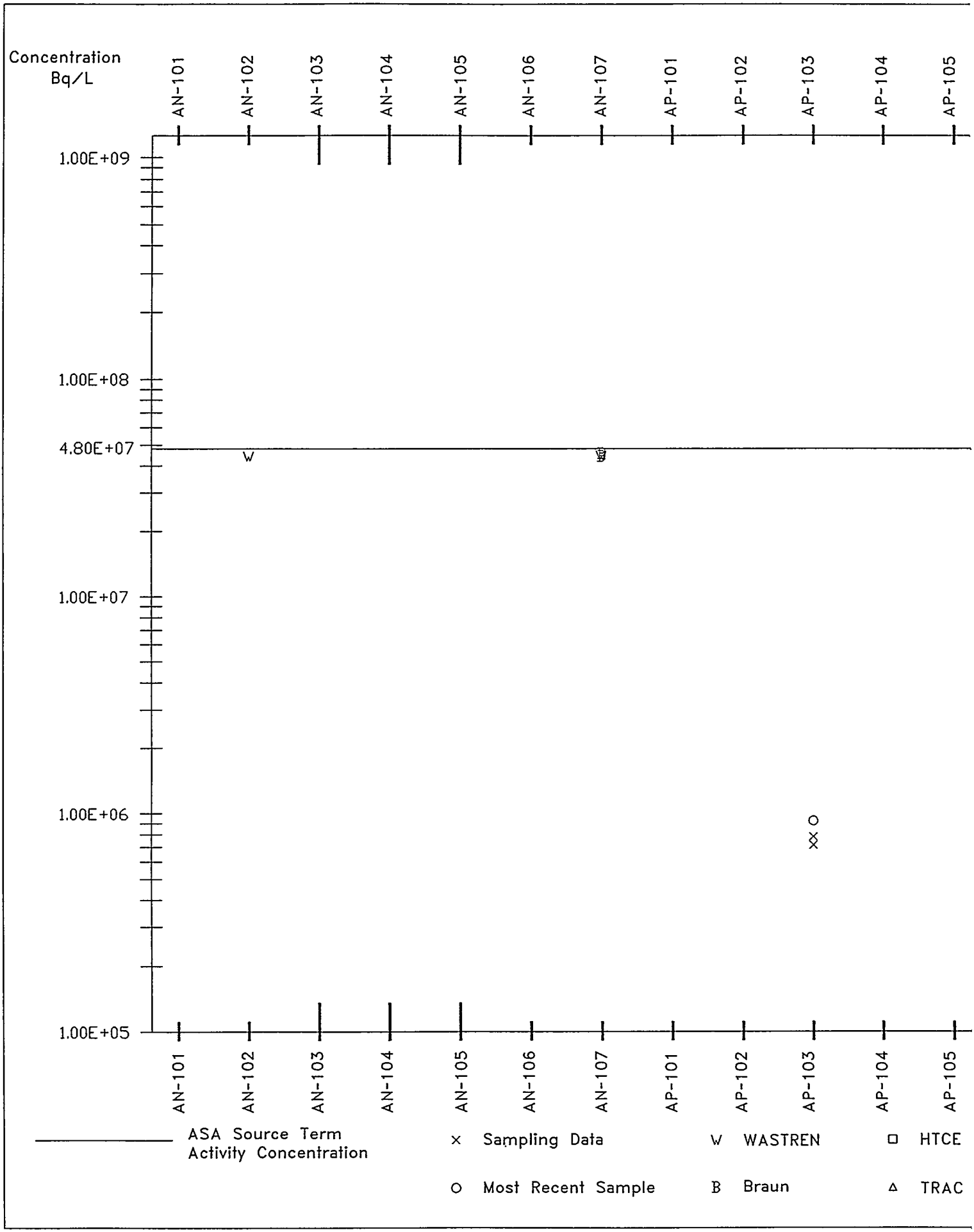
Extented tank lines represent Flamable Gas Watch List Tanks.

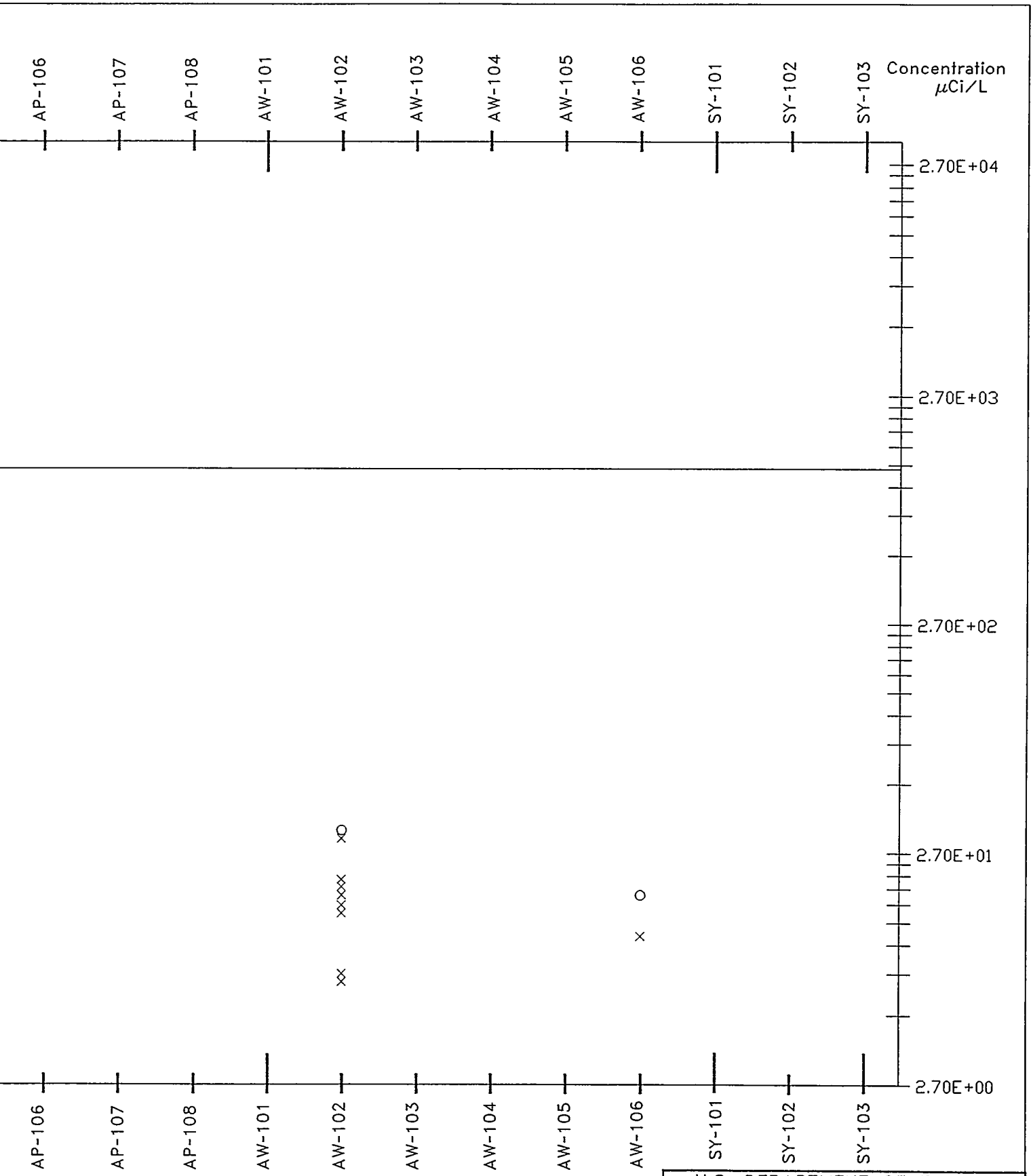
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Cs137 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CR30 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+09
1.00E+08
4.80E+07
1.00E+07
1.00E+06
1.00E+05
W
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



nventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

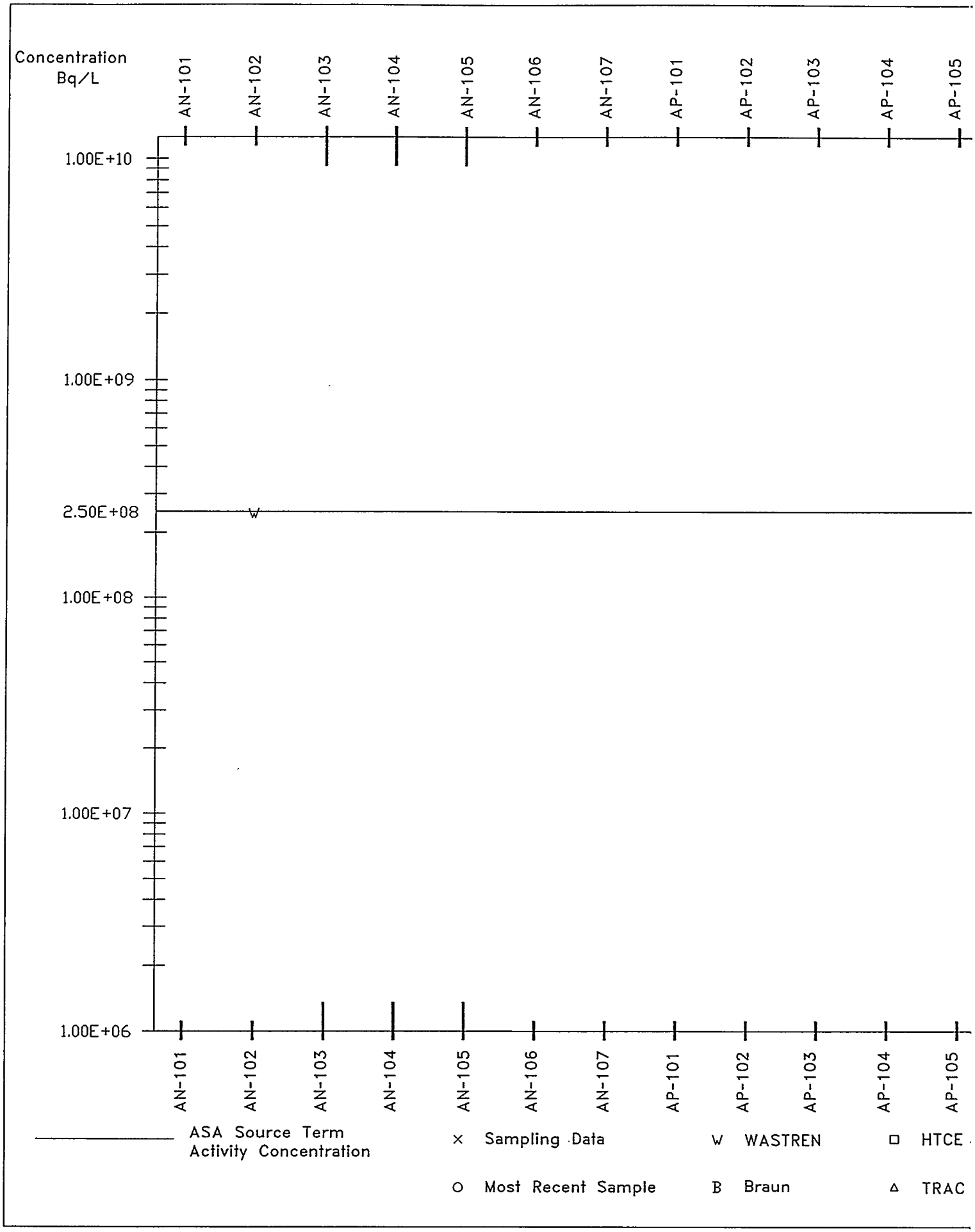
Extented tank lines represent Flamable Gas Watch List Tanks.

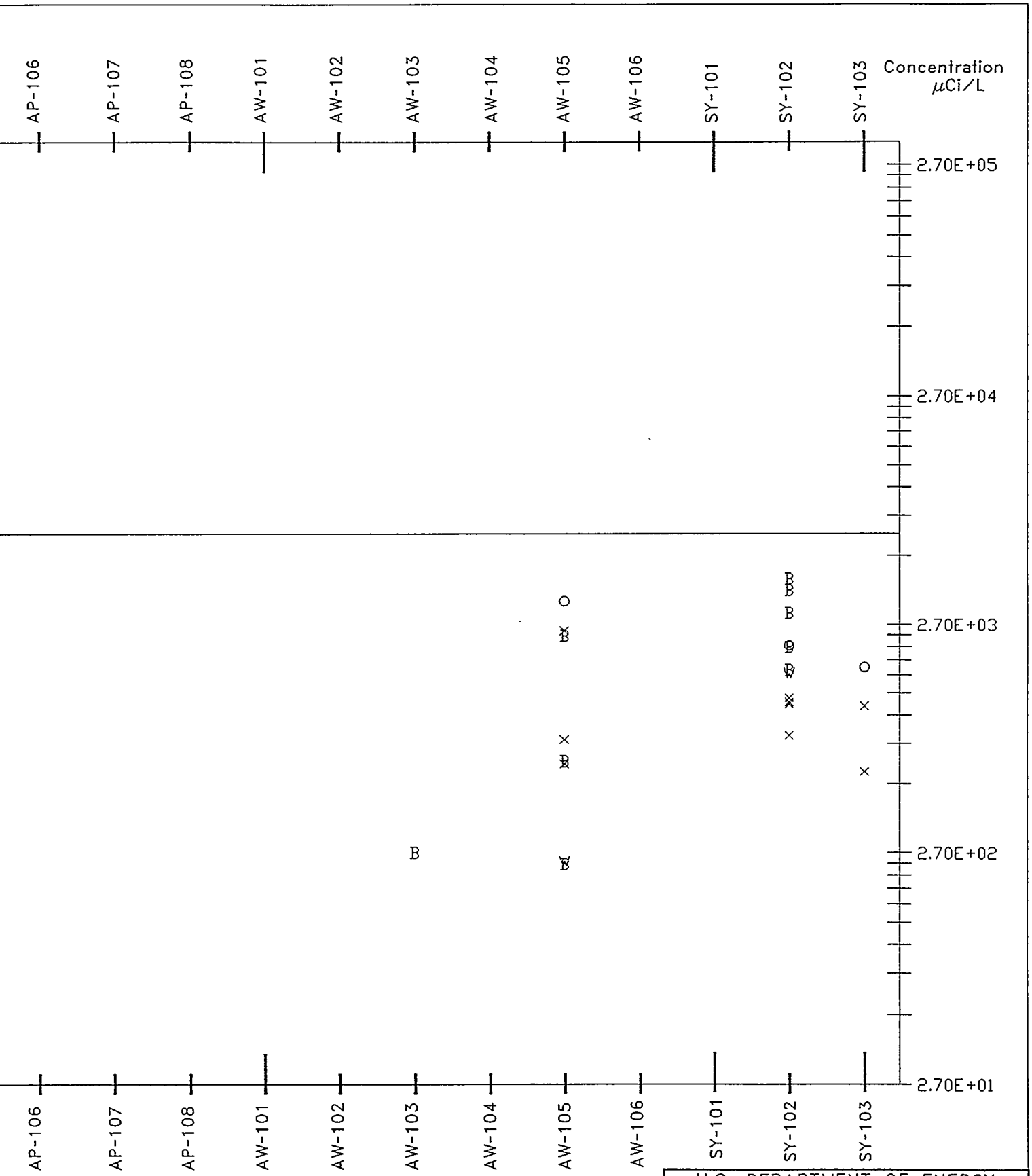
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Eu154 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR31 | JOB NO E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+10
1.00E+09
2.50E+08
1.00E+08
1.00E+07
1.00E+06
W
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□ HTCE
○ Most Recent Sample
B Braun
△ TRAC



nventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

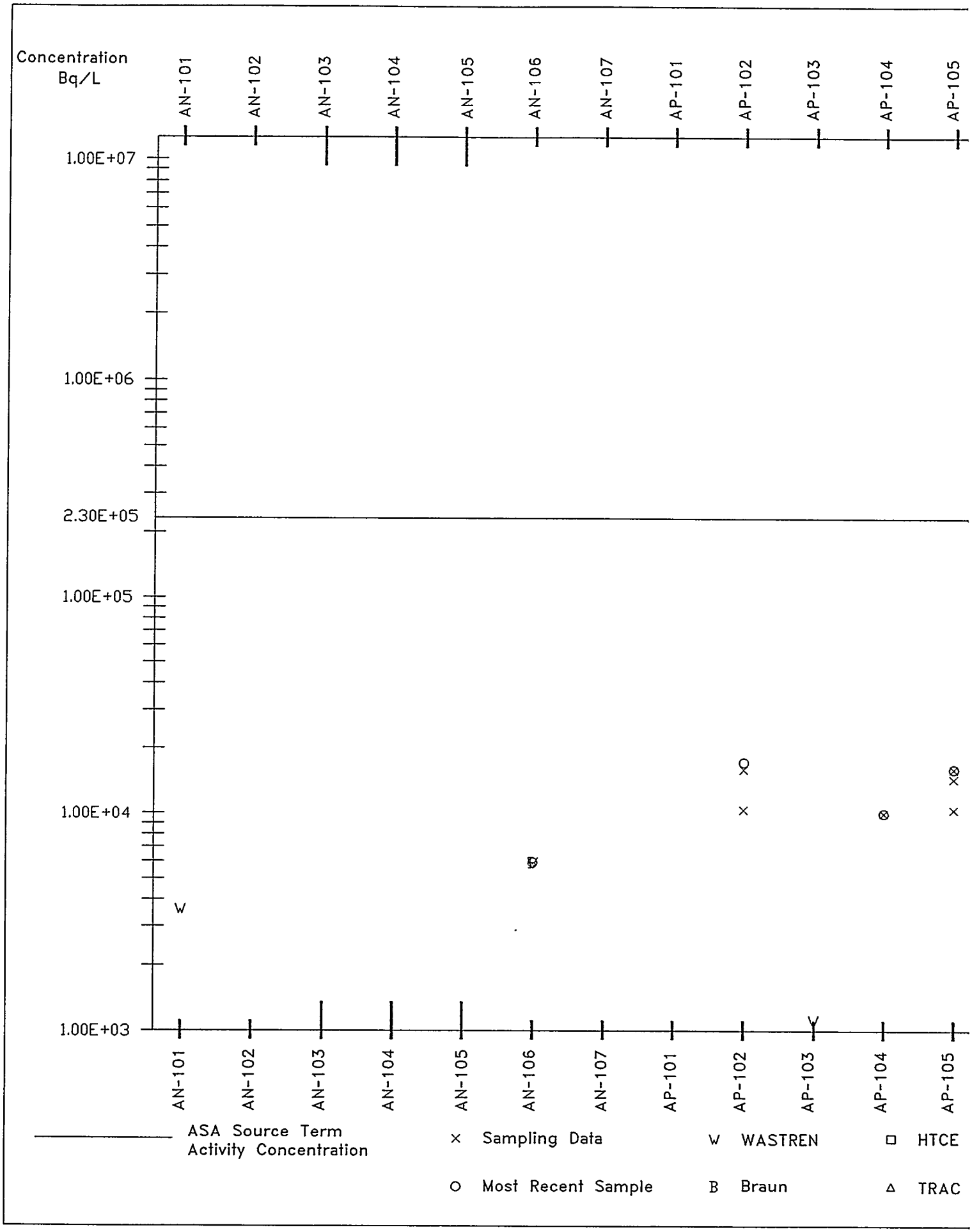
Extented tank lines represent Flamable Gas Watch List Tanks.

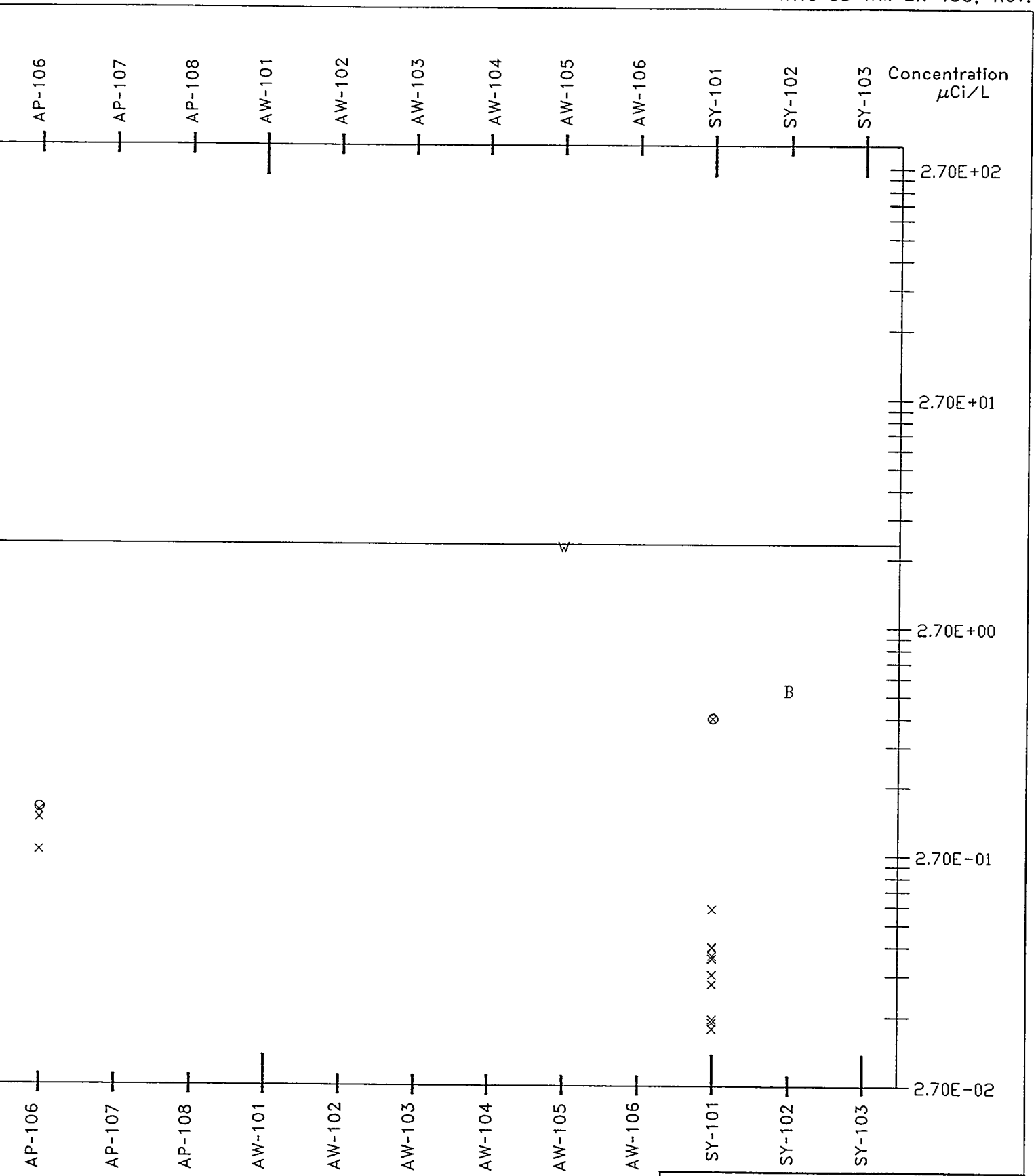
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Eu154 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR32 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+07
1.00E+06
2.30E+05
1.00E+05
1.00E+04
1.00E+03
W
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



ventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

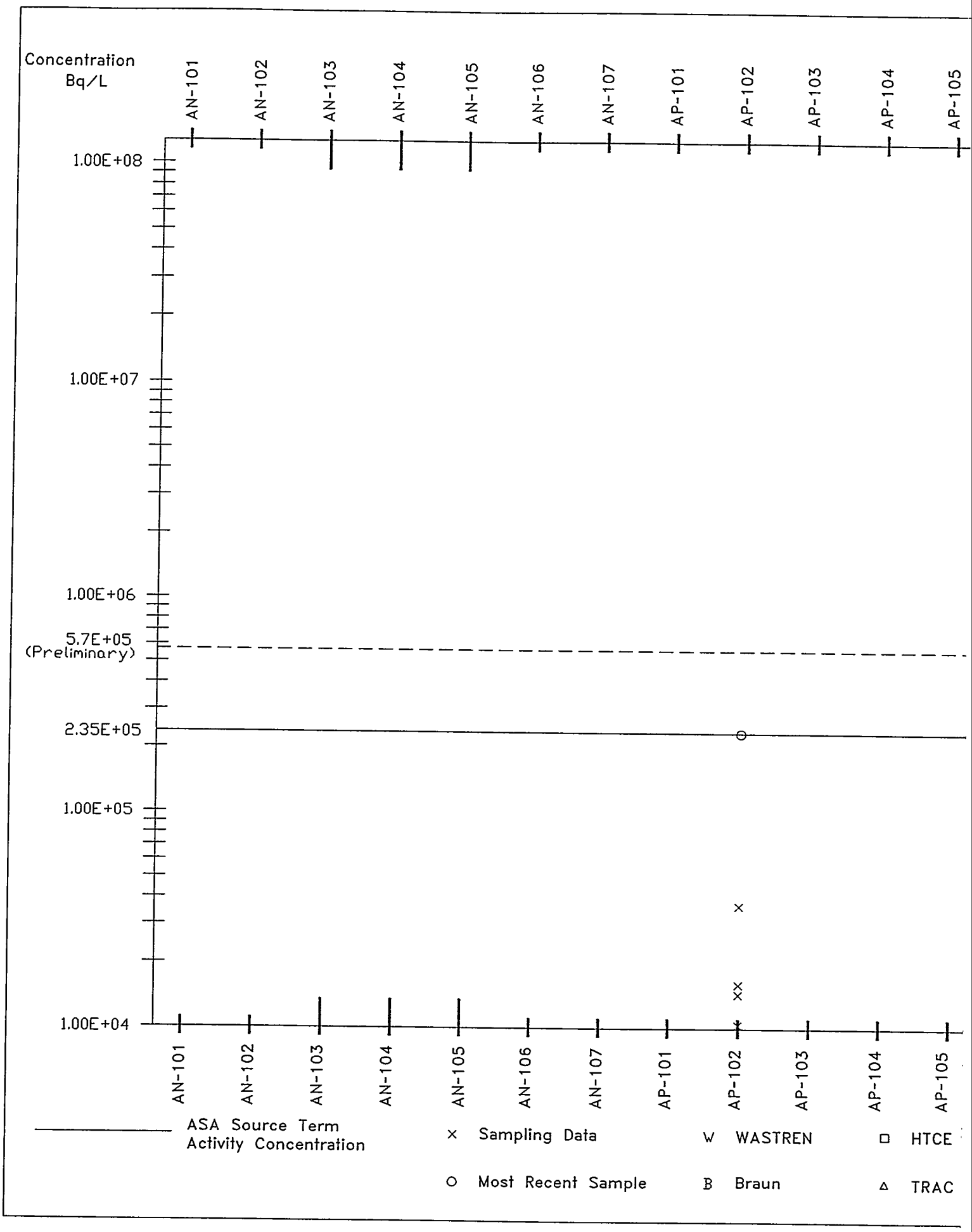
Extented tank lines represent Flamable Gas Watch List Tanks.

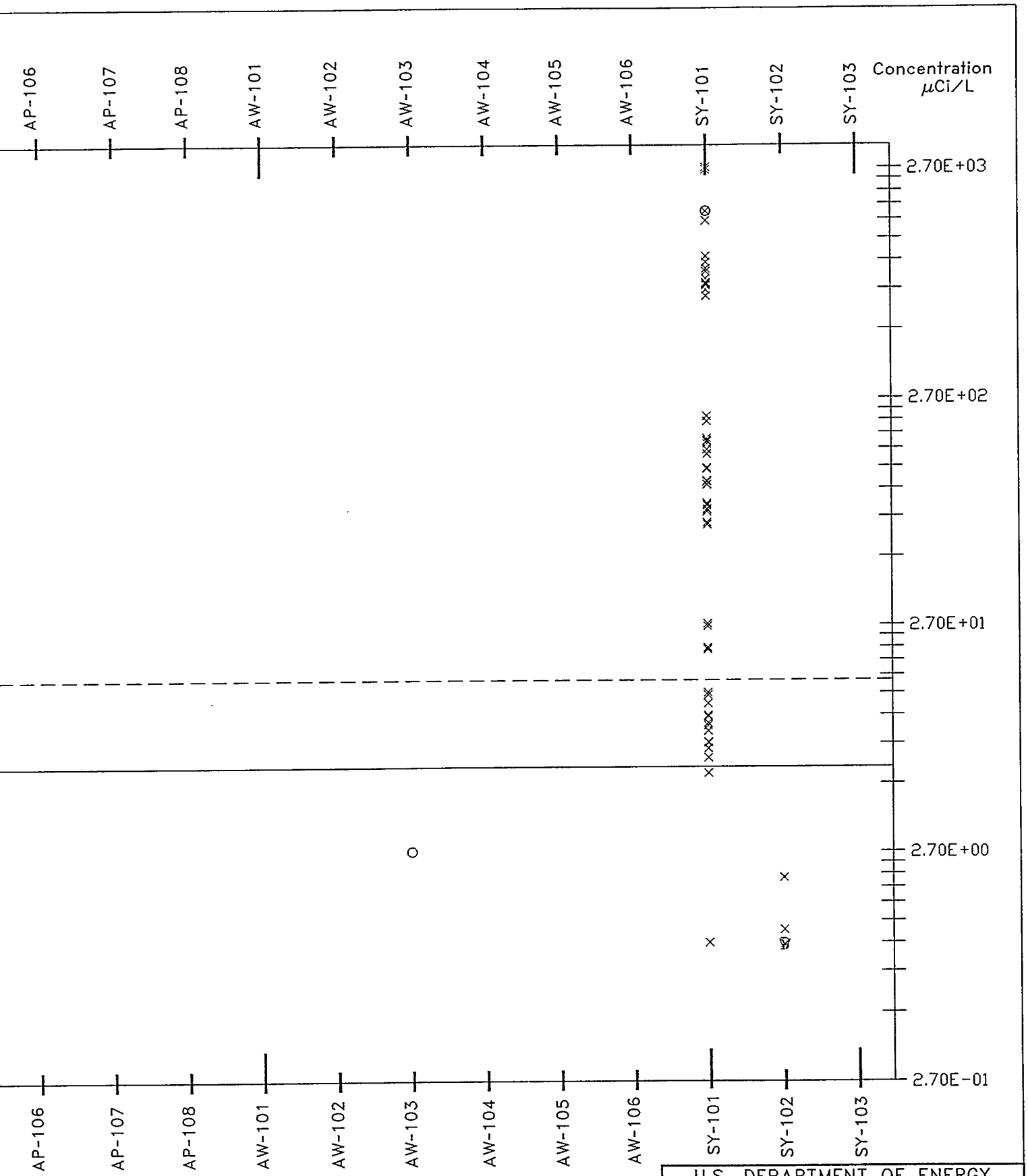
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Np237 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR33 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+08
1.00E+07
1.00E+06
5.7E+05
(Preliminary)
2.35E+05
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun
HTCE
TRAC



nventory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

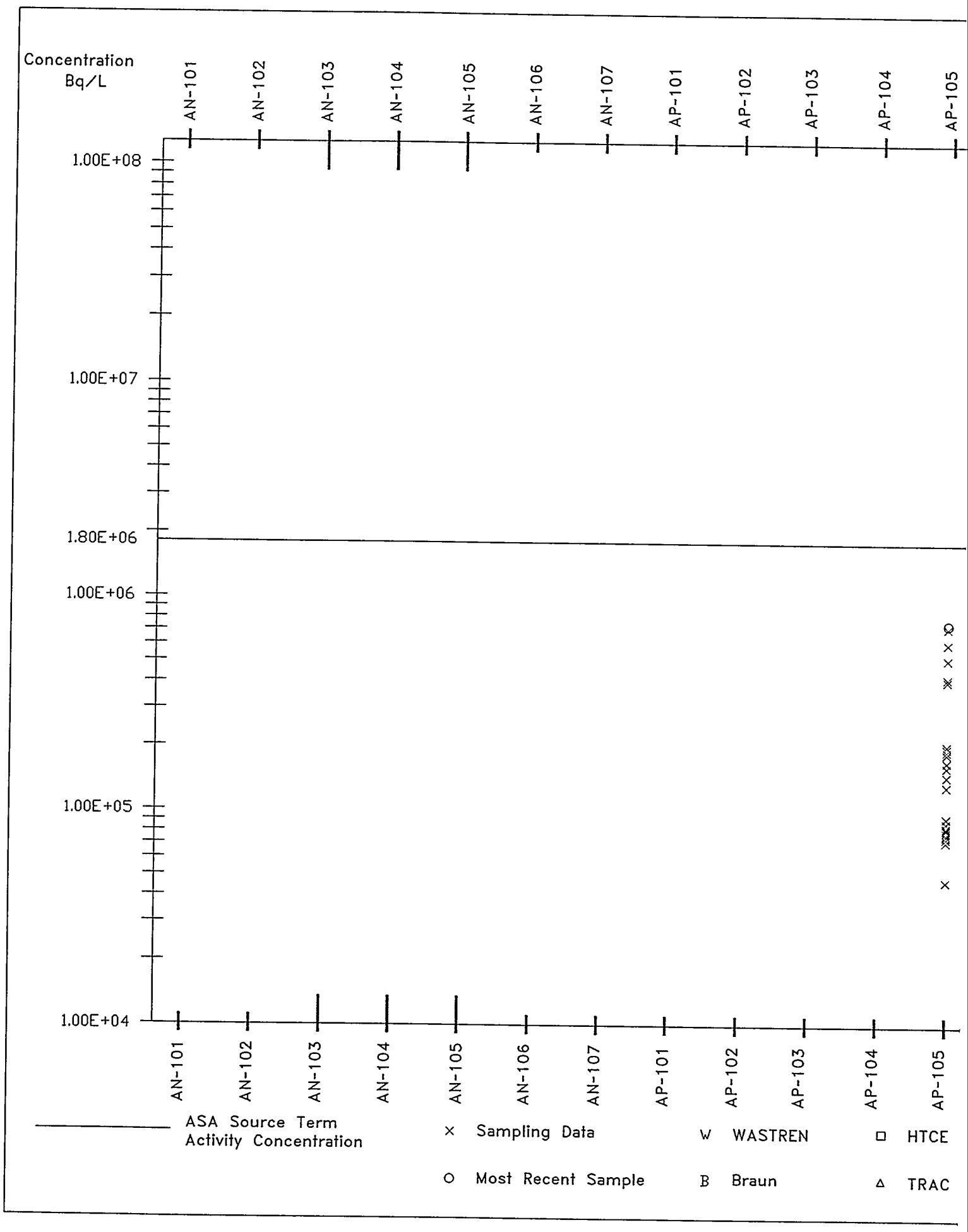
Extented tank lines represent Flamable Gas Watch List Tanks.

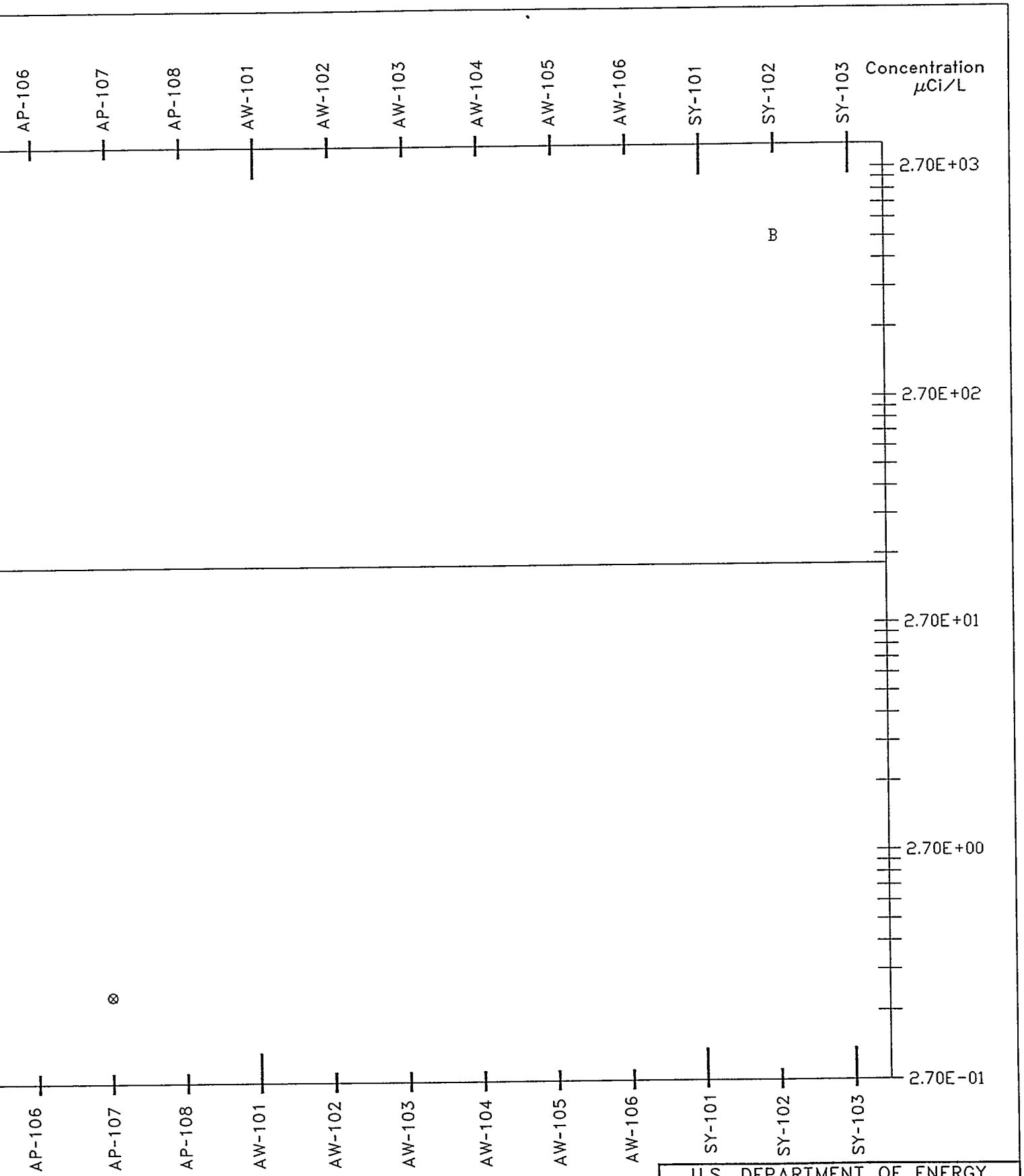
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Np237 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No.	JOB NO.	Date
ES-VAL-CR34	E01595	4/95


Concentration
Bq/L
1.00E+08
1.00E+07
1.80E+06
1.00E+06
1.00E+05
1.00E+04
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□ HTCE
○ Most Recent Sample
B Braun
△ TRAC



nventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

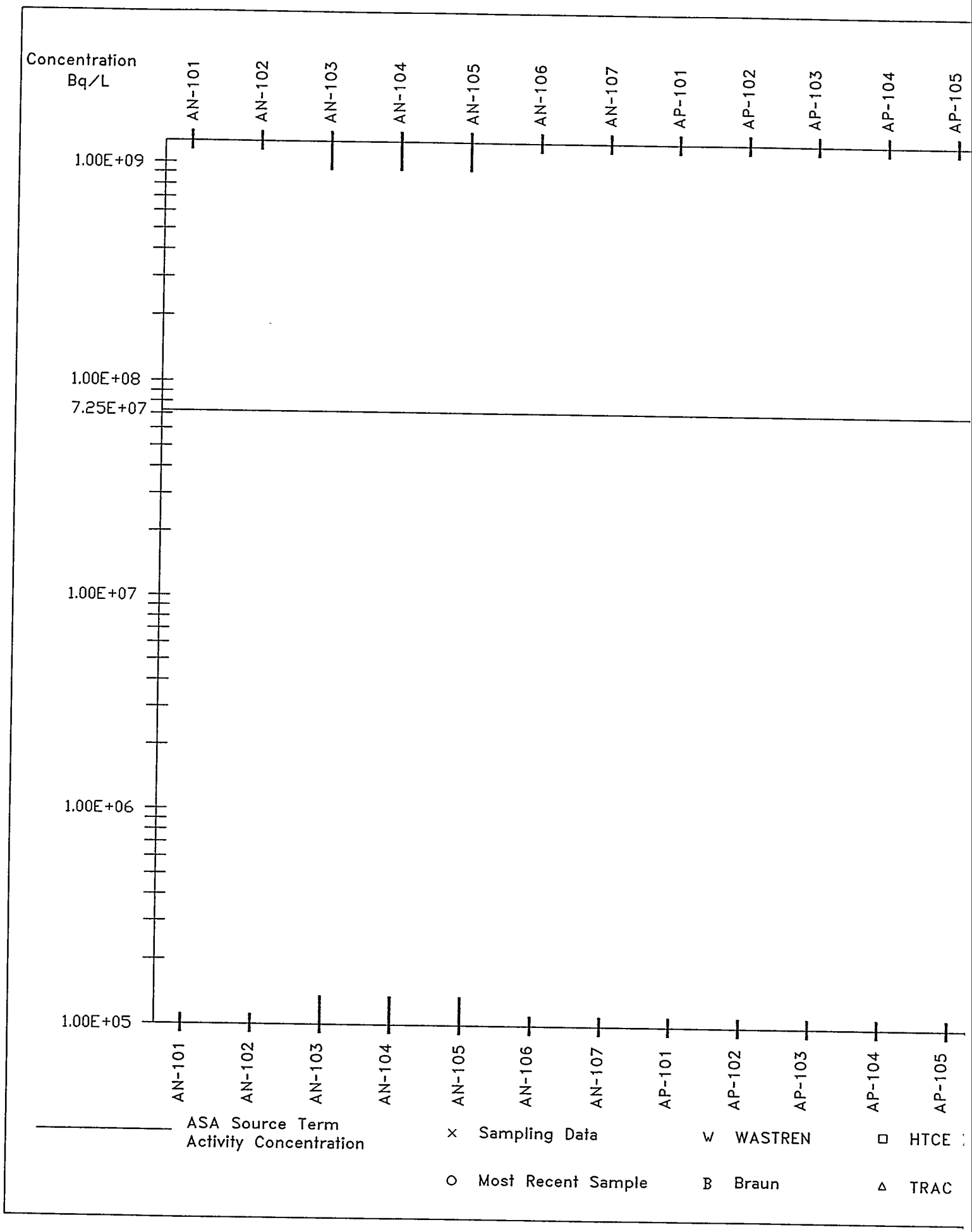
Extented tank lines represent Flamable Gas Watch List Tanks.

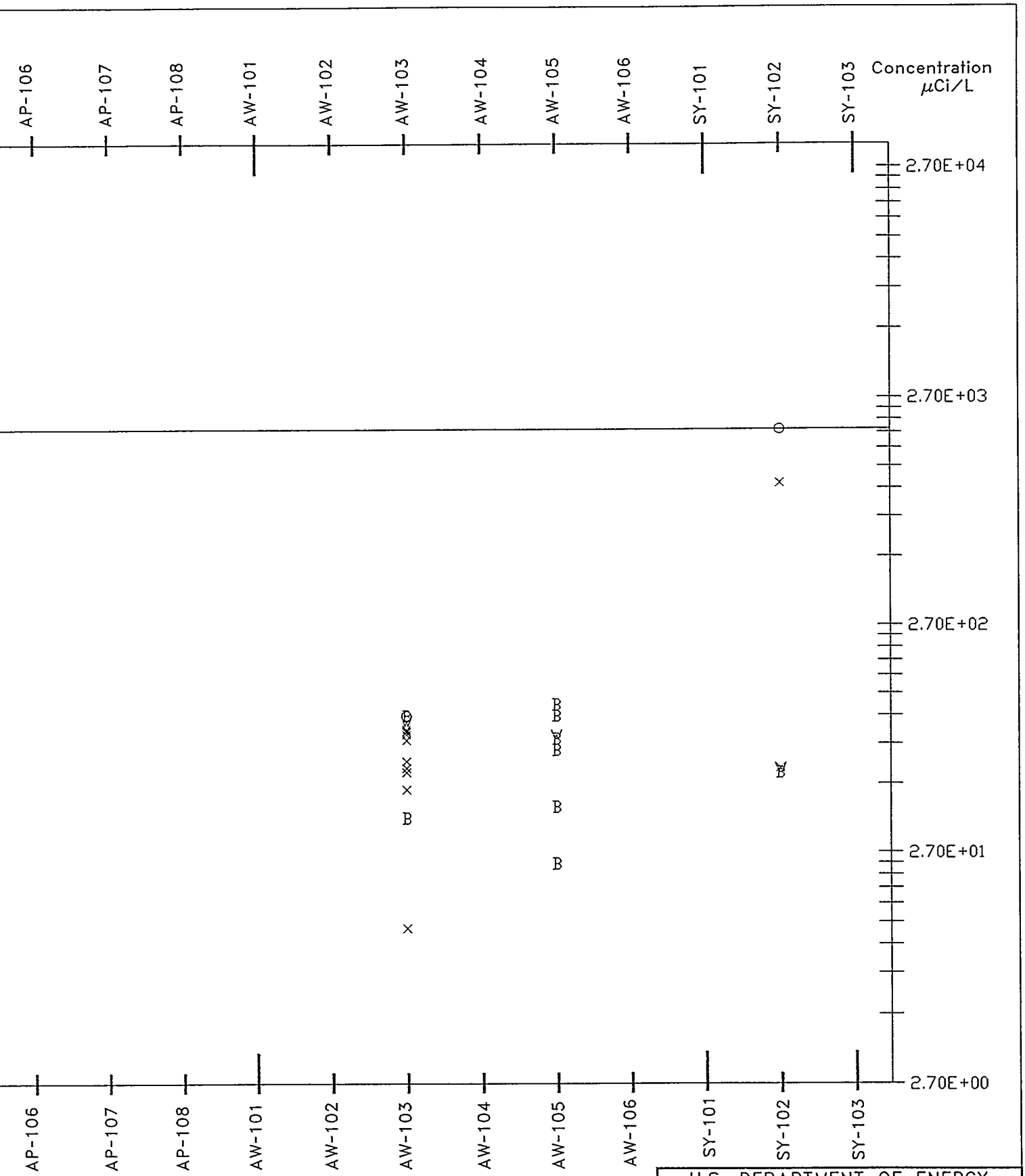
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Pu238 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR35 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
1.00E+09
1.00E+08
7.25E+07
1.00E+07
1.00E+06
1.00E+05
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□ HTCE
○ Most Recent Sample
B Braun
△ TRAC



nventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

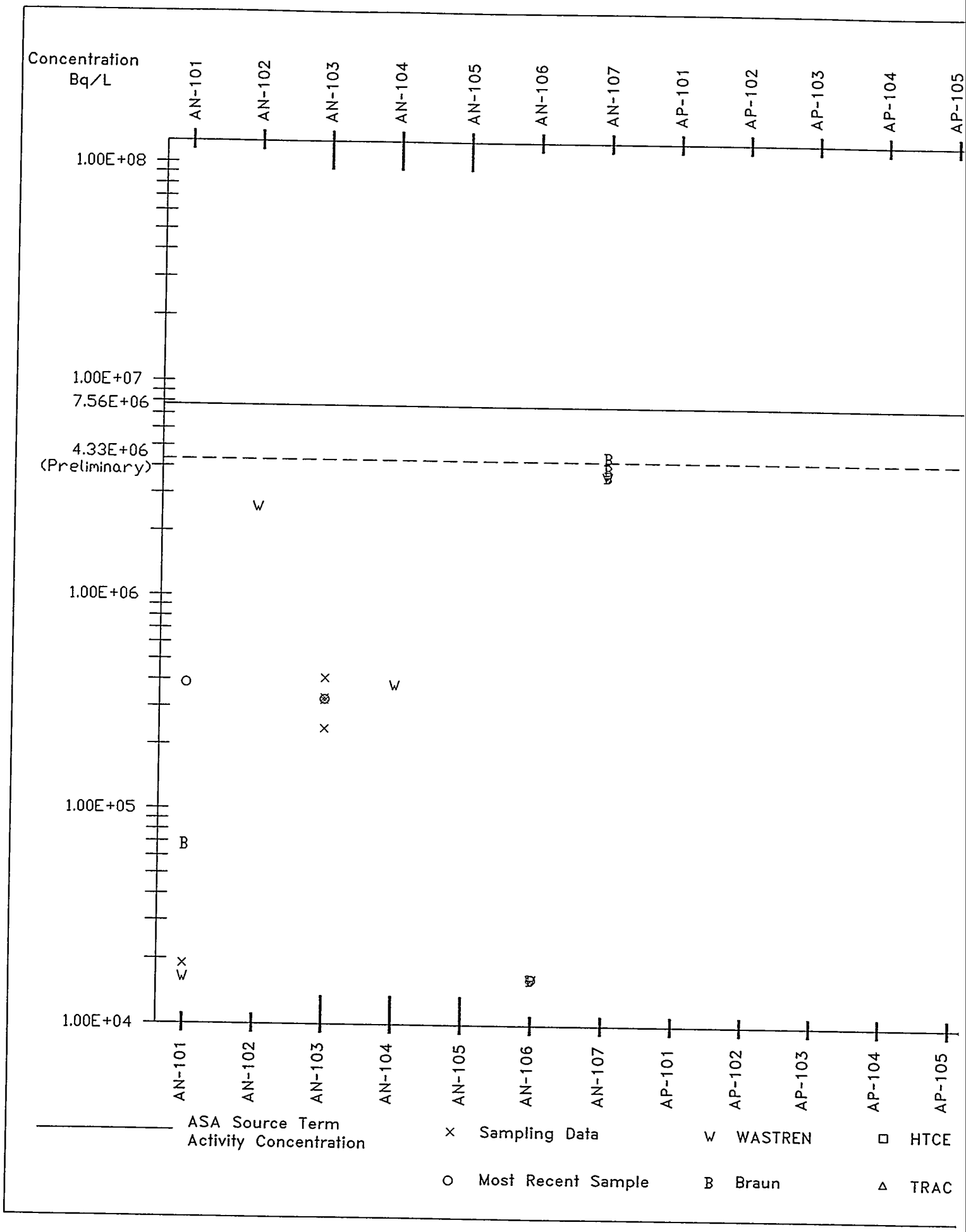
Extented tank lines represent Flamable Gas Watch List Tanks.

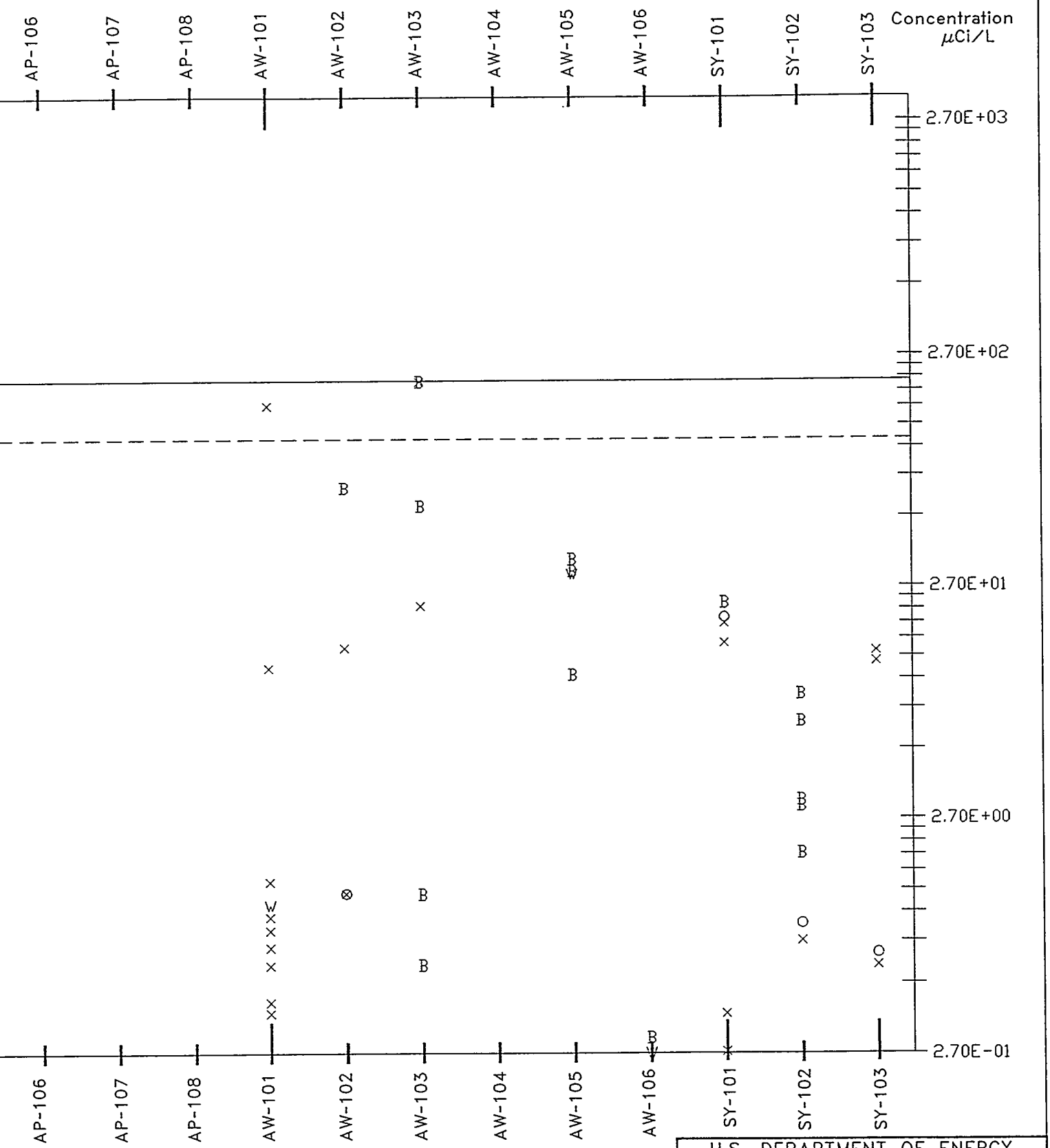
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Pu238 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR36 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+08
1.00E+07
7.56E+06
4.33E+06
(Preliminary)
1.00E+06
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
HTCE
Most Recent Sample
Braun
TRAC



nventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

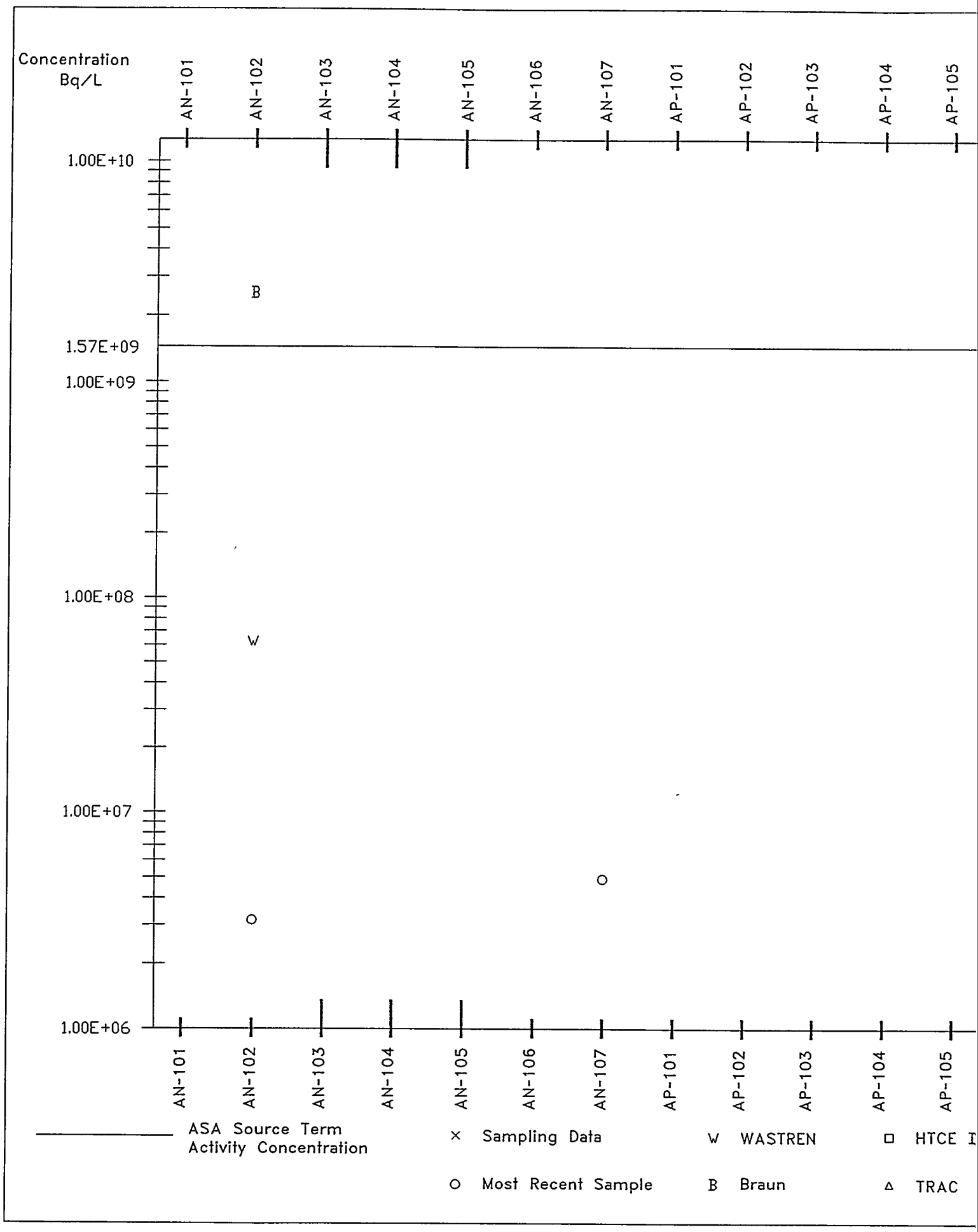
Extented tank lines represent Flamable Gas Watch List Tanks.

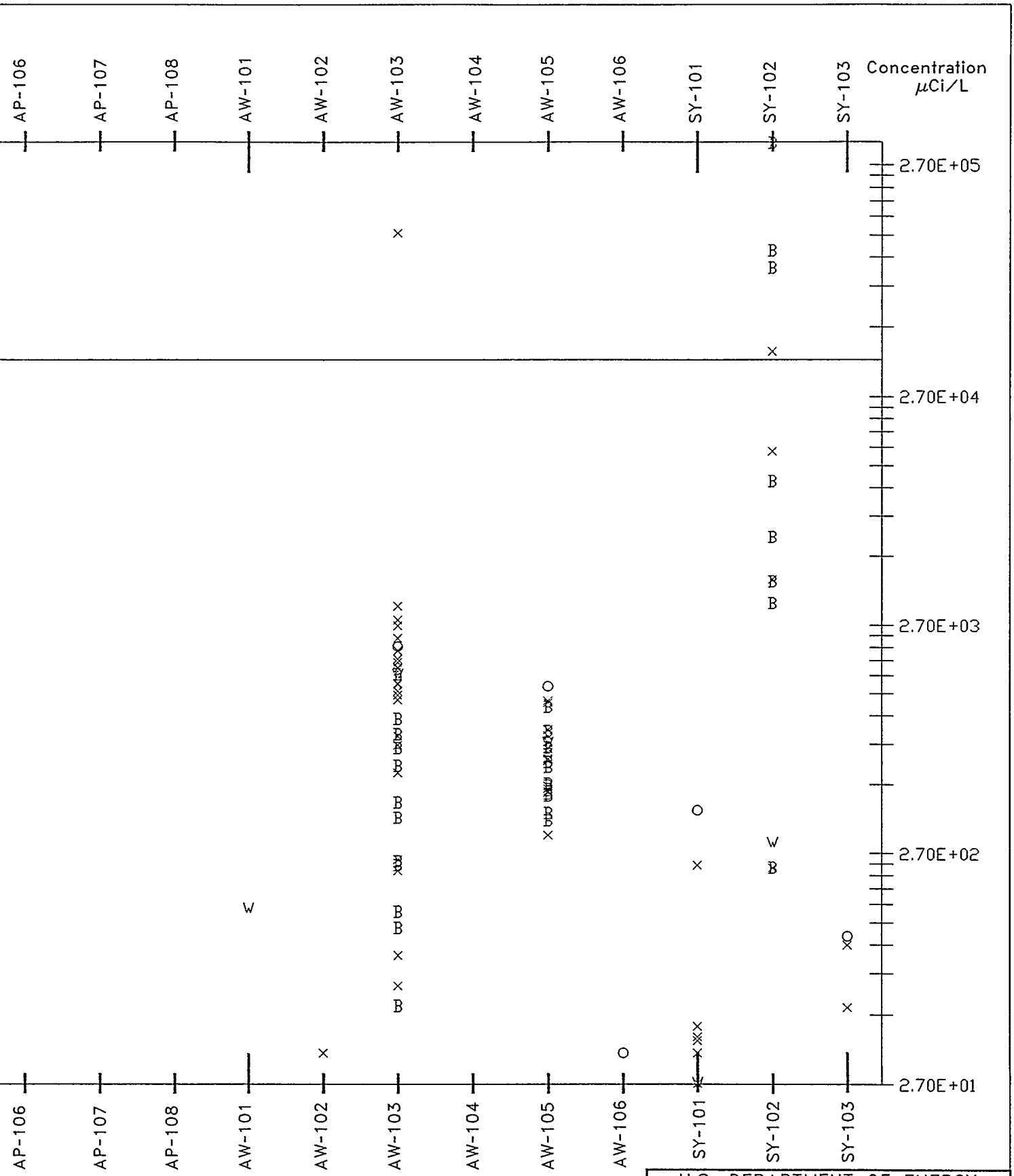
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Pu239/240 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR37 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+10
1.57E+09
1.00E+09
1.00E+08
1.00E+07
1.00E+06
B
W
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE I
TRAC



entory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

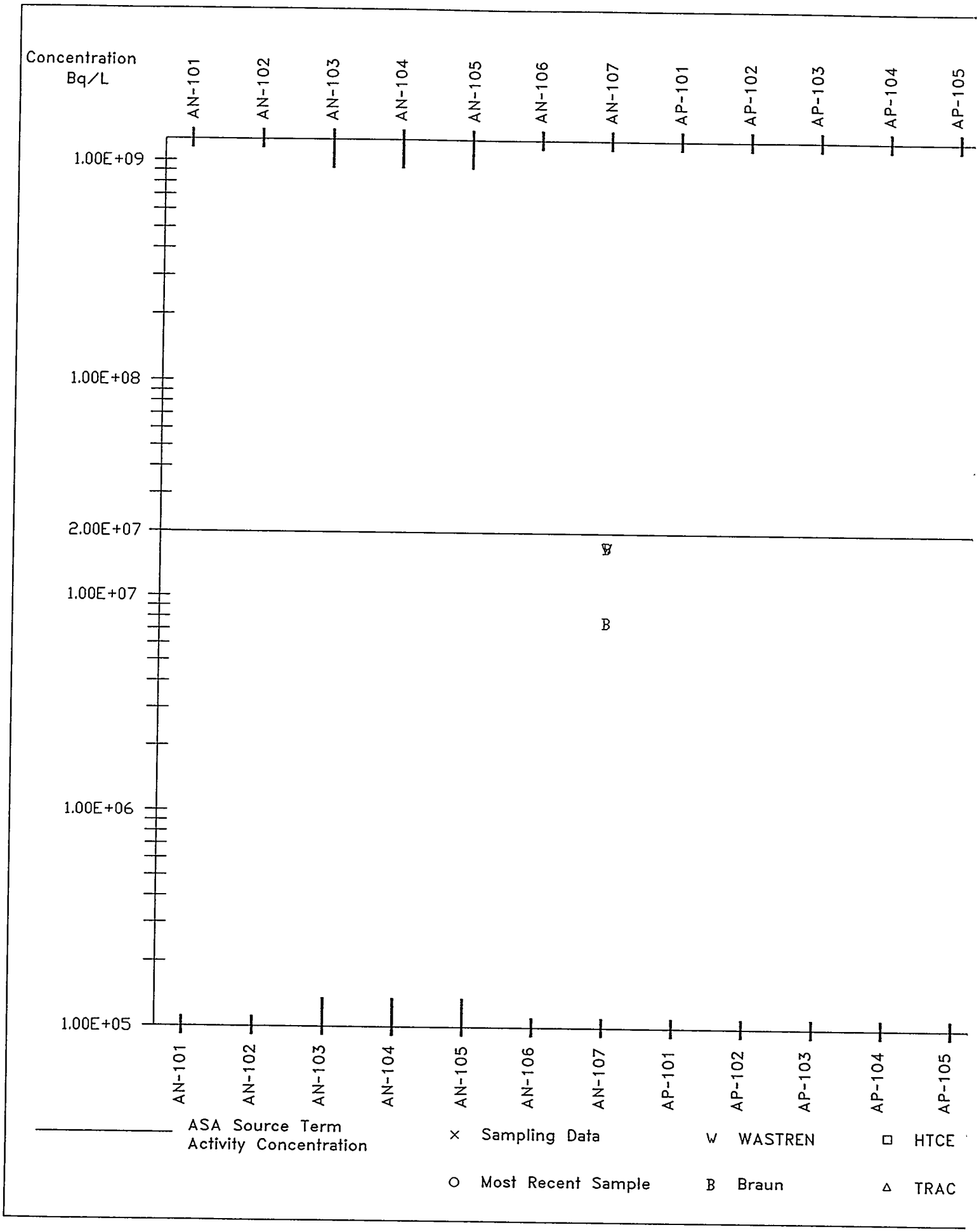
Extented tank lines represent Flamable Gas Watch List Tanks.

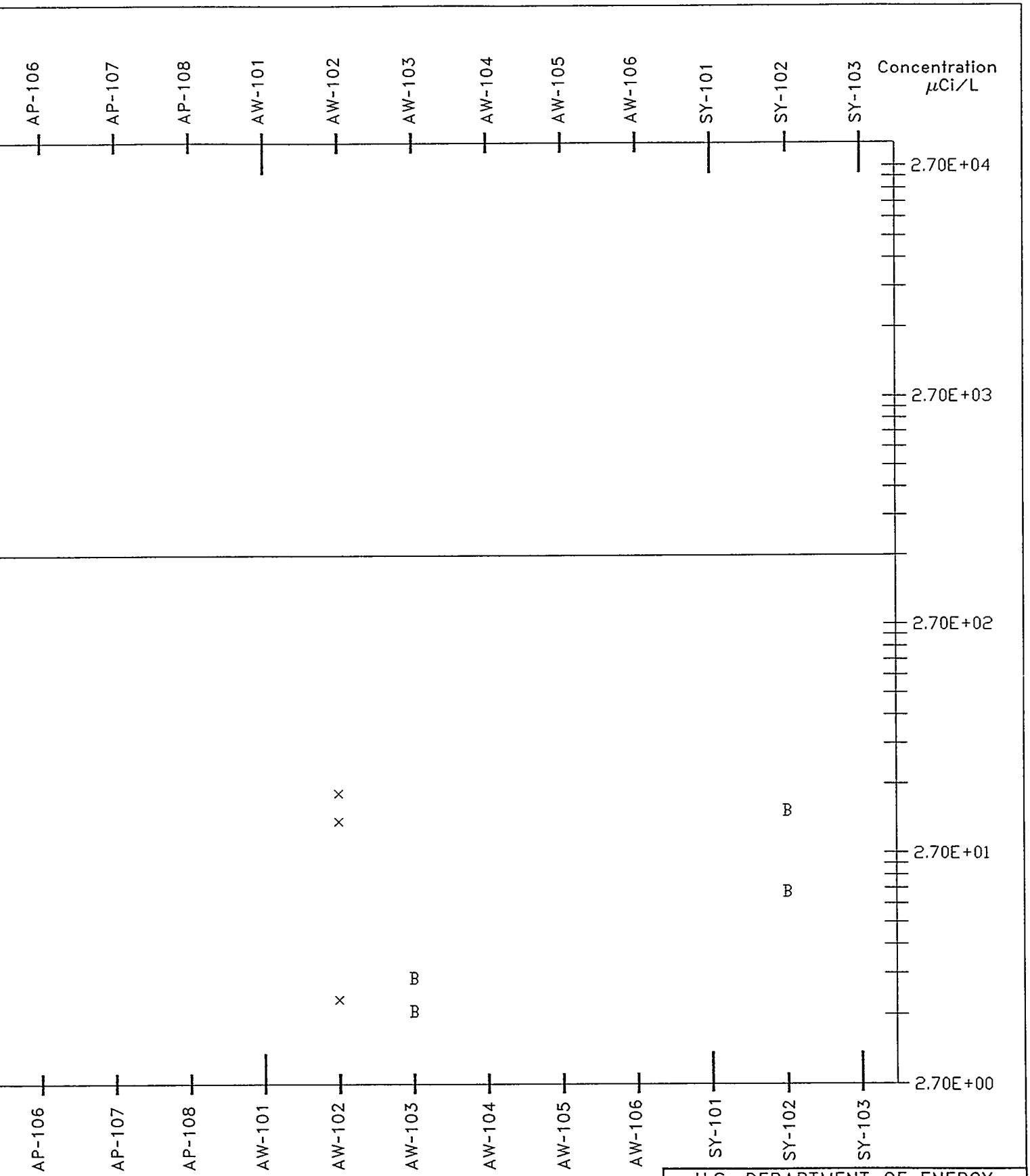
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Pu239/240 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR38 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+09
1.00E+08
2.00E+07
1.00E+07
1.00E+06
1.00E+05
W
B
ASA Source Term
Activity Concentration
× Sampling Data
O Most Recent Sample
W WASTREN
B Braun
□ HTCE
△ TRAC



nventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

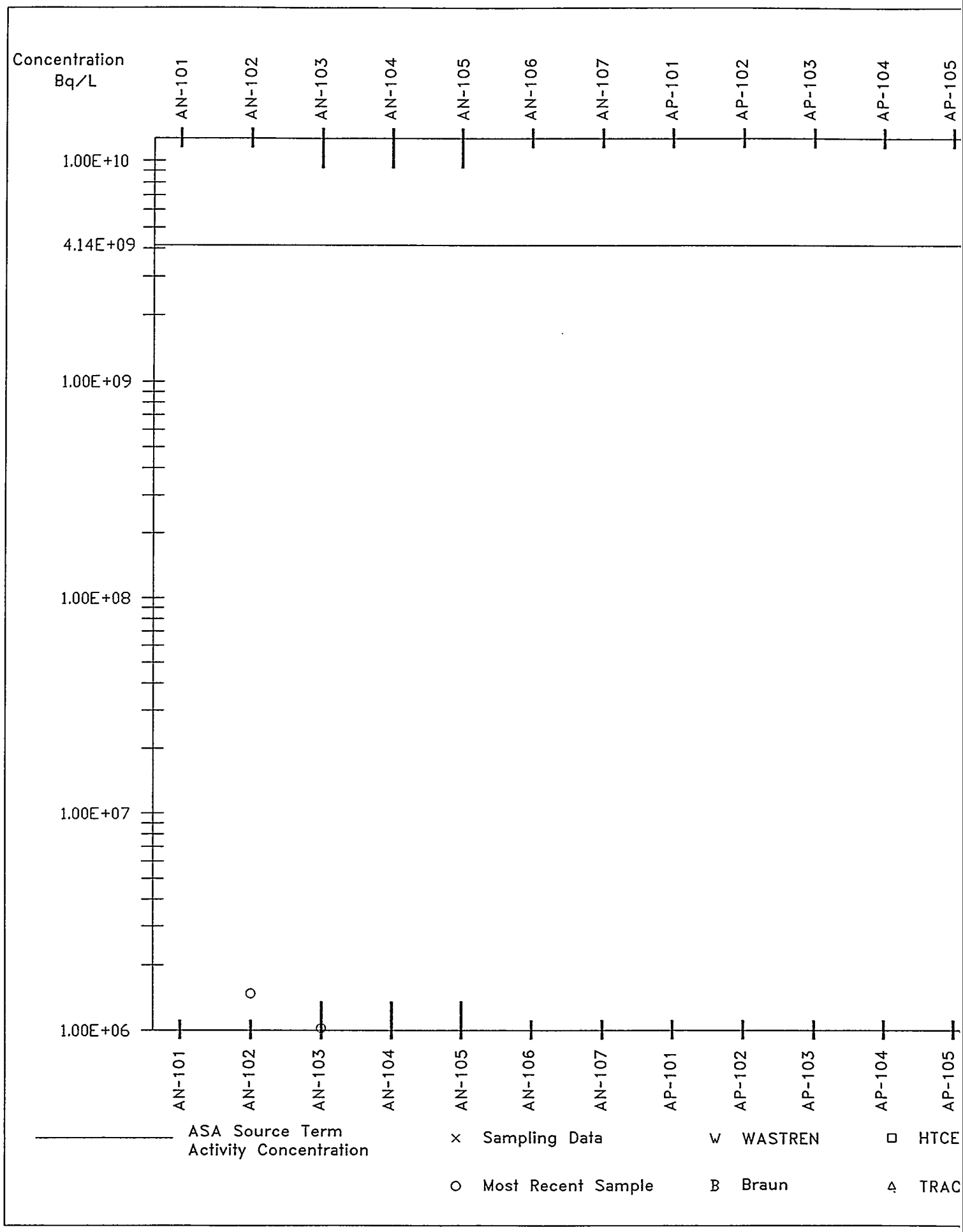
Extented tank lines represent Flamable Gas Watch List Tanks.

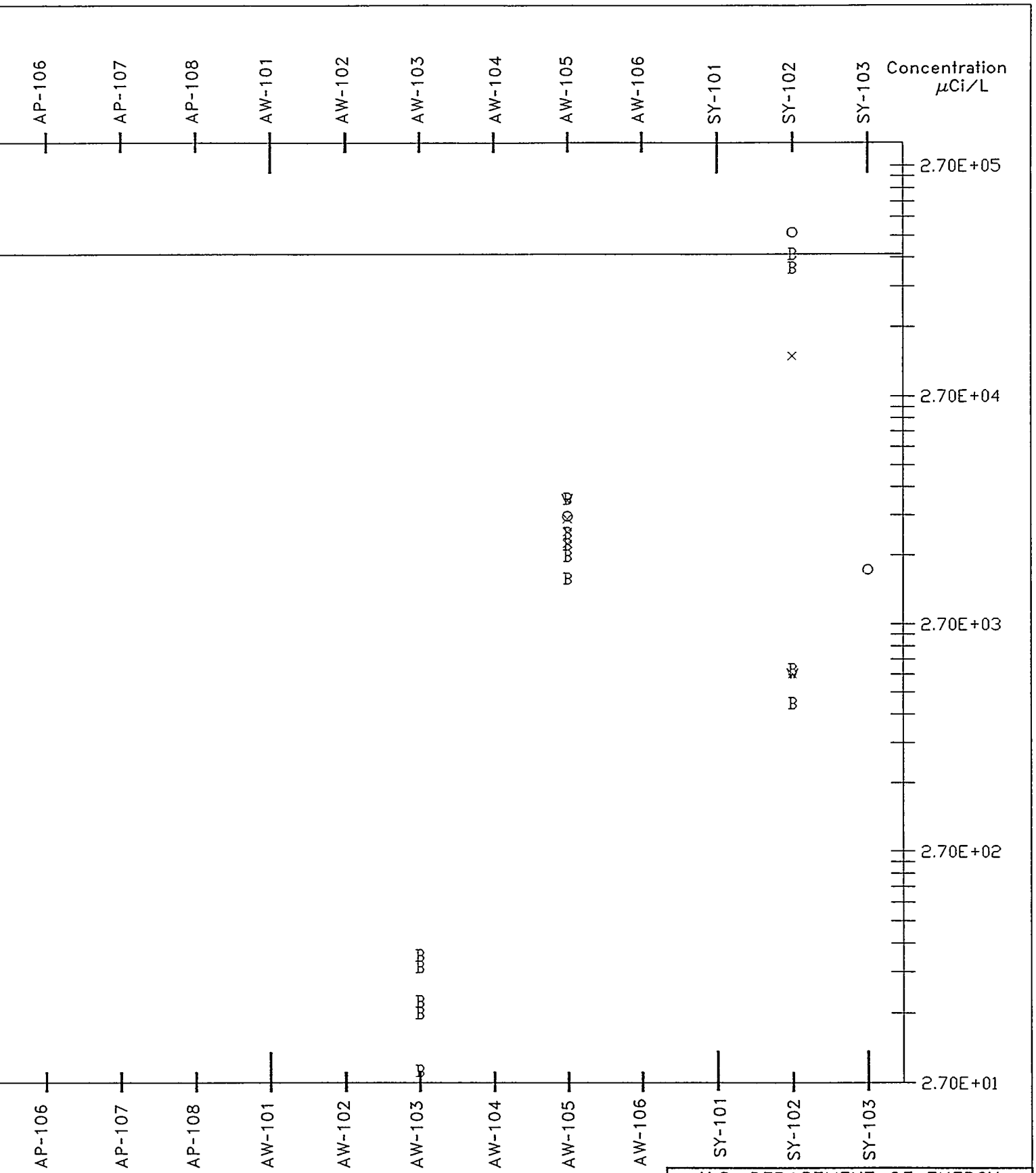
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Pu241 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No.	JOB NO.	Date
ES-VAL-CR39	E01595	4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+10
4.14E+09
1.00E+09
1.00E+08
1.00E+07
1.00E+06
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



nventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

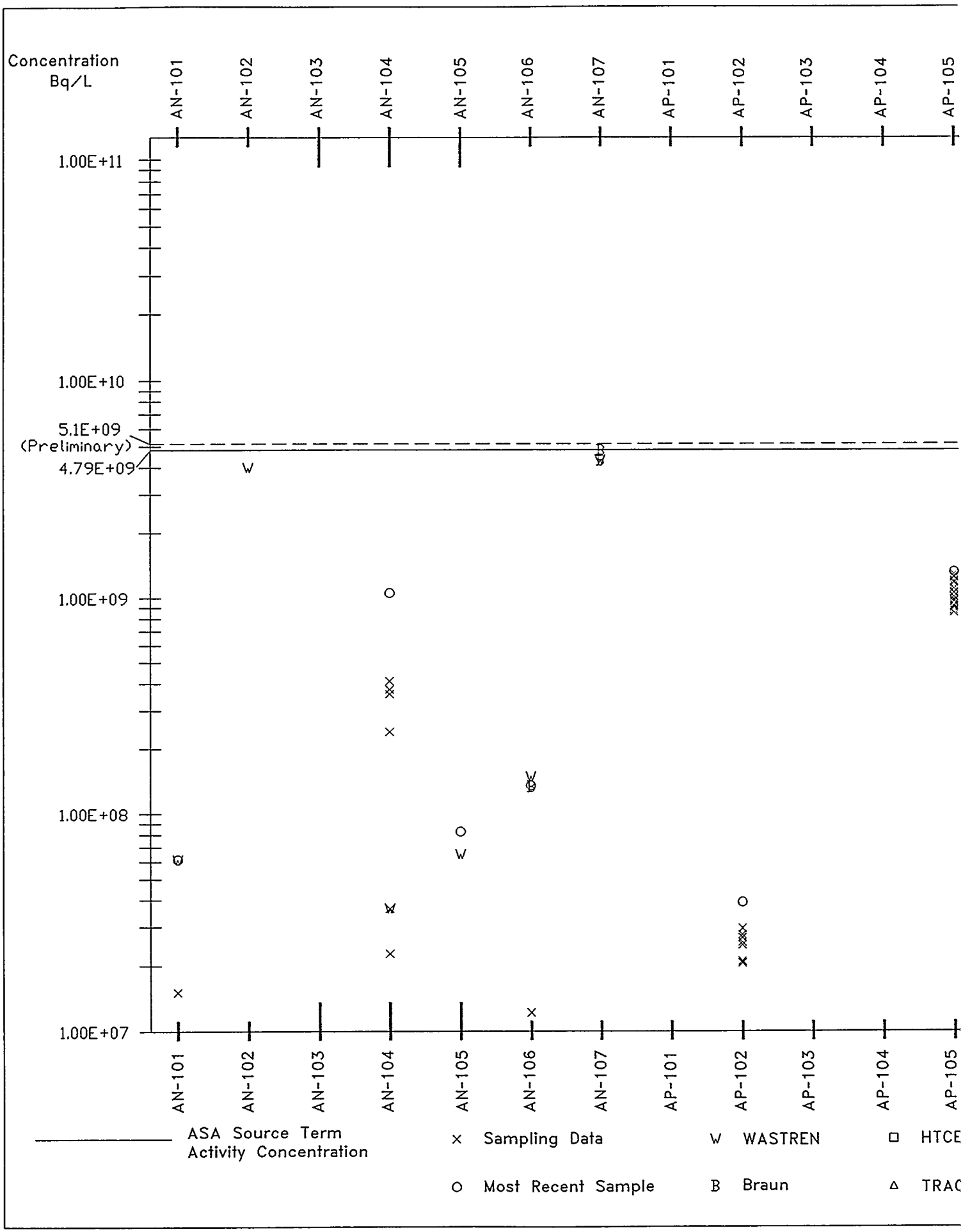
Extented tank lines represent Flamable Gas Watch List Tanks.

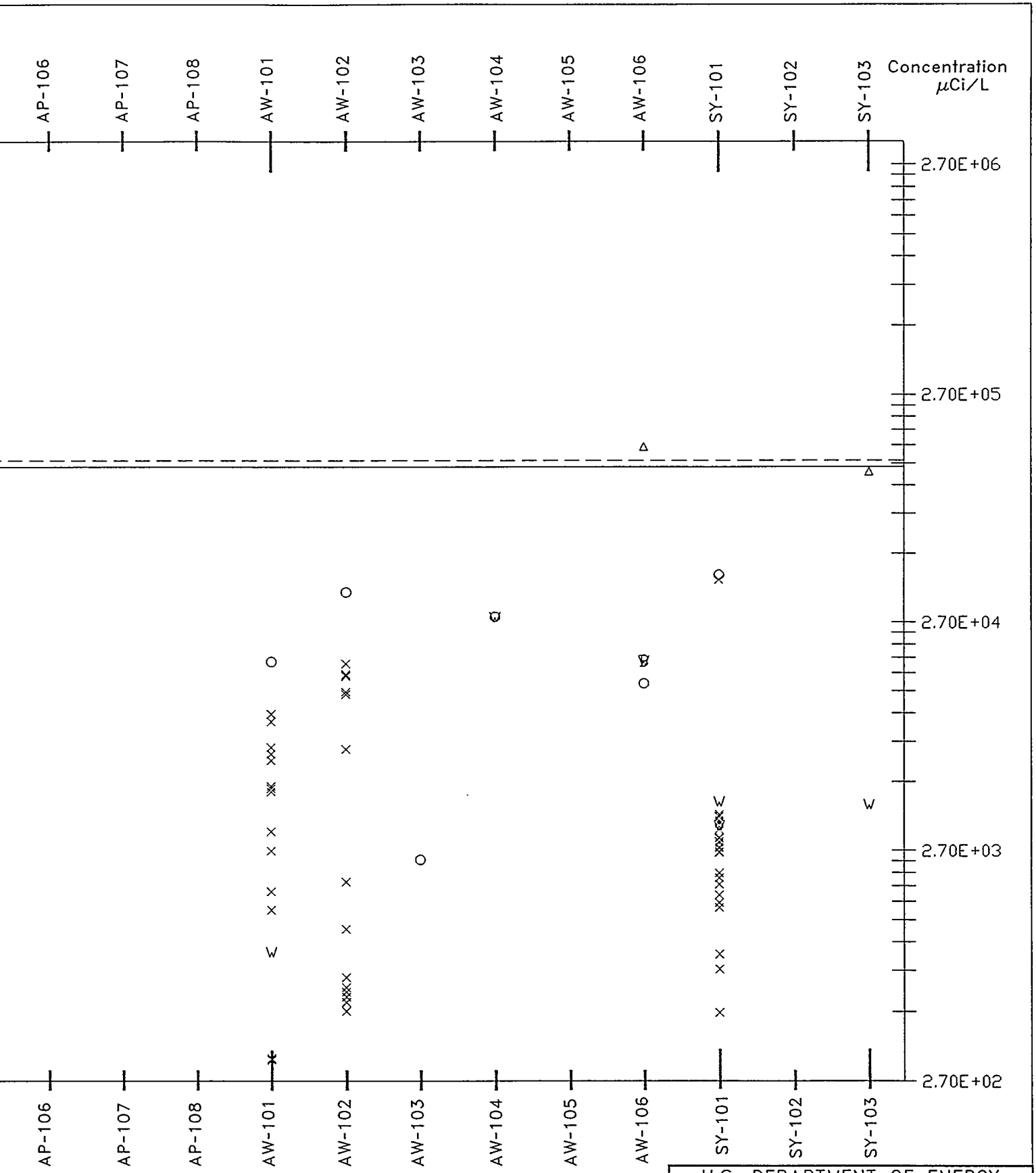
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Pu241 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR40 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+11
1.00E+10
5.1E+09
(Preliminary)
4.79E+09
1.00E+09
1.00E+08
1.00E+07
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
HTCE
Most Recent Sample
Braun
TRAC



Inventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

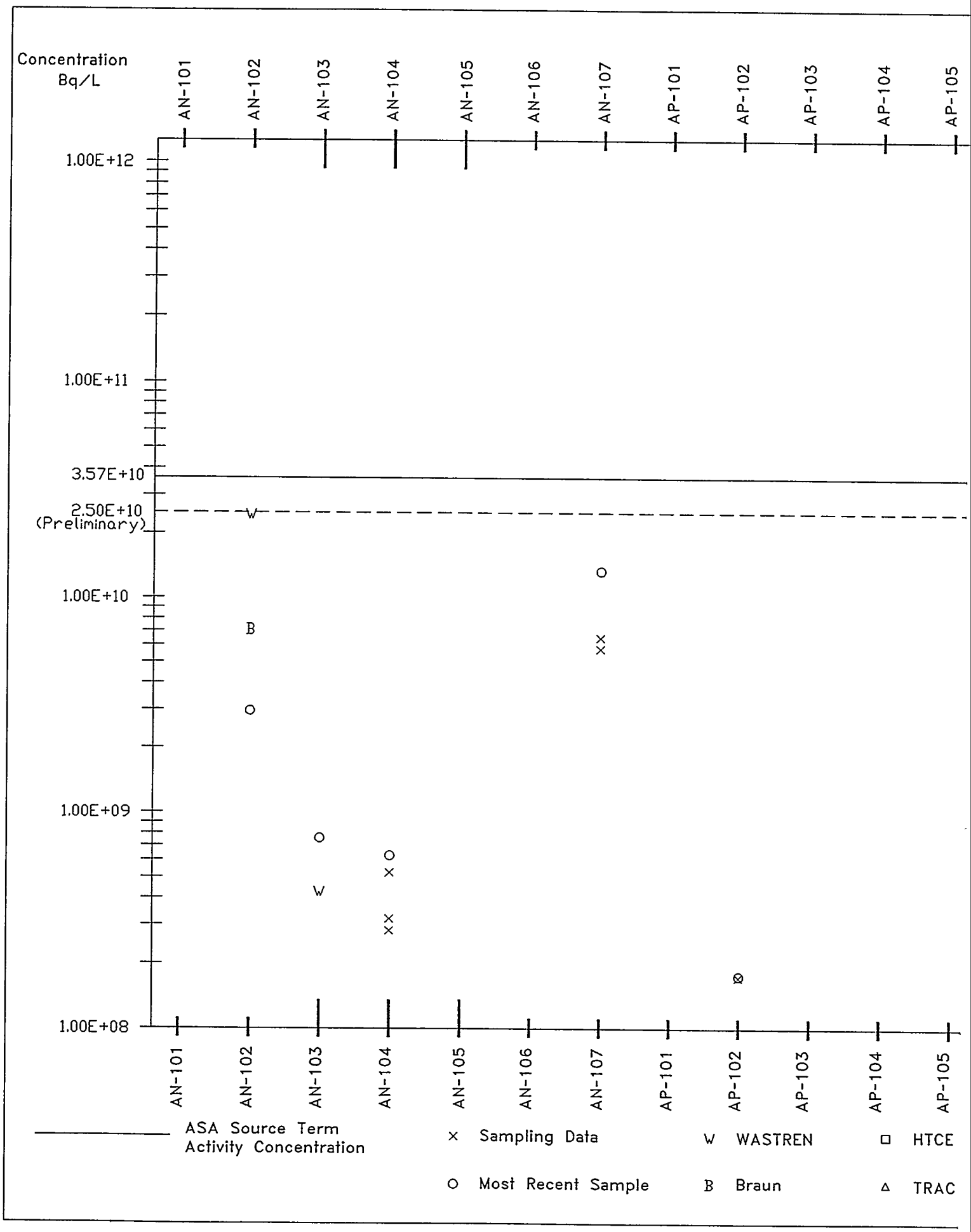
Extented tank lines represent Flamable Gas Watch List Tanks.

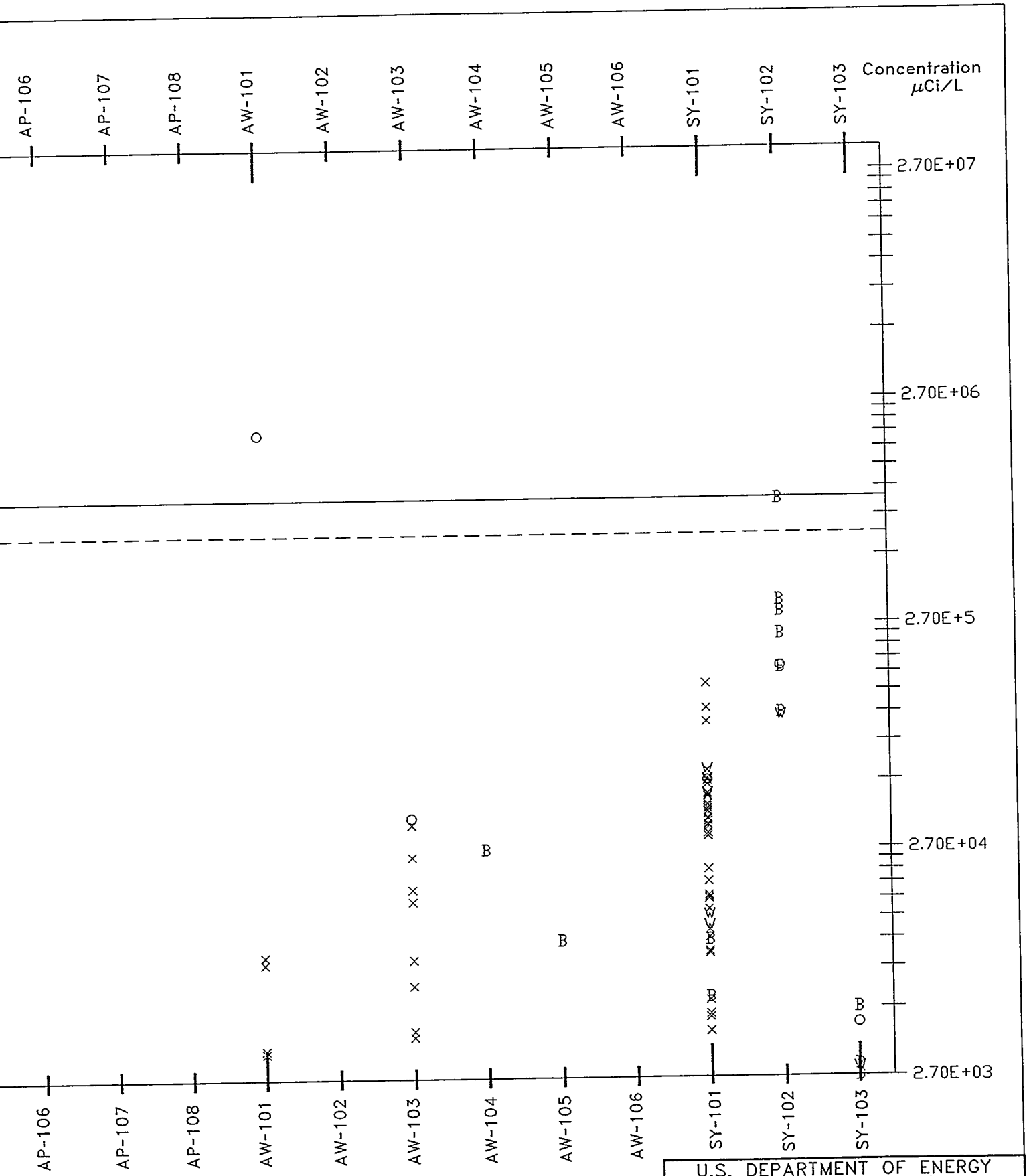
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Sr90 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR41 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+12
1.00E+11
3.57E+10
2.50E+10
(Preliminary)
1.00E+10
1.00E+09
1.00E+08
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



Inventory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

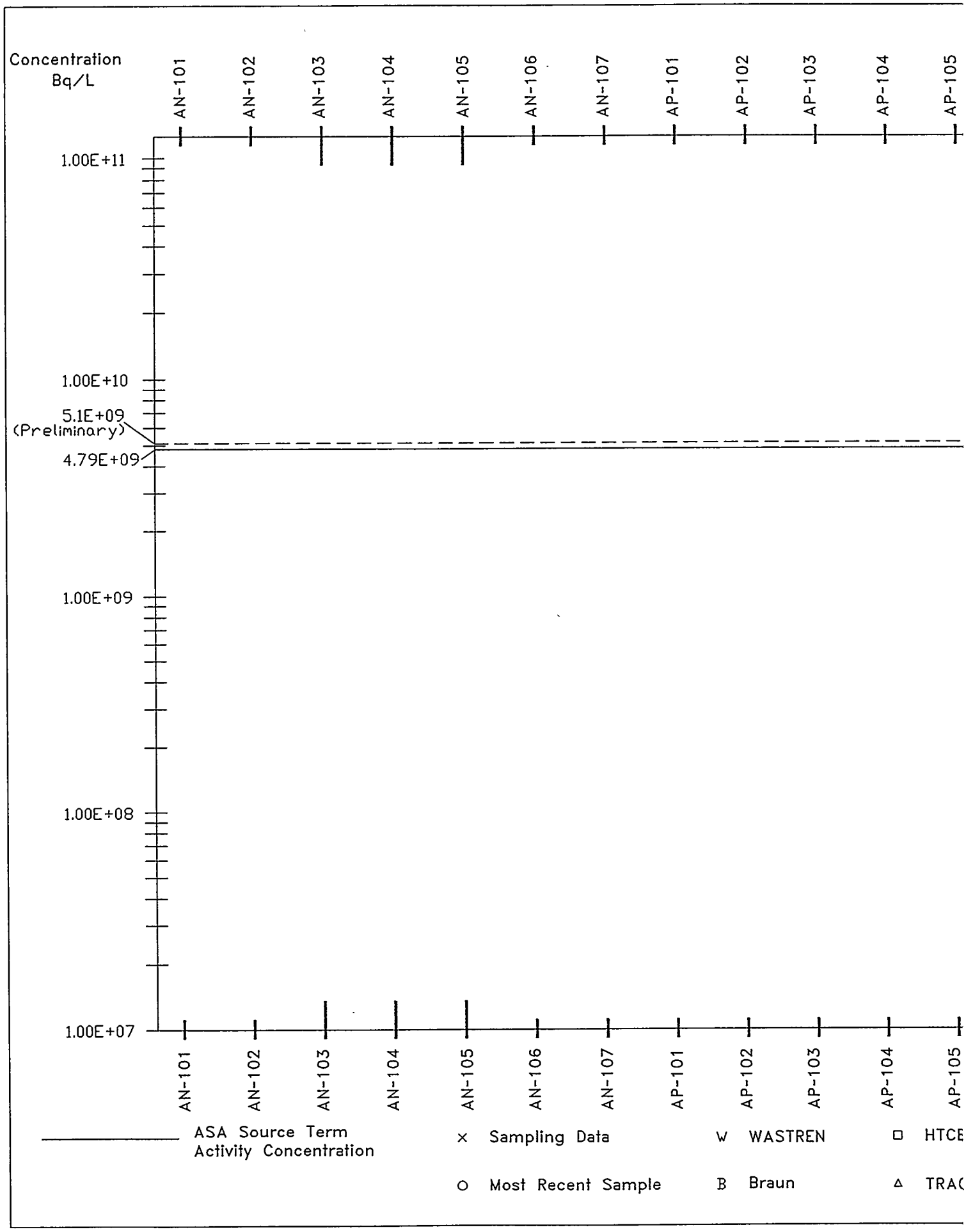
Extented tank lines represent Flamable Gas Watch List Tanks.

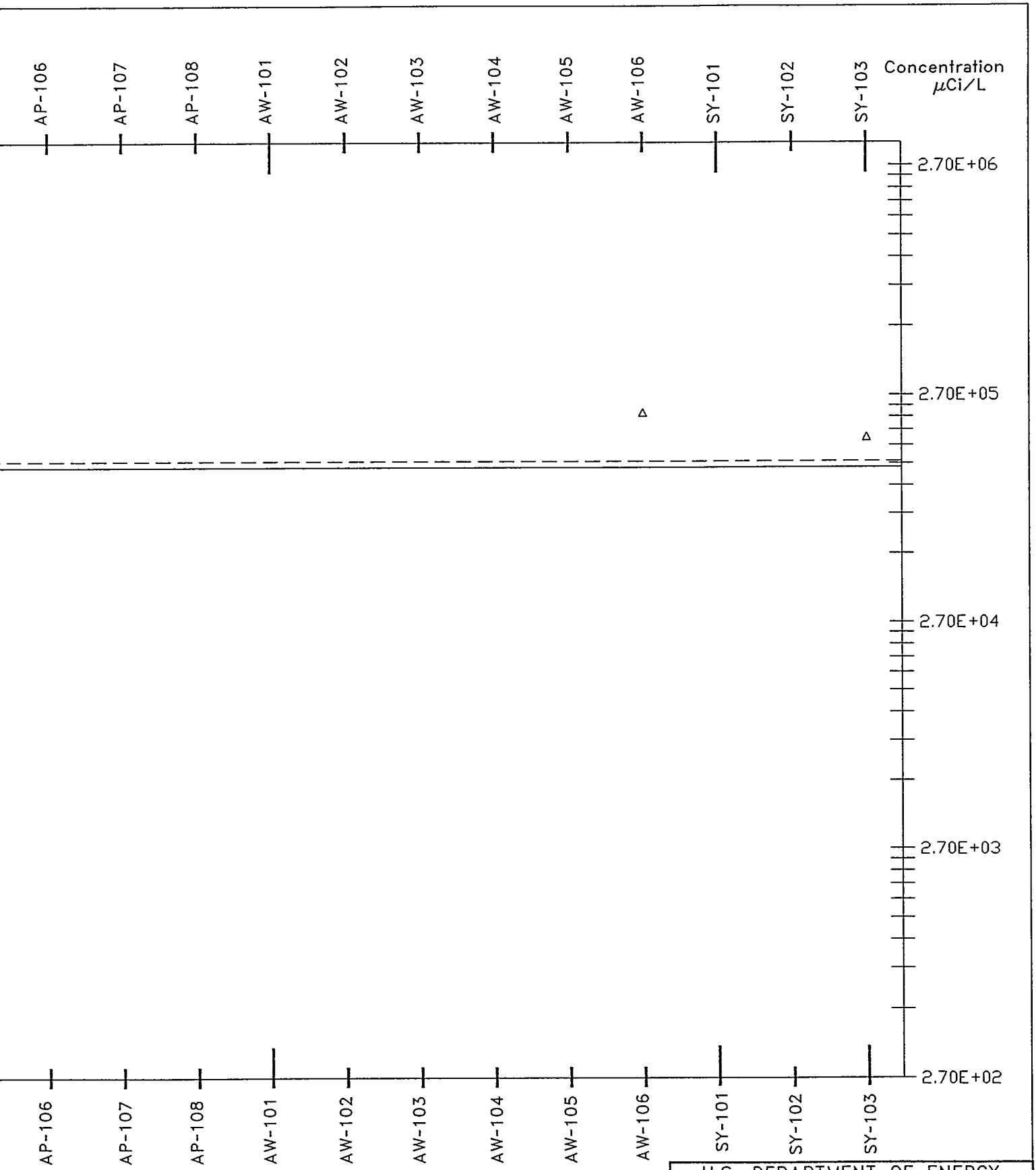
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Sr90 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR42 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+11
1.00E+10
5.1E+09
(Preliminary)
4.79E+09
1.00E+09
1.00E+08
1.00E+07
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□ HTCE
○ Most Recent Sample
B Braun
△ TRAC



Inventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

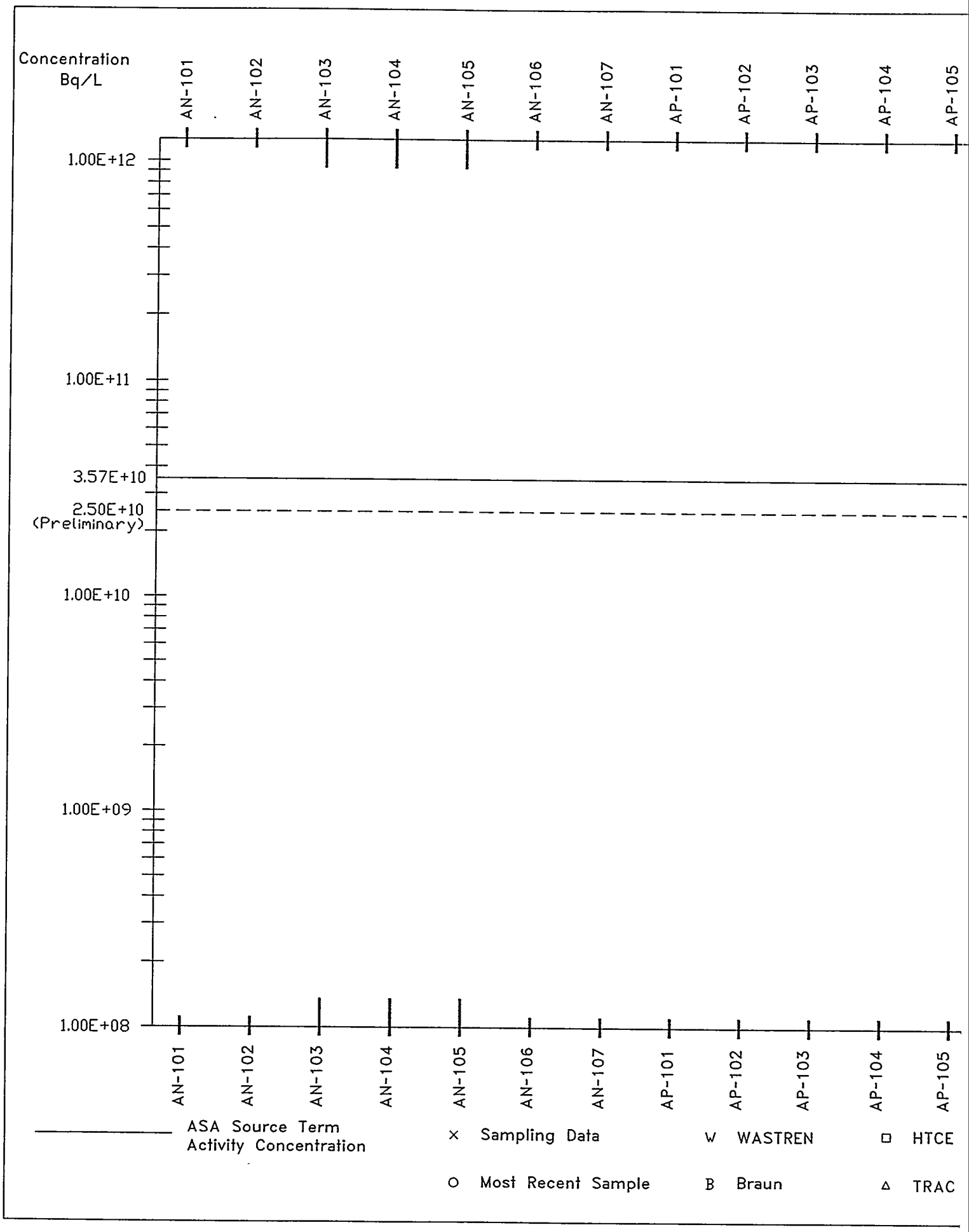
Extented tank lines represent Flamable Gas Watch List Tanks.

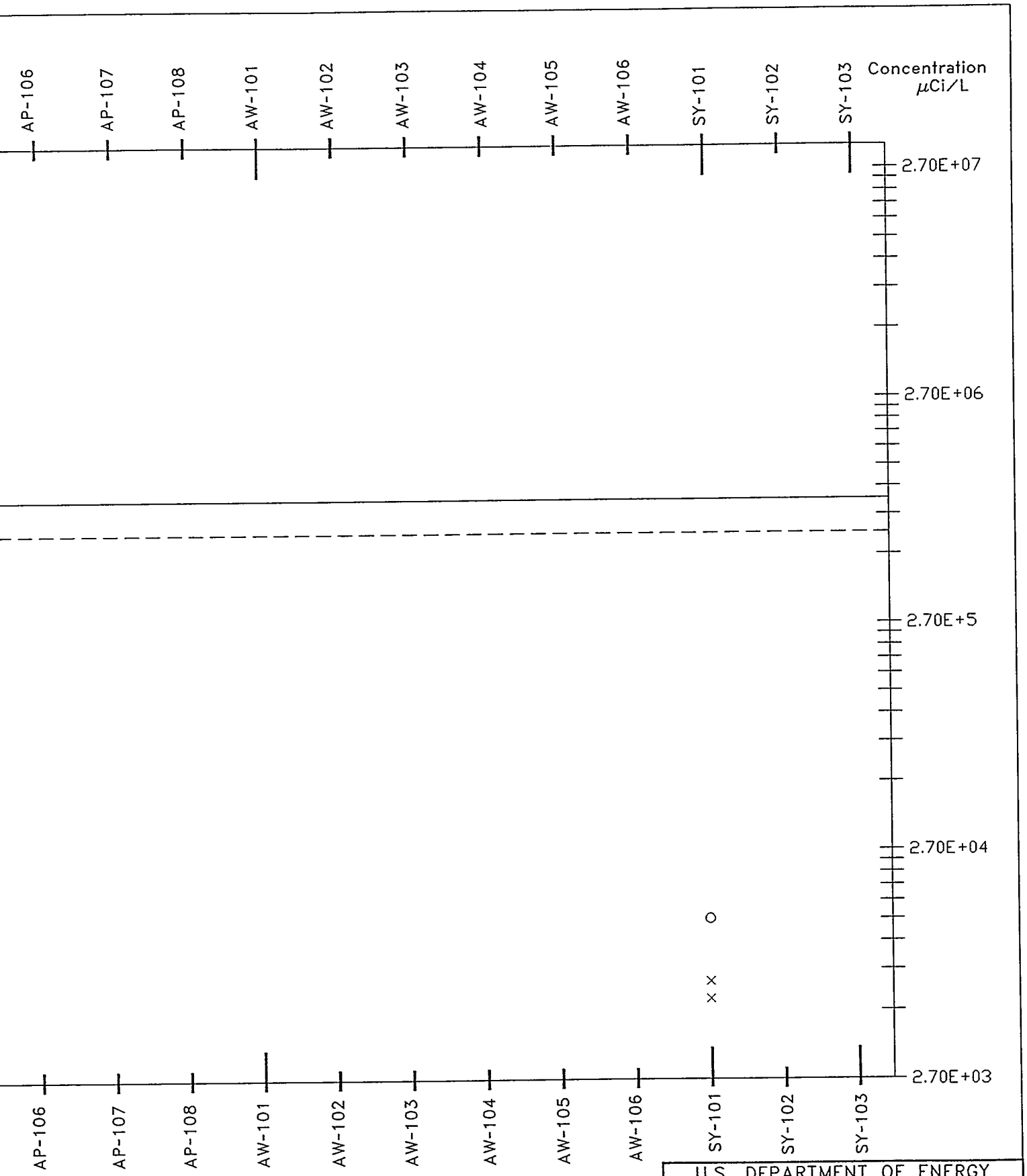
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Y90 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR43 | JOB NO E01595 | Date 4/95


Concentration
Bq/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
1.00E+12
1.00E+11
3.57E+10
2.50E+10
(Preliminary)
1.00E+10
1.00E+09
1.00E+08
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□ HTCE
○ Most Recent Sample
B Braun
△ TRAC



nventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

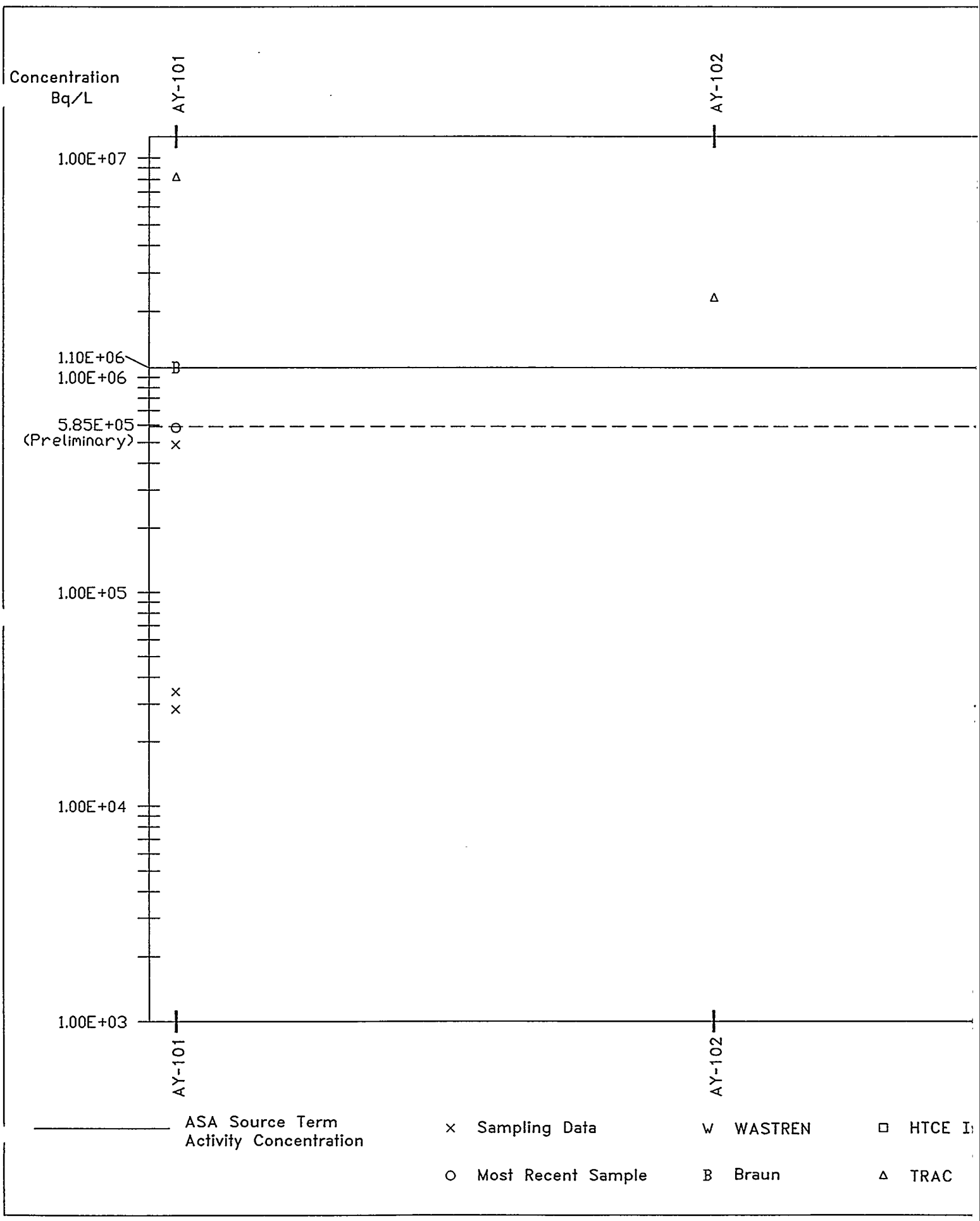
Extented tank lines represent Flamable Gas Watch List Tanks.

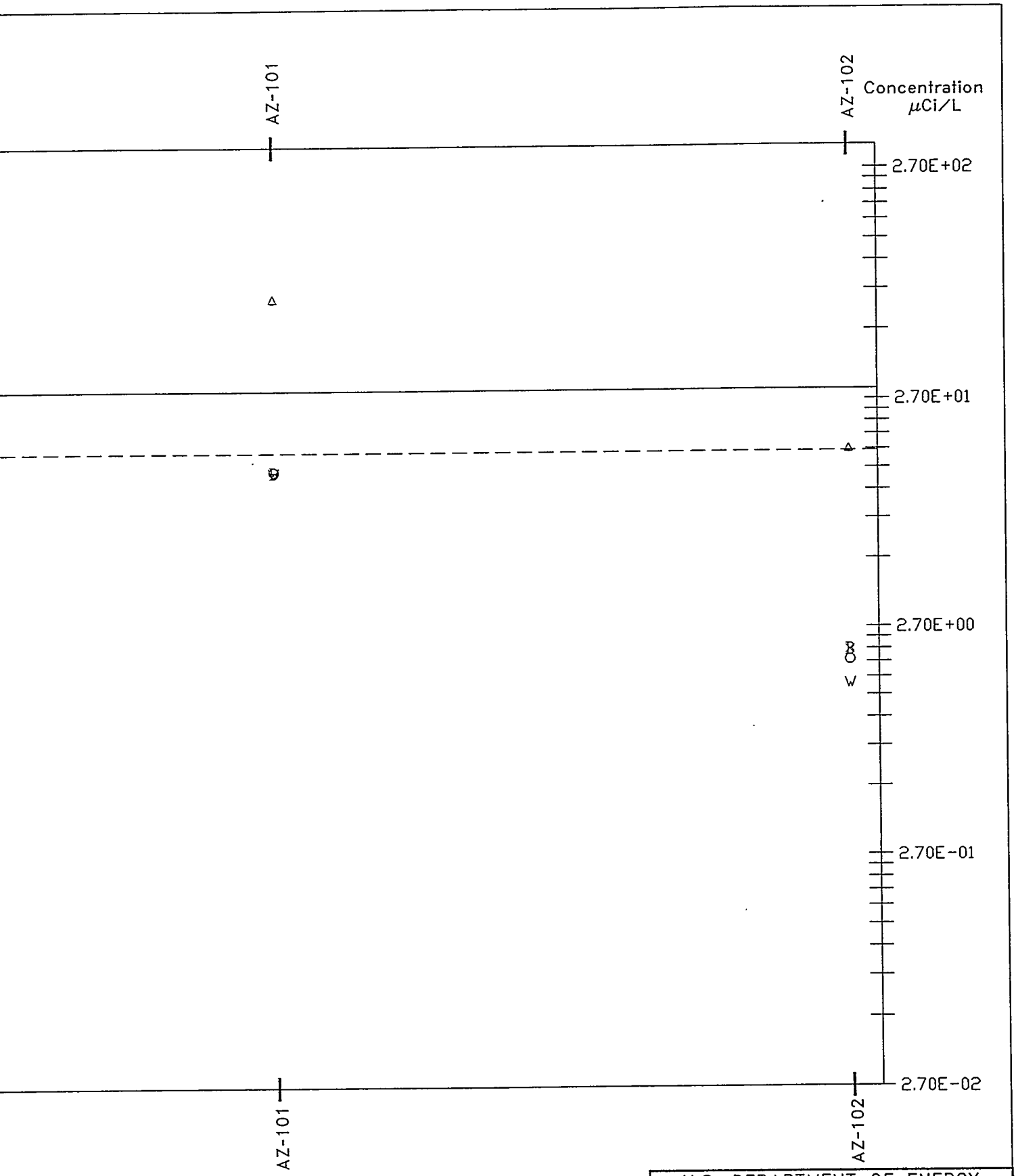
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Y90 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR44 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+07
1.10E+06
1.00E+06
5.85E+05
(Preliminary)
1.00E+05
1.00E+04
1.00E+03
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun
HTCE I
TRAC



ventory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

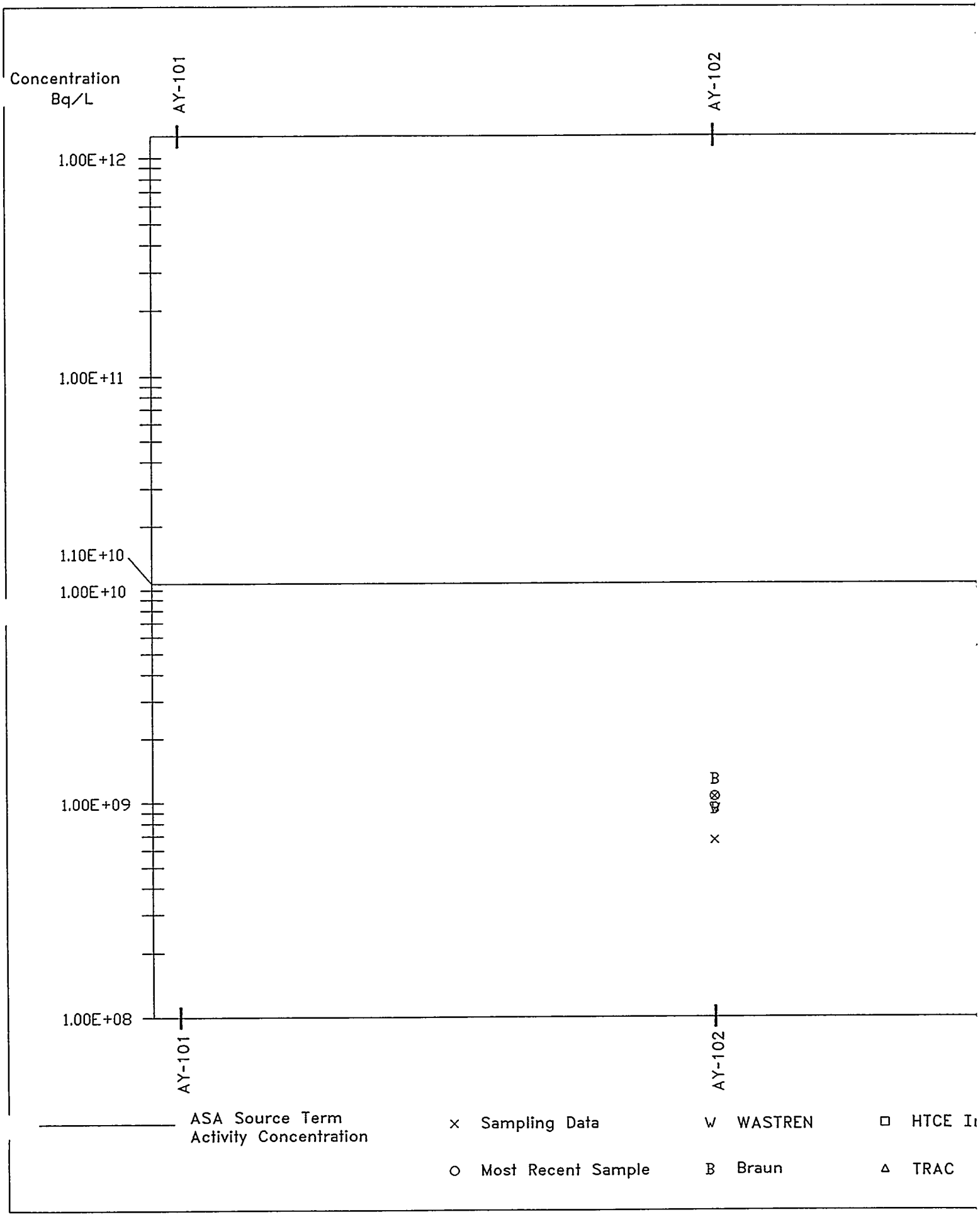
Extented tank lines represent Flamable Gas Watch List Tanks.

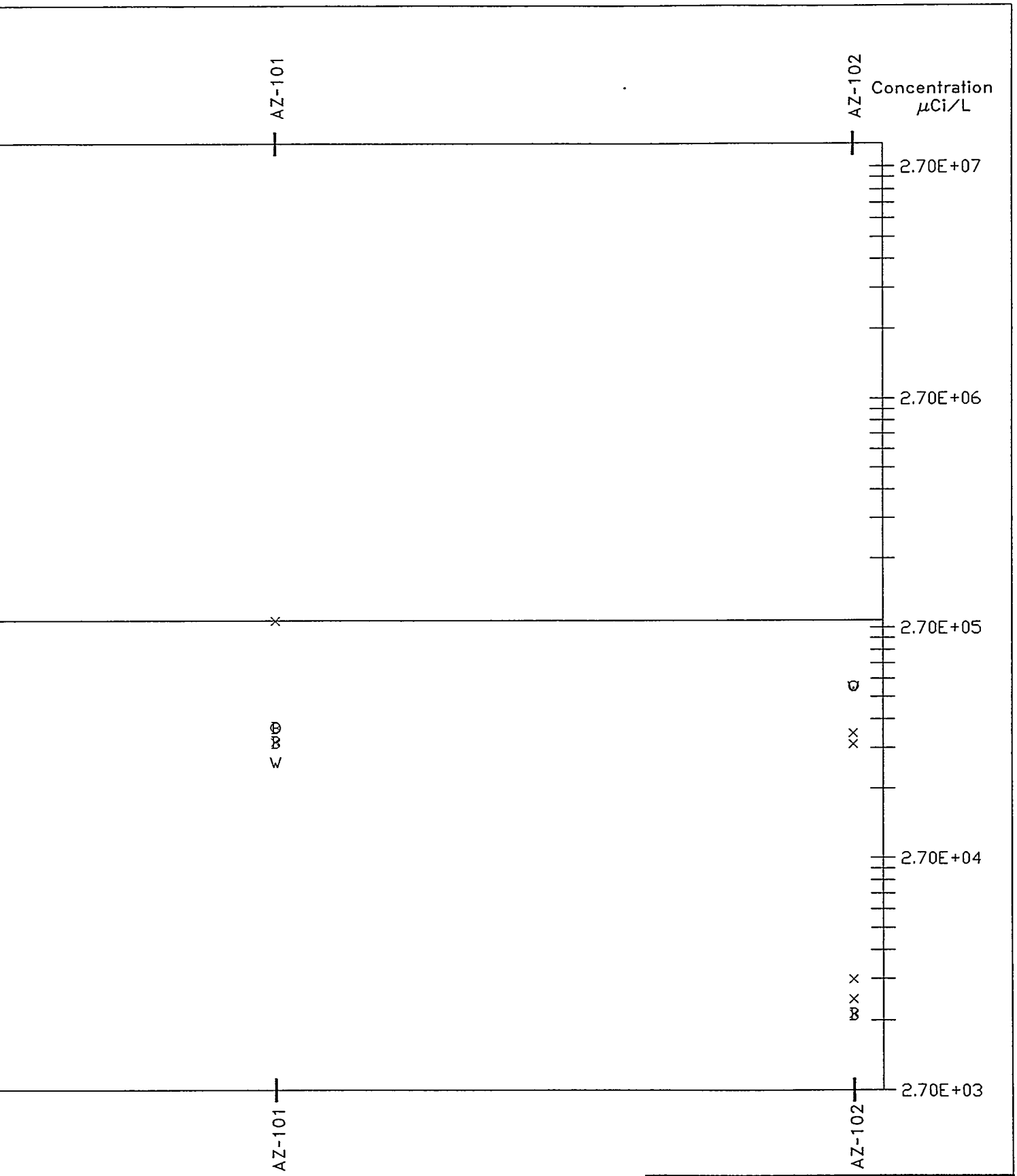
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Am241 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR45 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+12
1.00E+11
1.10E+10
1.00E+10
1.00E+09
1.00E+08
B
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun
HTCE I
TRAC



entory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

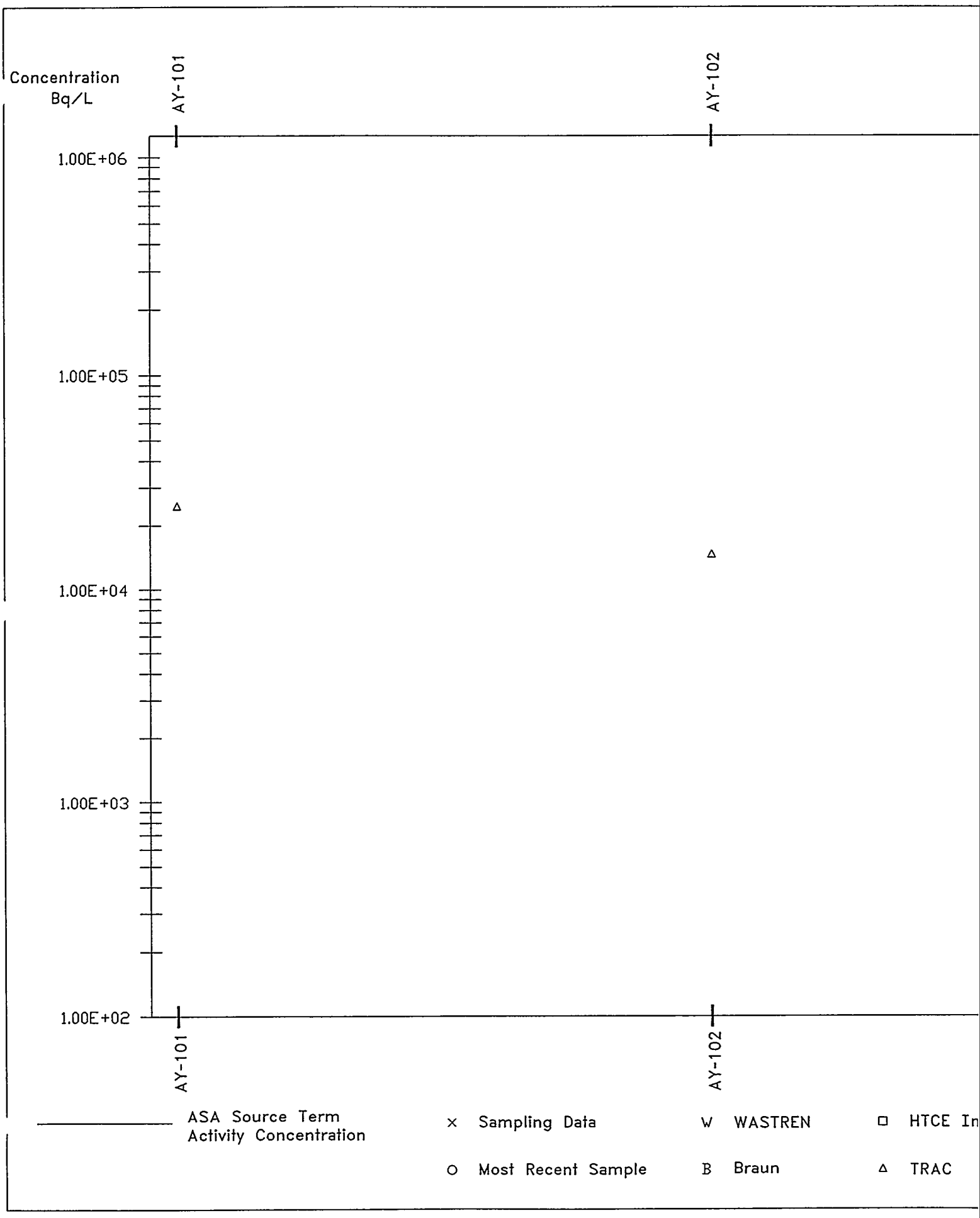
Extented tank lines represent Flamable Gas Watch List Tanks.

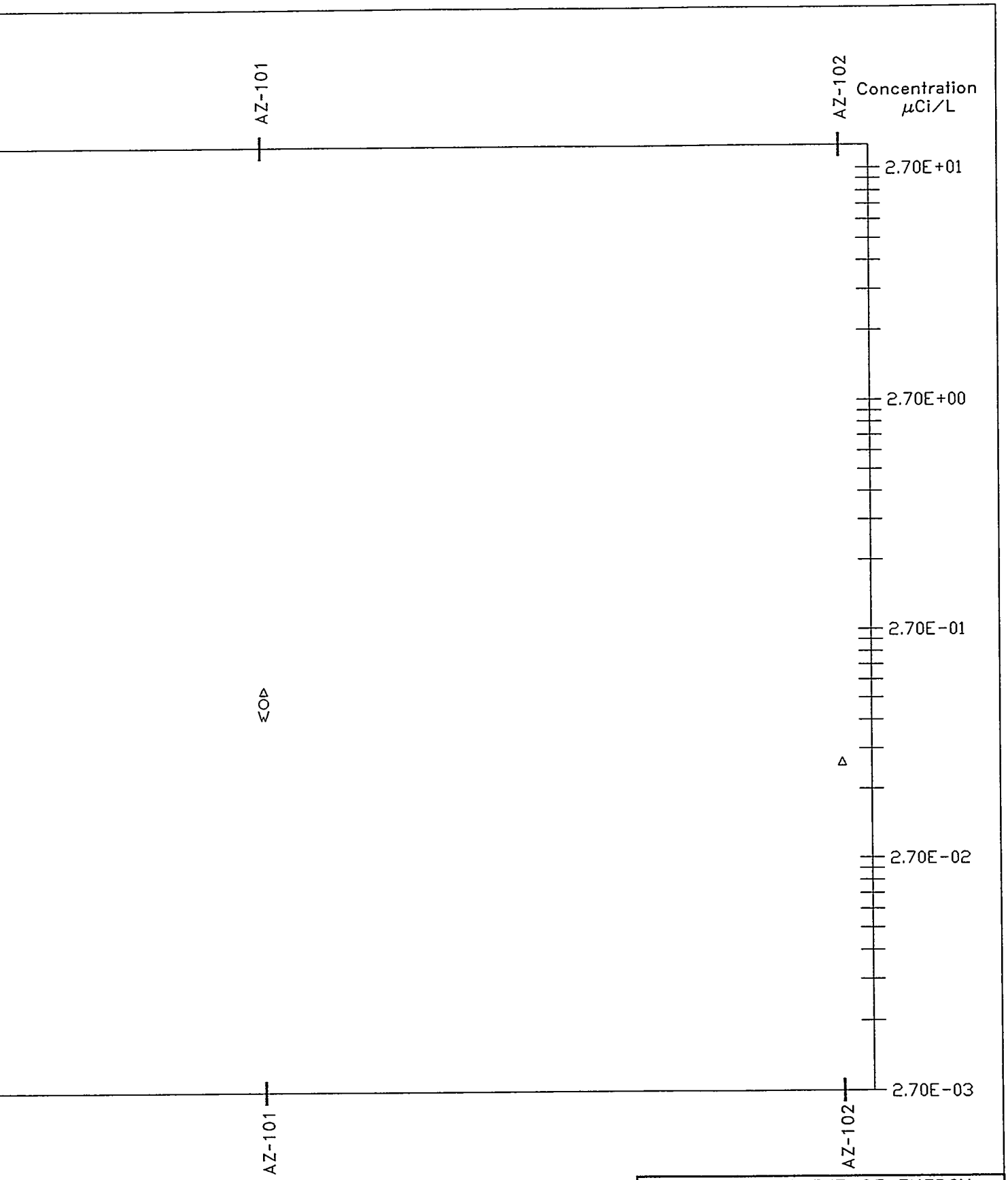
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Am241 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR46 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+06
1.00E+05
1.00E+04
1.00E+03
1.00E+02
AY-101
AY-102
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE In
TRAC



ntory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

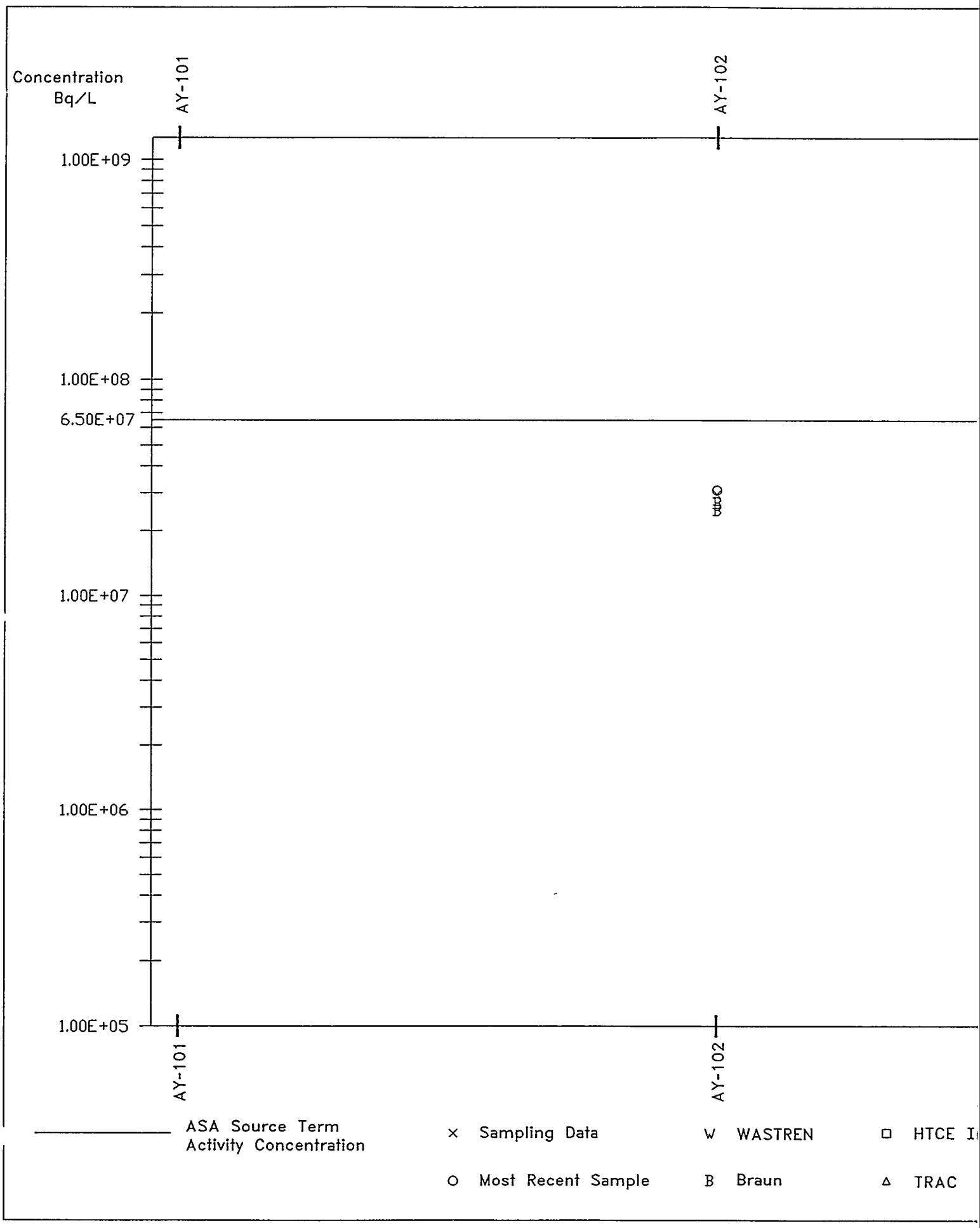
Extented tank lines represent Flamable Gas Watch List Tanks.

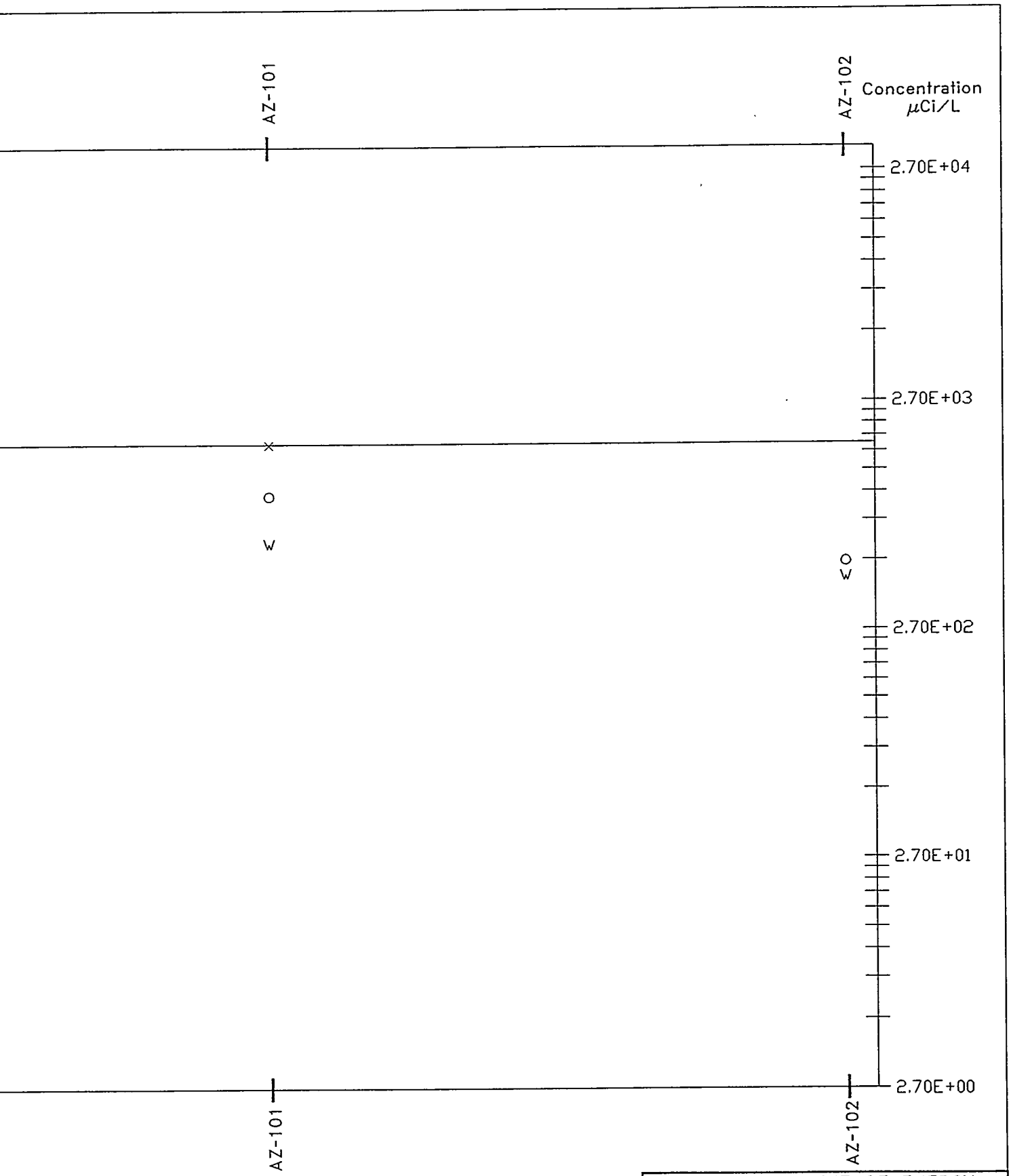
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Cm244 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No.	JOB NO.	Date
ES-VAL-CR47	E01595	4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+09
1.00E+08
6.50E+07
1.00E+07
1.00E+06
1.00E+05
AY-101
AY-102
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun
HTCE I
TRAC



entory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

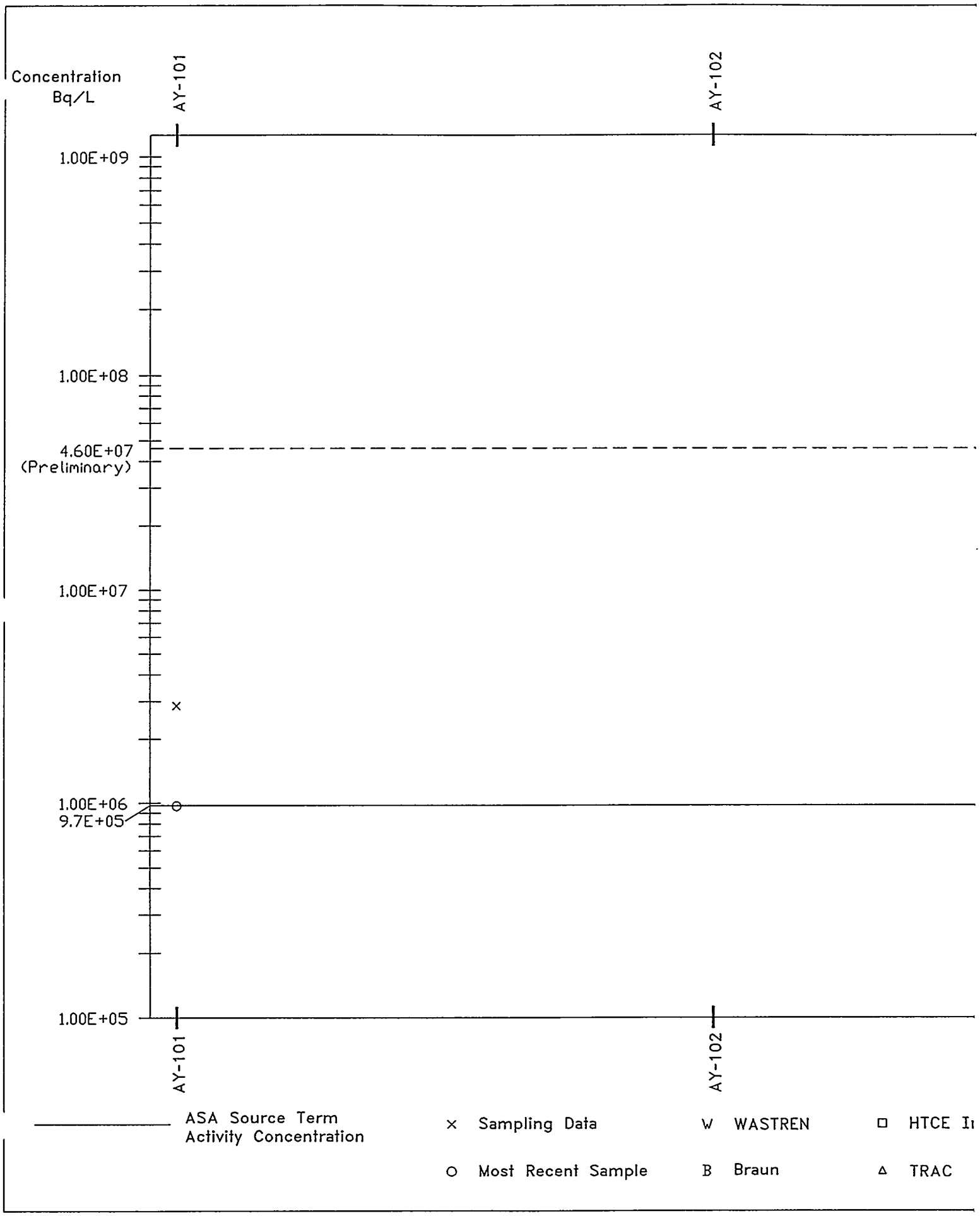
Extented tank lines represent Flamable Gas Watch List Tanks.

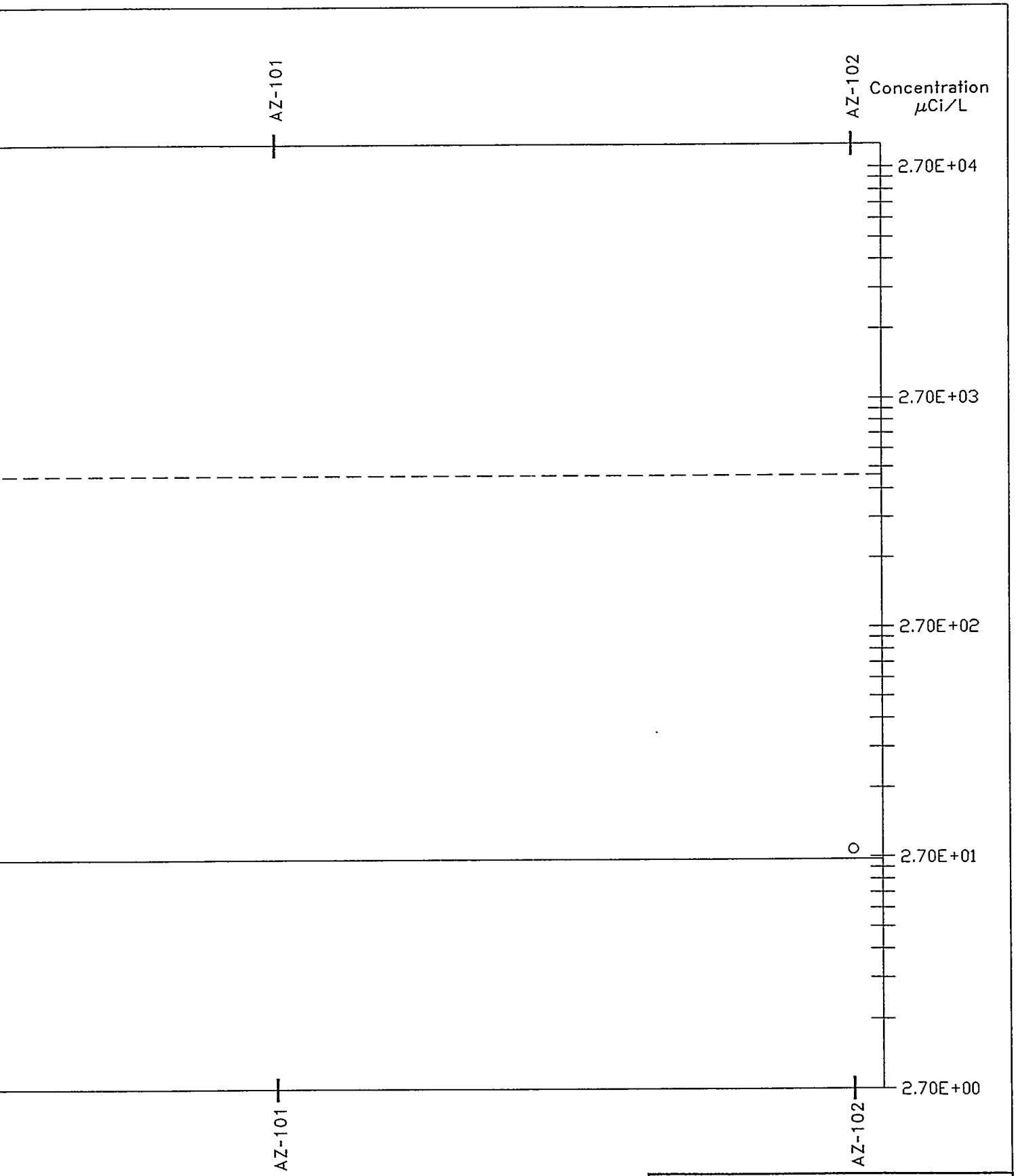
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Cm244 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No.	JOB NO.	Date
ES-VAL-CR48	E01595	4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+09
1.00E+08
4.60E+07
(Preliminary)
1.00E+07
1.00E+06
9.7E+05
1.00E+05
AY-101
AY-102
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE I
TRAC



entory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

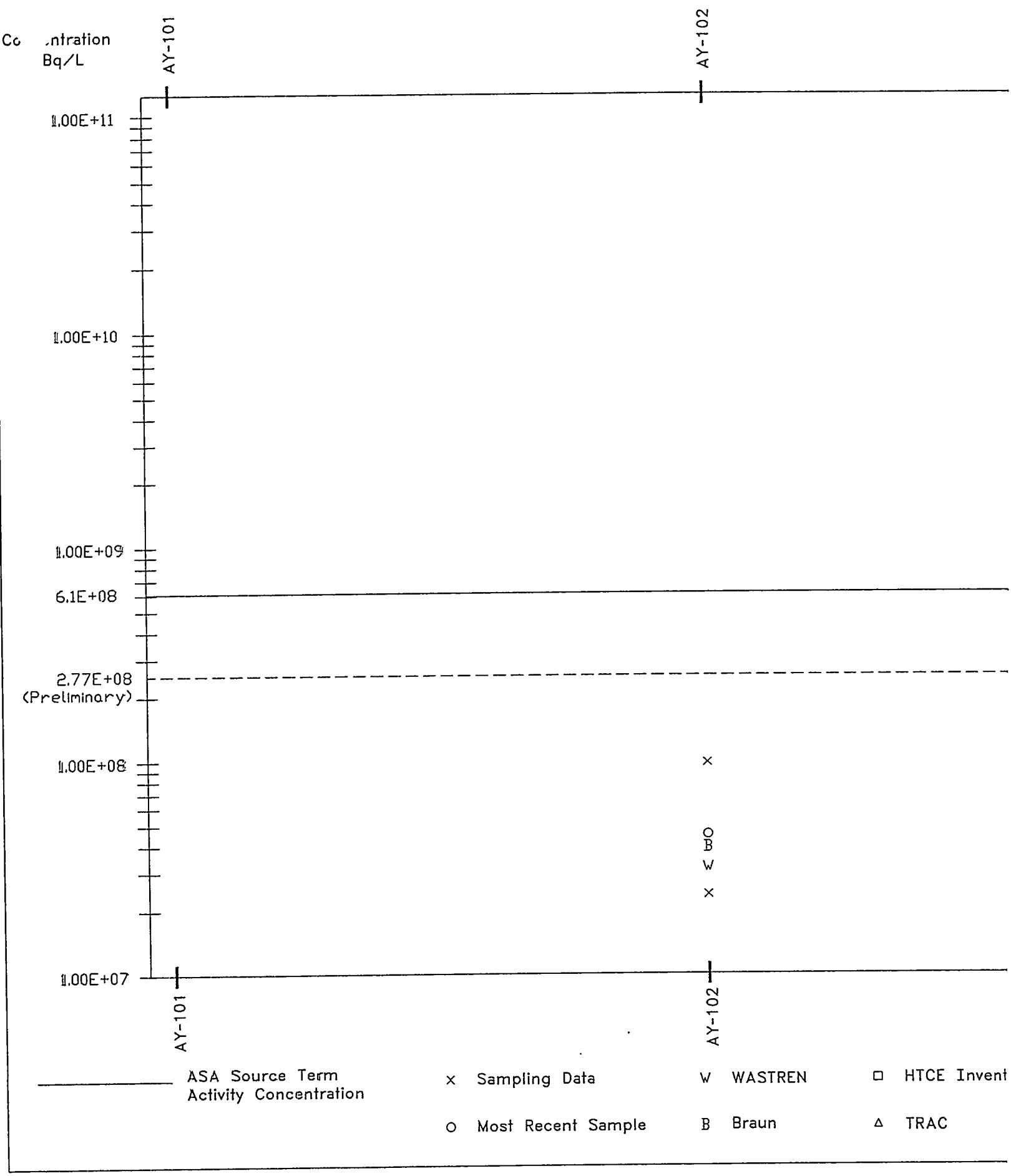
Extented tank lines represent Flamable Gas Watch List Tanks.

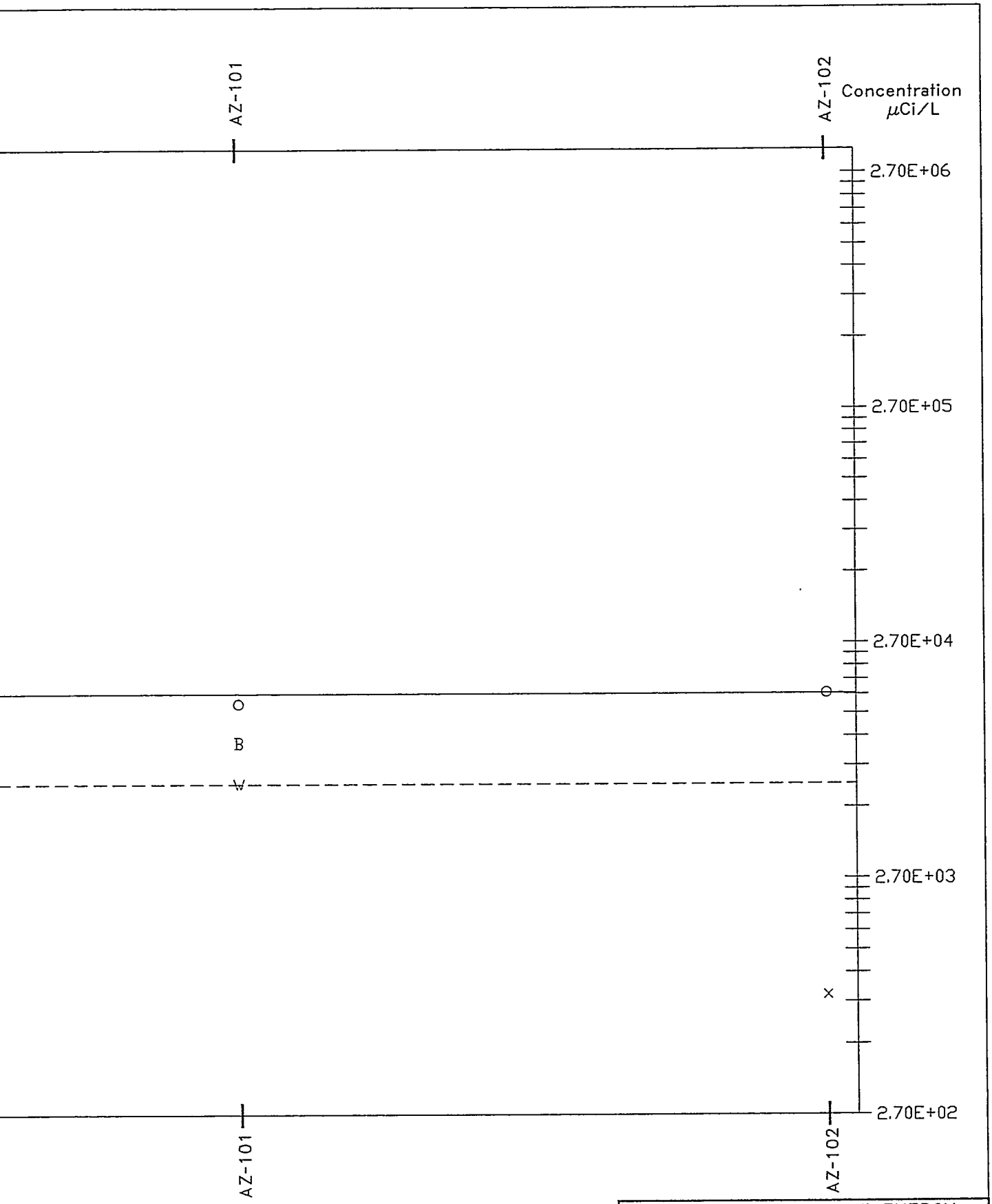
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Co60 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR49 | JOB NO. E01595 | Date 4/95


Co ntration
Bq/L
AY-101
AY-102
1.00E+11
1.00E+10
1.00E+09
6.1E+08
2.77E+08
(Preliminary)
1.00E+08
1.00E+07
AY-101
AY-102
ASA Source Term
Activity Concentration
× Sampling Data
O Most Recent Sample
W WASTREN
B Braun
□ HTCE Invent
Δ TRAC



ry Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

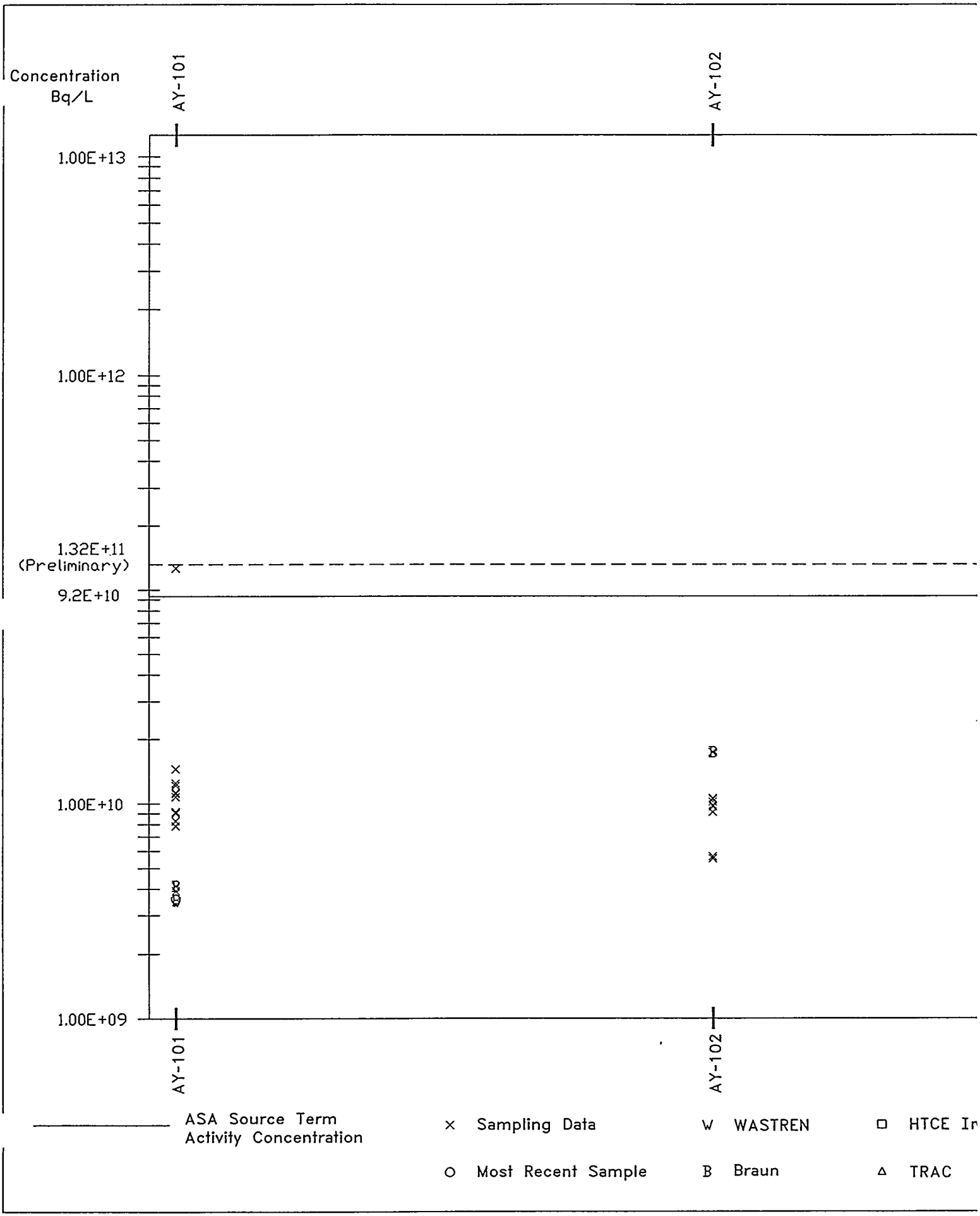
Extented tank lines represent Flamable Gas Watch List Tanks.

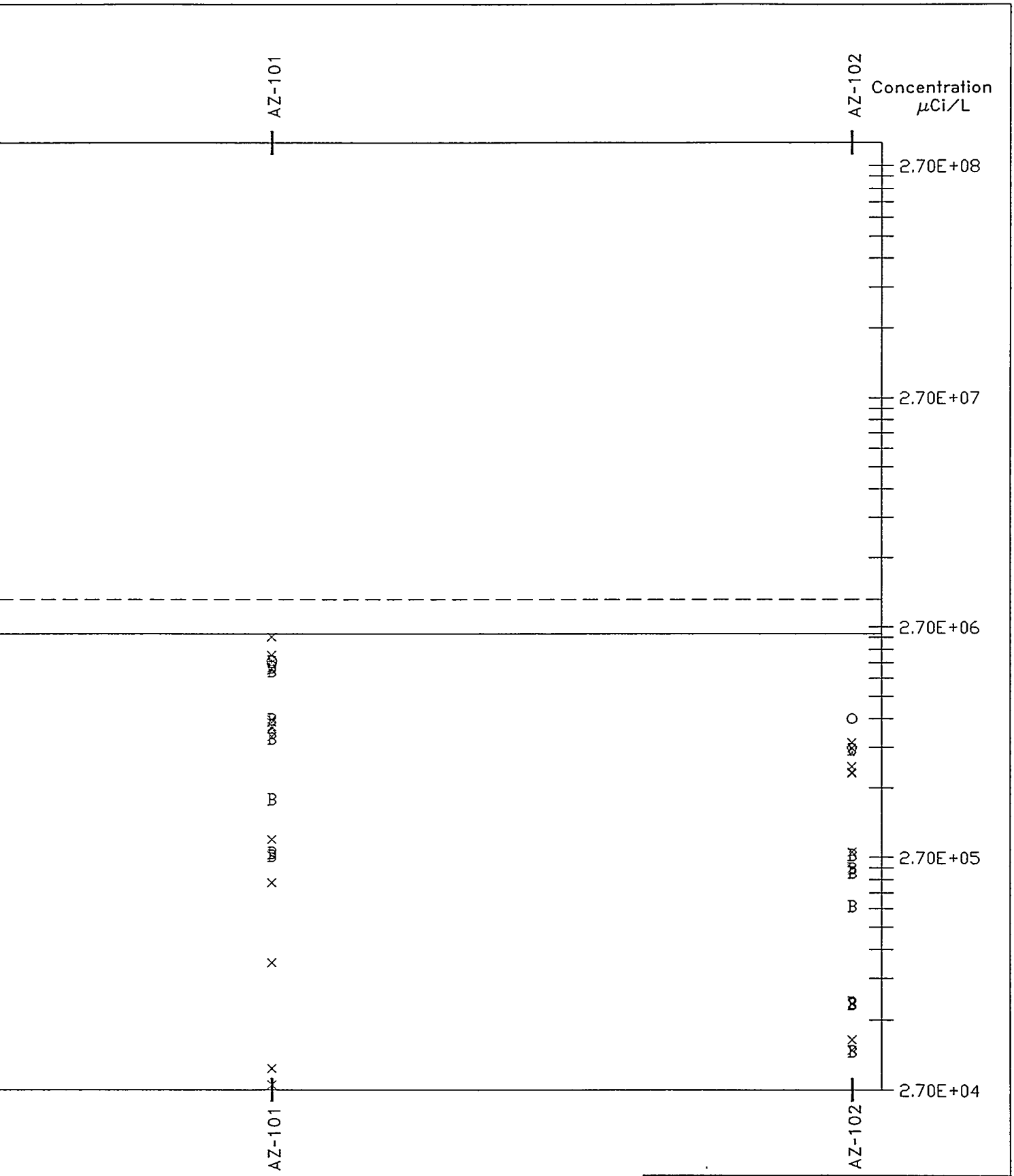
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Co60 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR50 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+13
1.00E+12
1.32E+11
(Preliminary)
9.2E+10
1.00E+10
1.00E+09
AY-101
AY-102
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun
HTCE Ir
TRAC



entory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

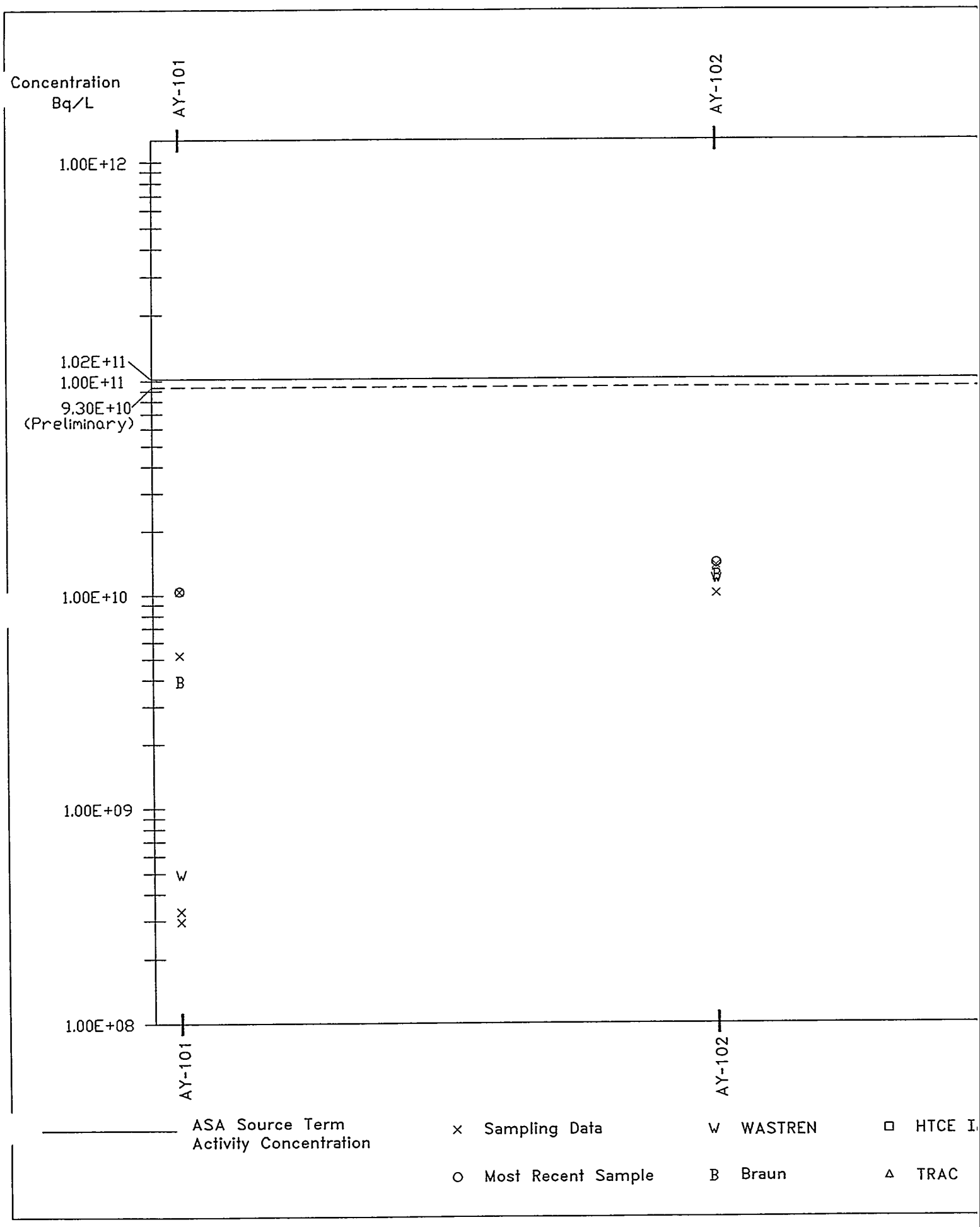
Extented tank lines represent Flamable Gas Watch List Tanks.

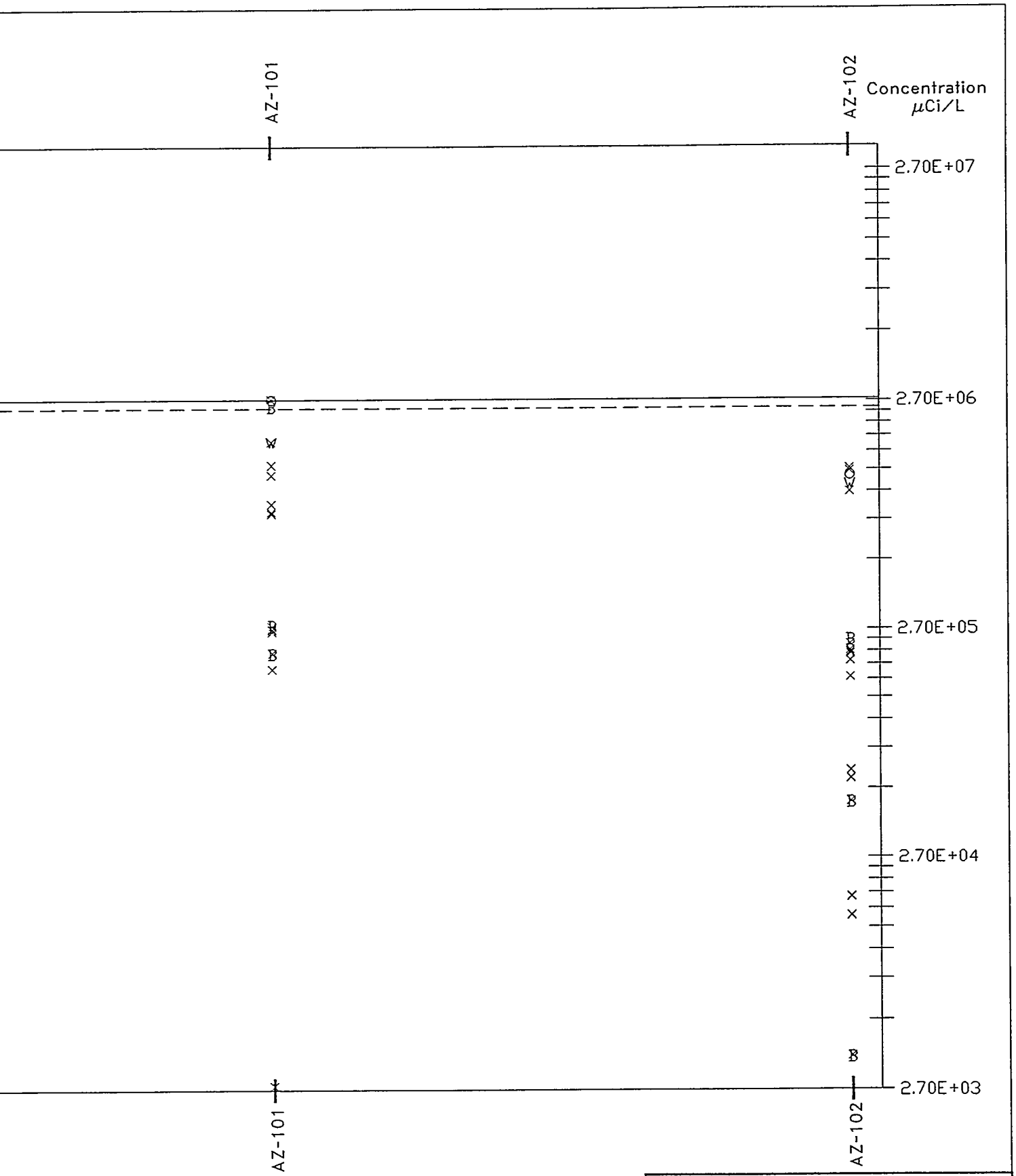
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Cs137 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR51 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+12
1.02E+11
1.00E+11
9.30E+10
(Preliminary)
1.00E+10
1.00E+09
1.00E+08
B
W
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE I
TRAC



entory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

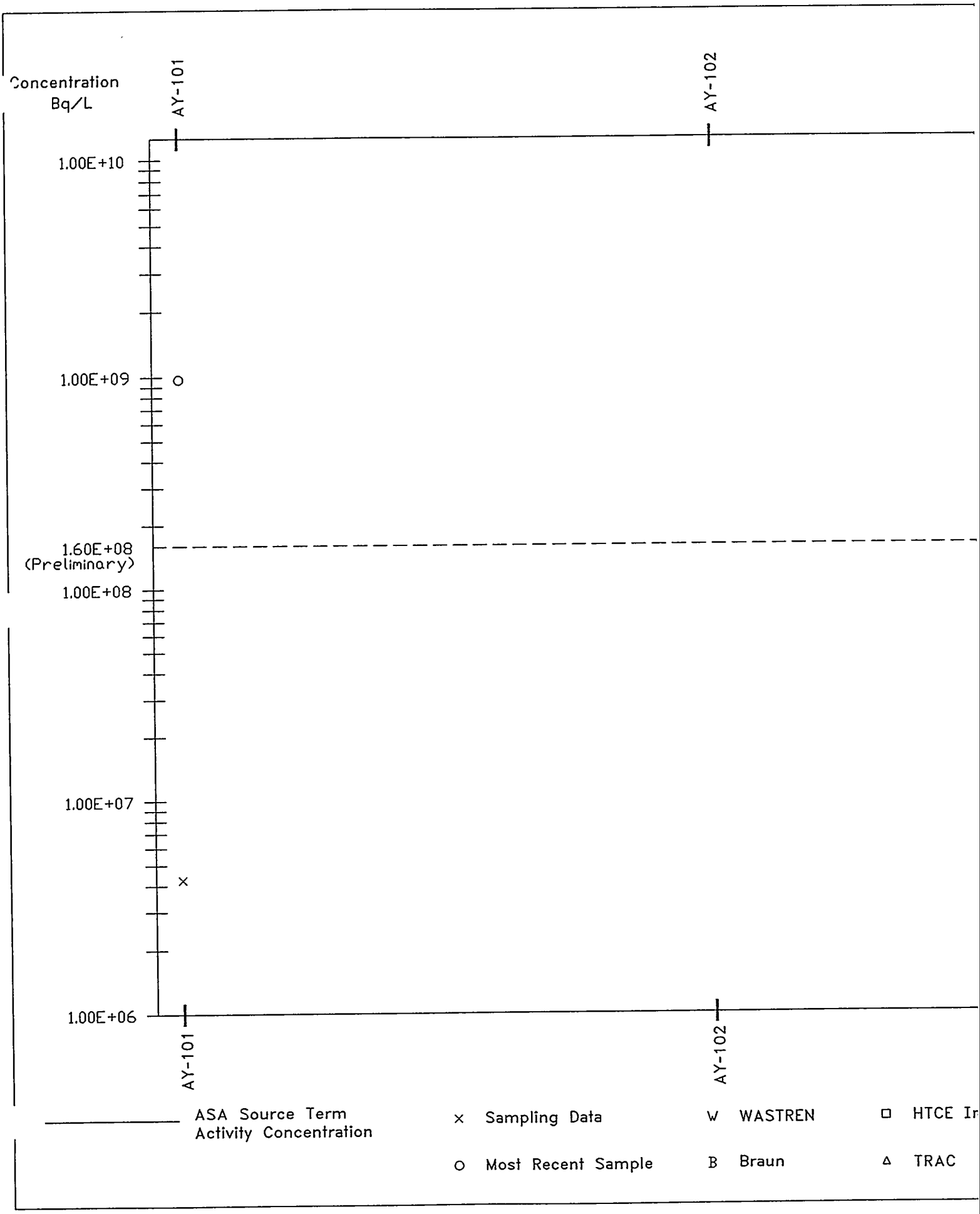
Extented tank lines represent Flamable Gas Watch List Tanks.

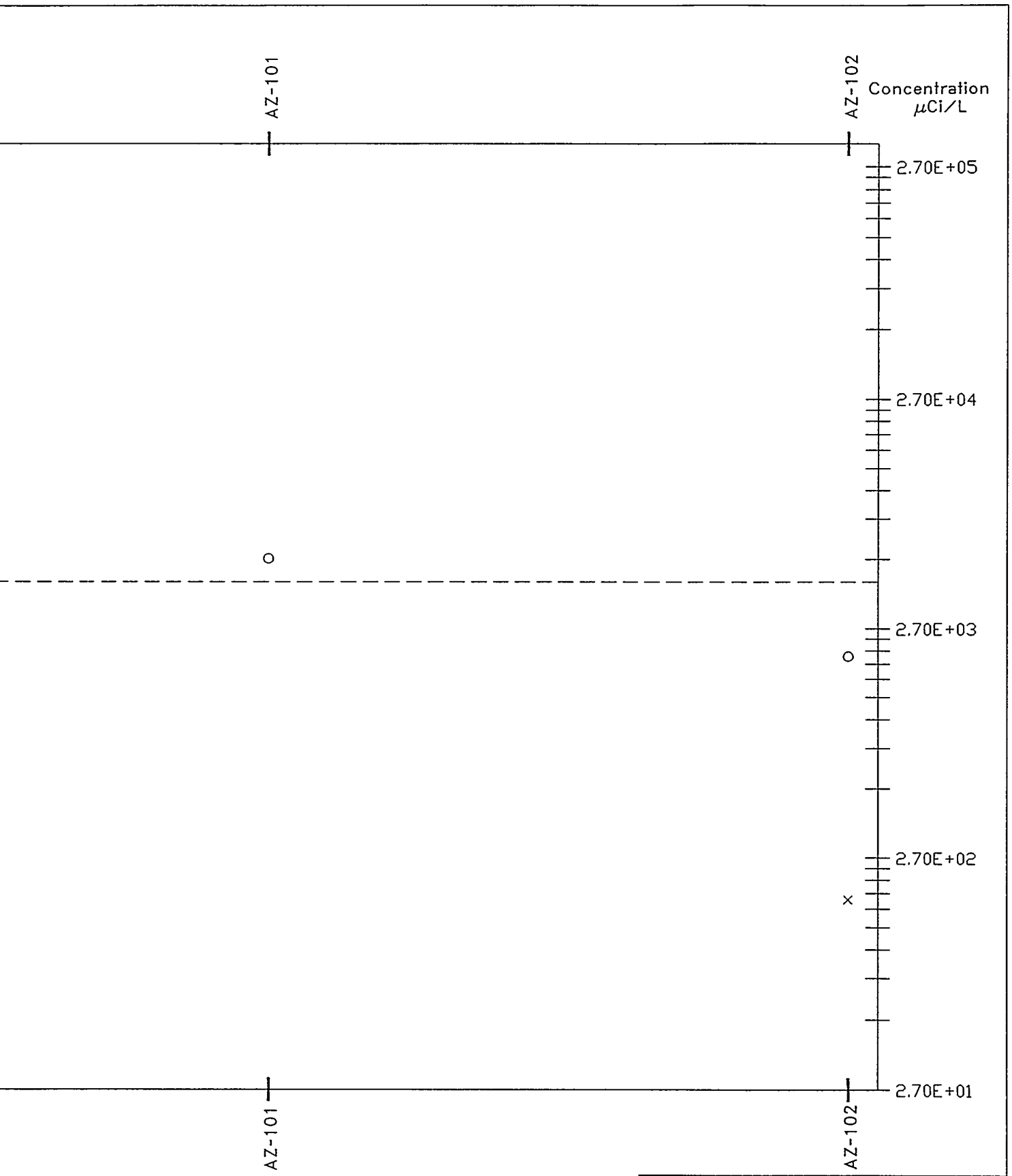
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Cs137 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR52 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+10
1.00E+09
1.60E+08
(Preliminary)
1.00E+08
1.00E+07
1.00E+06
AY-101
AY-102
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun
HTCE Ir
TRAC



ntory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

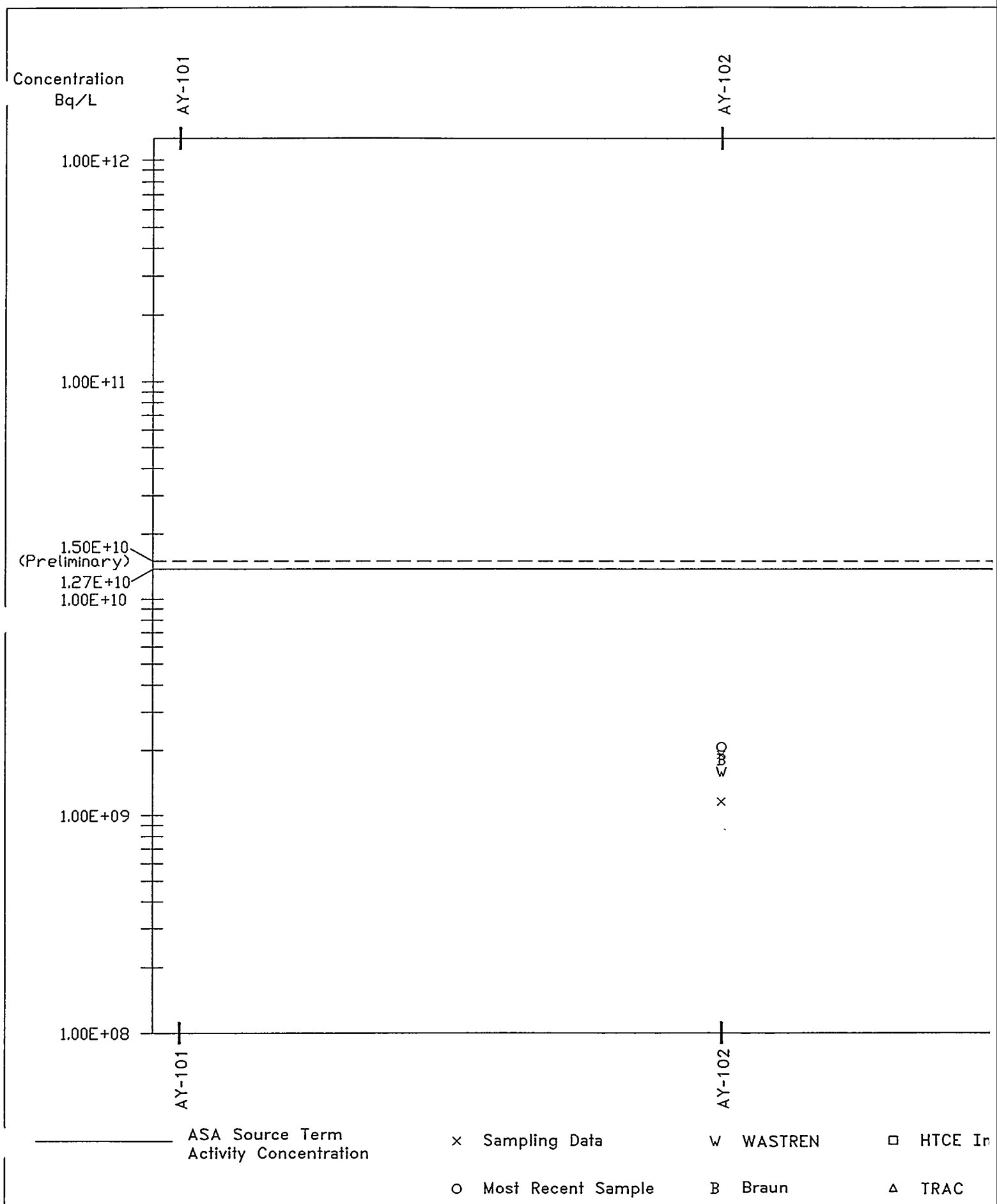
Extented tank lines represent Flamable Gas Watch List Tanks.

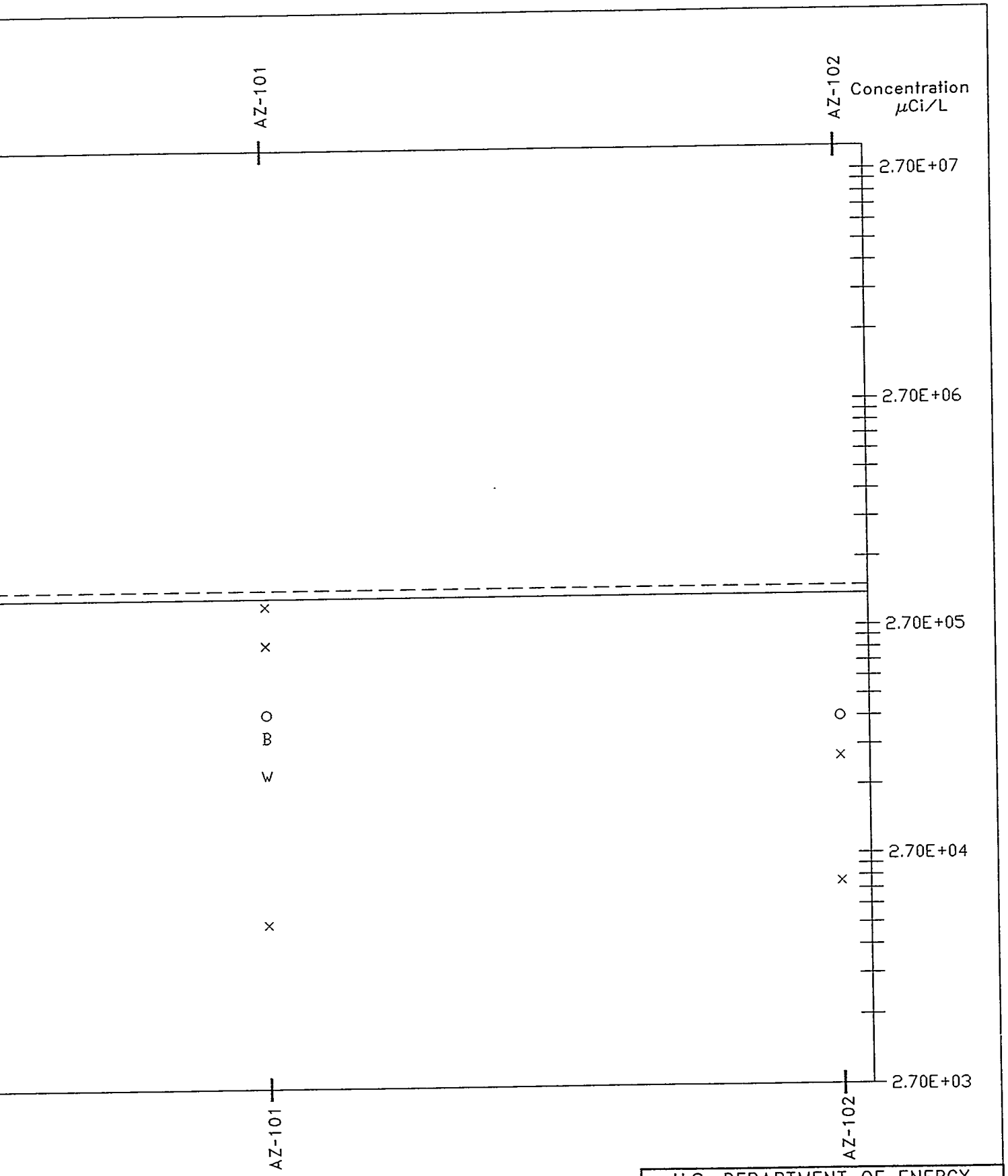
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Eu154 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No.	JOB NO.	Date
ES-VAL-CR53	E01595	4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+12
1.00E+11
1.50E+10
(Preliminary)
1.27E+10
1.00E+10
1.00E+09
1.00E+08
AY-101
AY-102
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE In
TRAC



entory

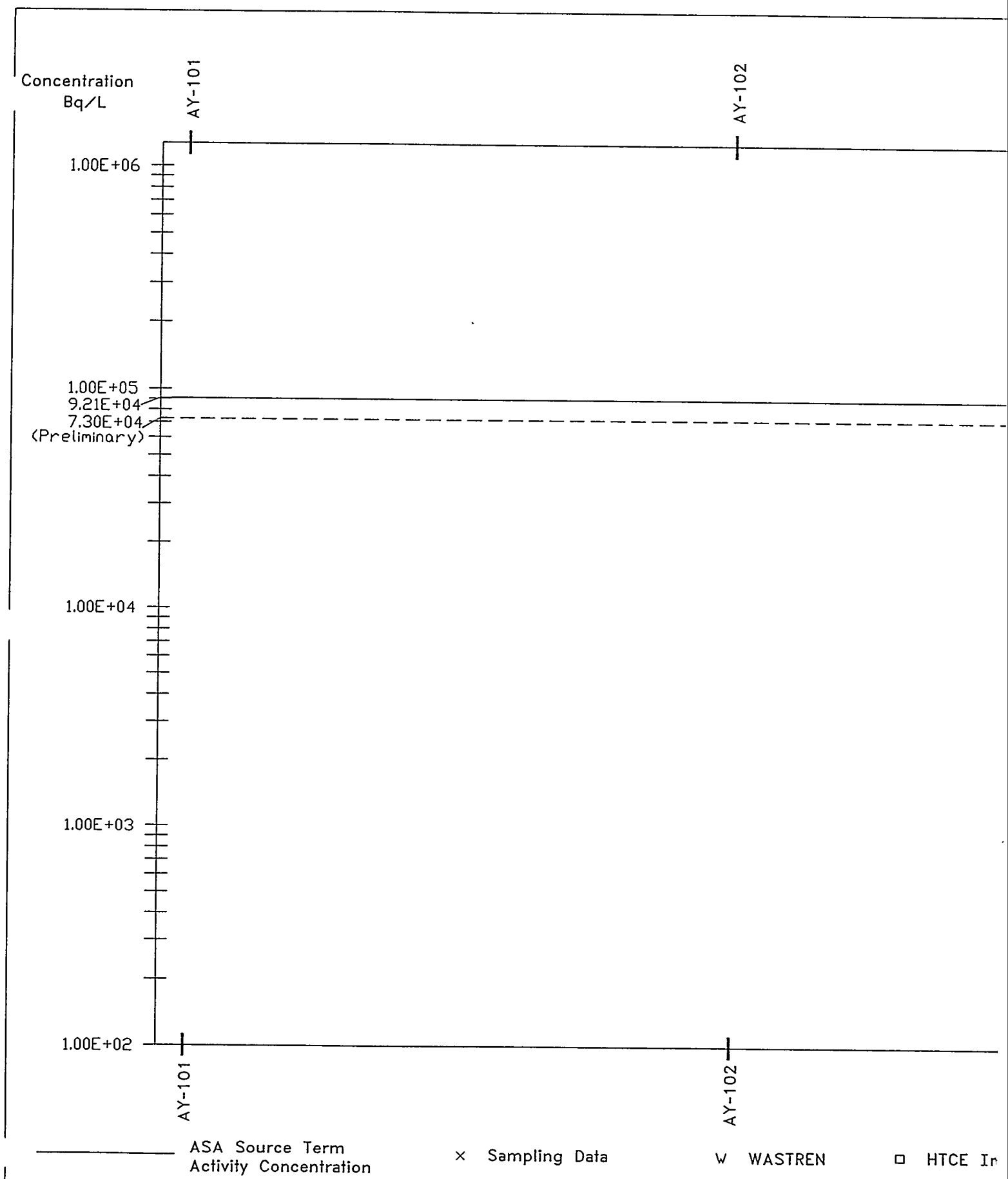
Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

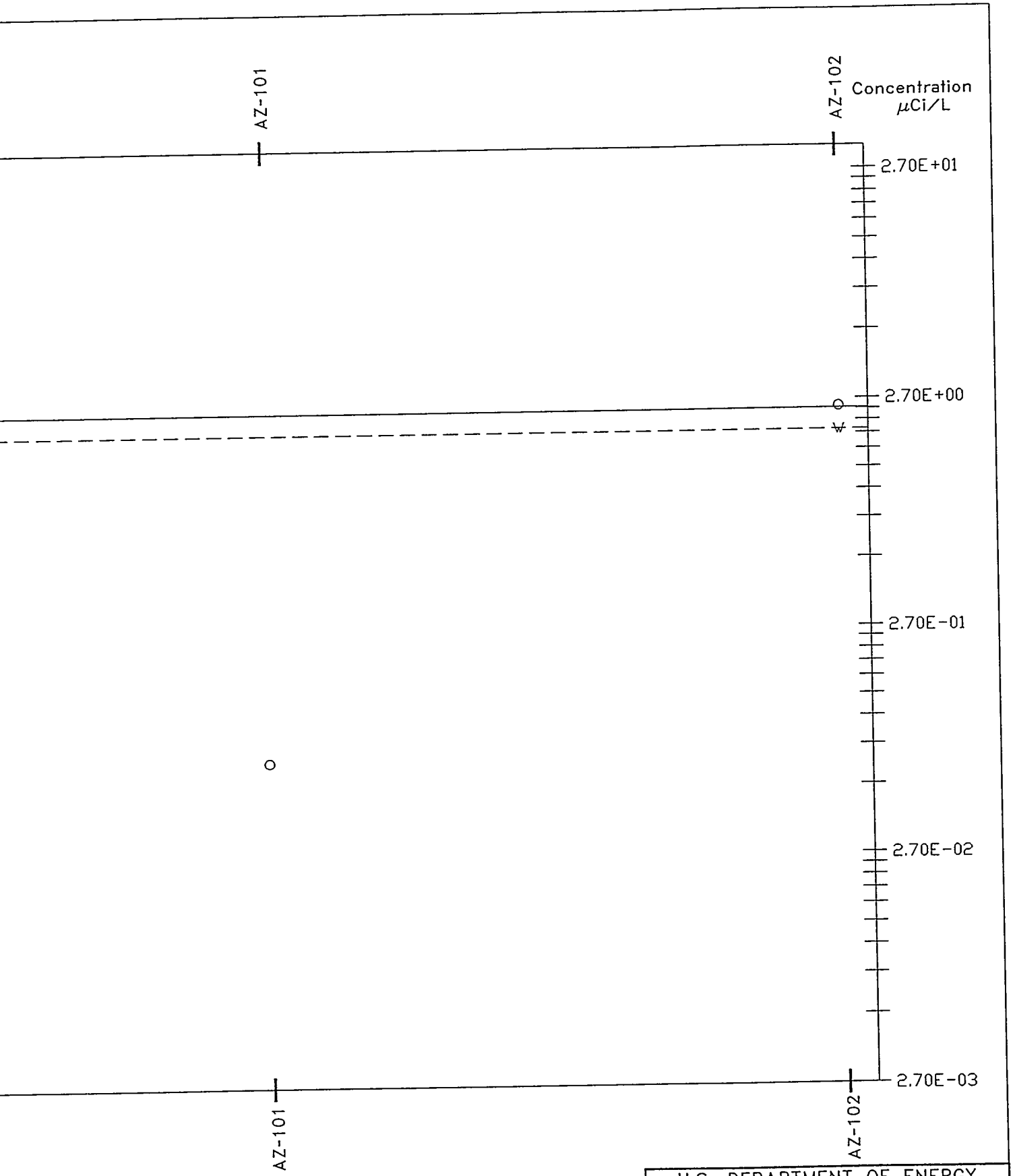
Extented tank lines represent Flamable Gas Watch List Tanks.

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Eu154 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION			
Drawing No. ES-VAL-CR54	JOB NO. E01595	Date 4/95	


Concentration
Bq/L
AY-101
AY-102
1.00E+06
1.00E+05
9.21E+04
7.30E+04
(Preliminary)
1.00E+04
1.00E+03
1.00E+02
AY-101
AY-102
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□ HTCE Ir
○ Most Recent Sample
B Braun
△ TRAC



ventory

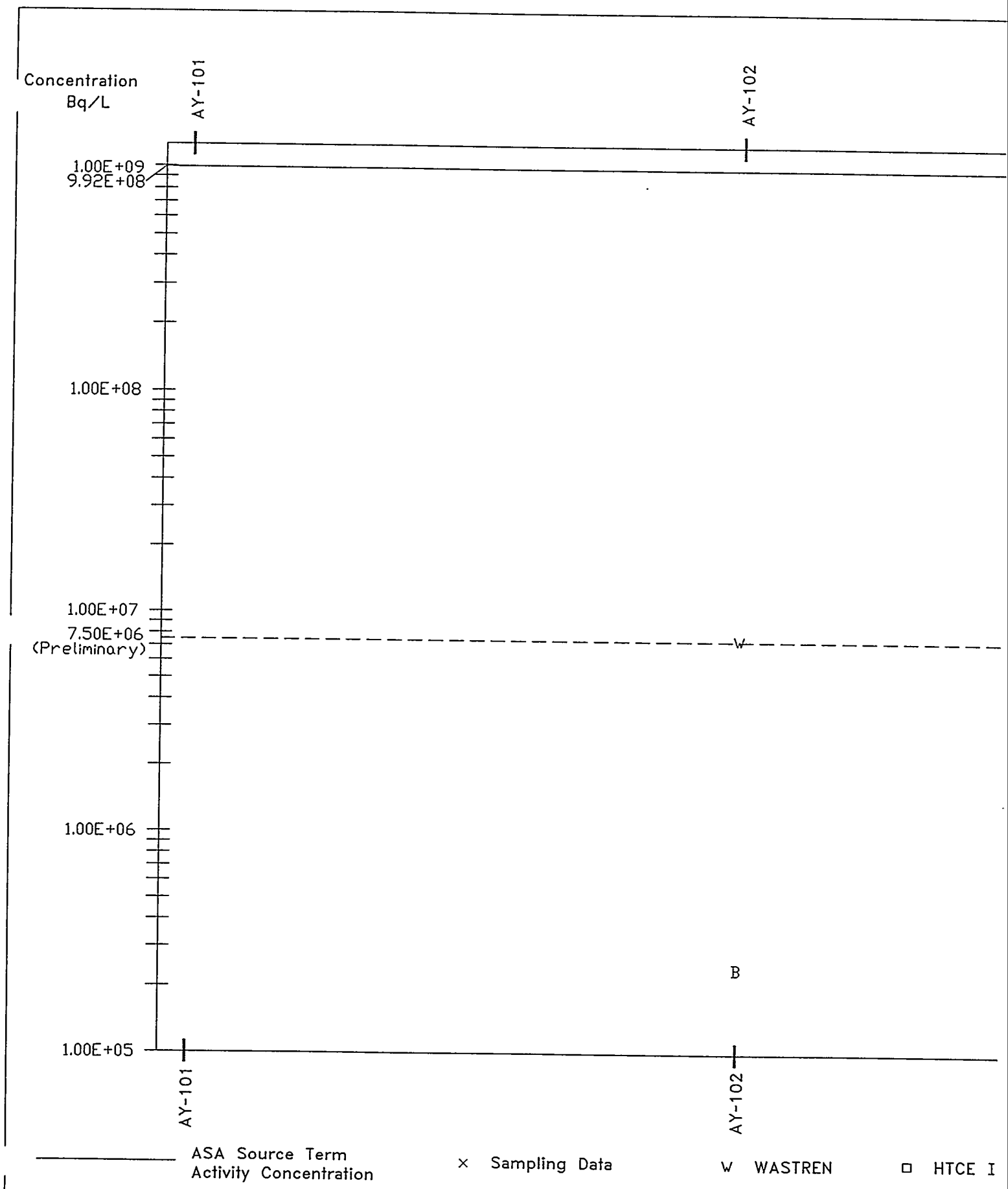
Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

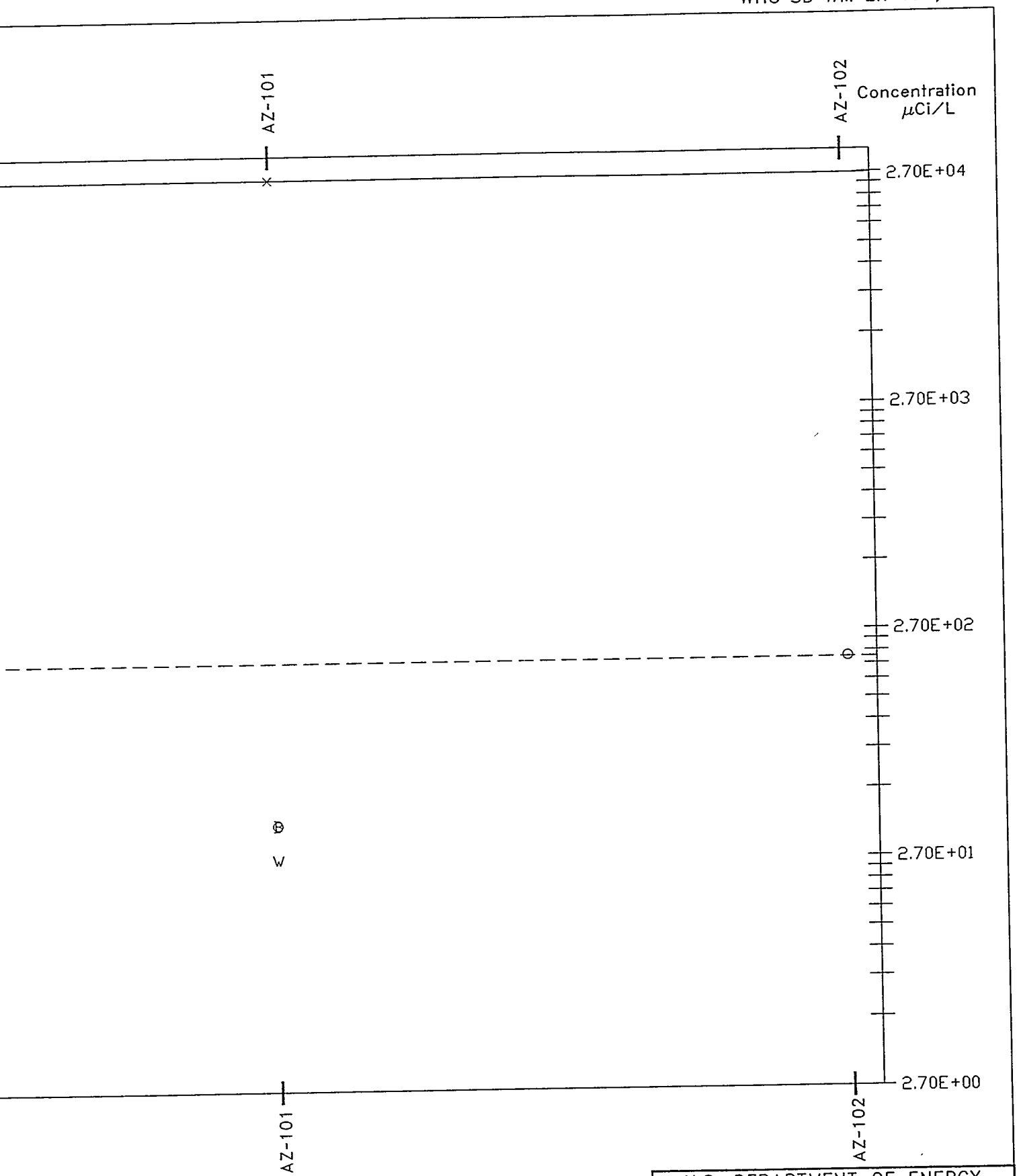
Extented tank lines represent Flamable Gas Watch List Tanks.

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Np237 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION			
Drawing No. ES-VAL-CR55	JOB NO. E01595	Date 4/95	


Concentration
Bq/L
AY-101
AY-102
1.00E+09
9.92E+08
1.00E+08
1.00E+07
7.50E+06
(Preliminary)
1.00E+06
1.00E+05
W
B
AY-101
AY-102
ASA Source Term
Activity Concentration
× Sampling Data
O Most Recent Sample
W WASTREN
B Braun
□ HTCE I
Δ TRAC



ventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

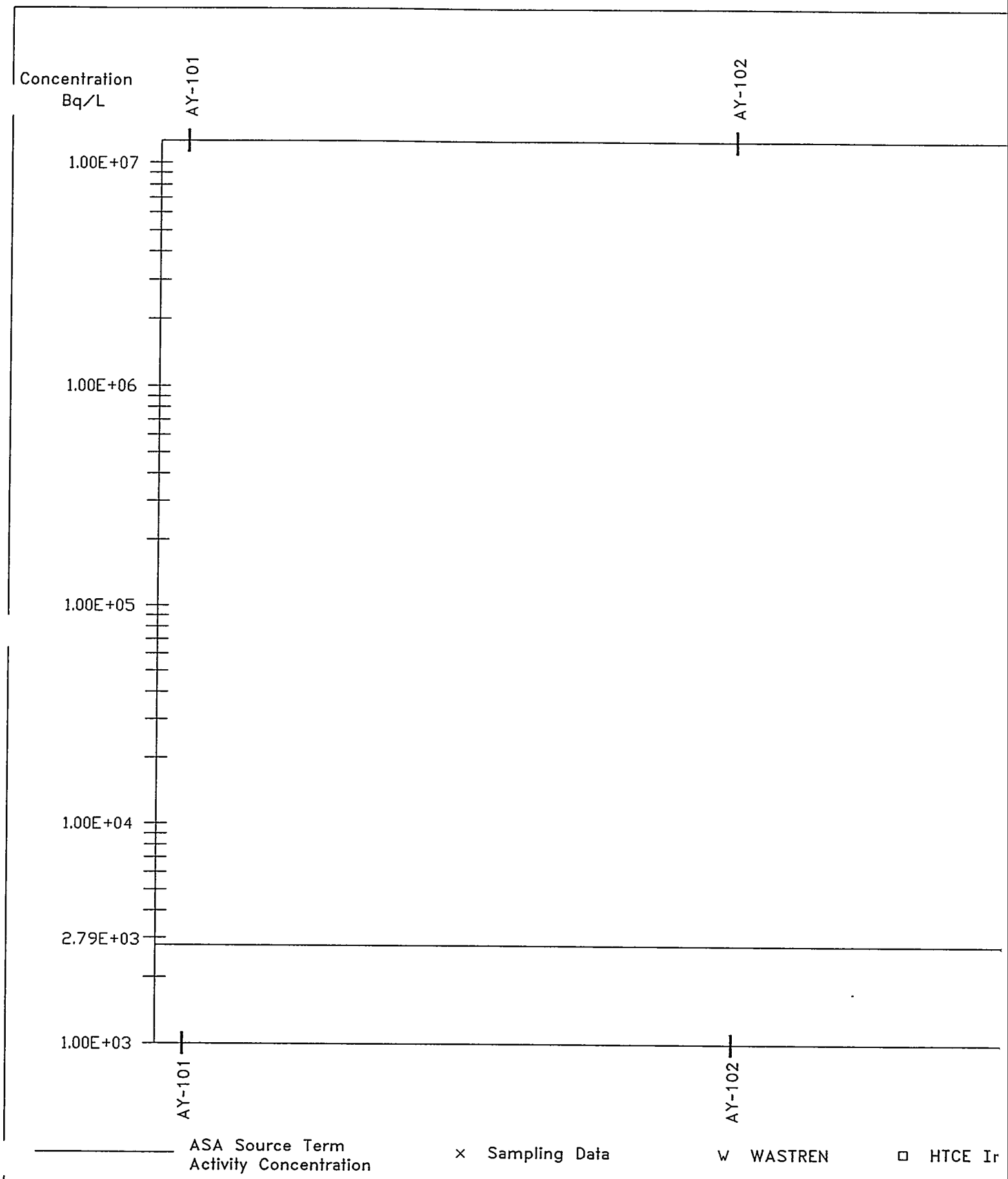
Extented tank lines represent Flamable Gas Watch List Tanks.

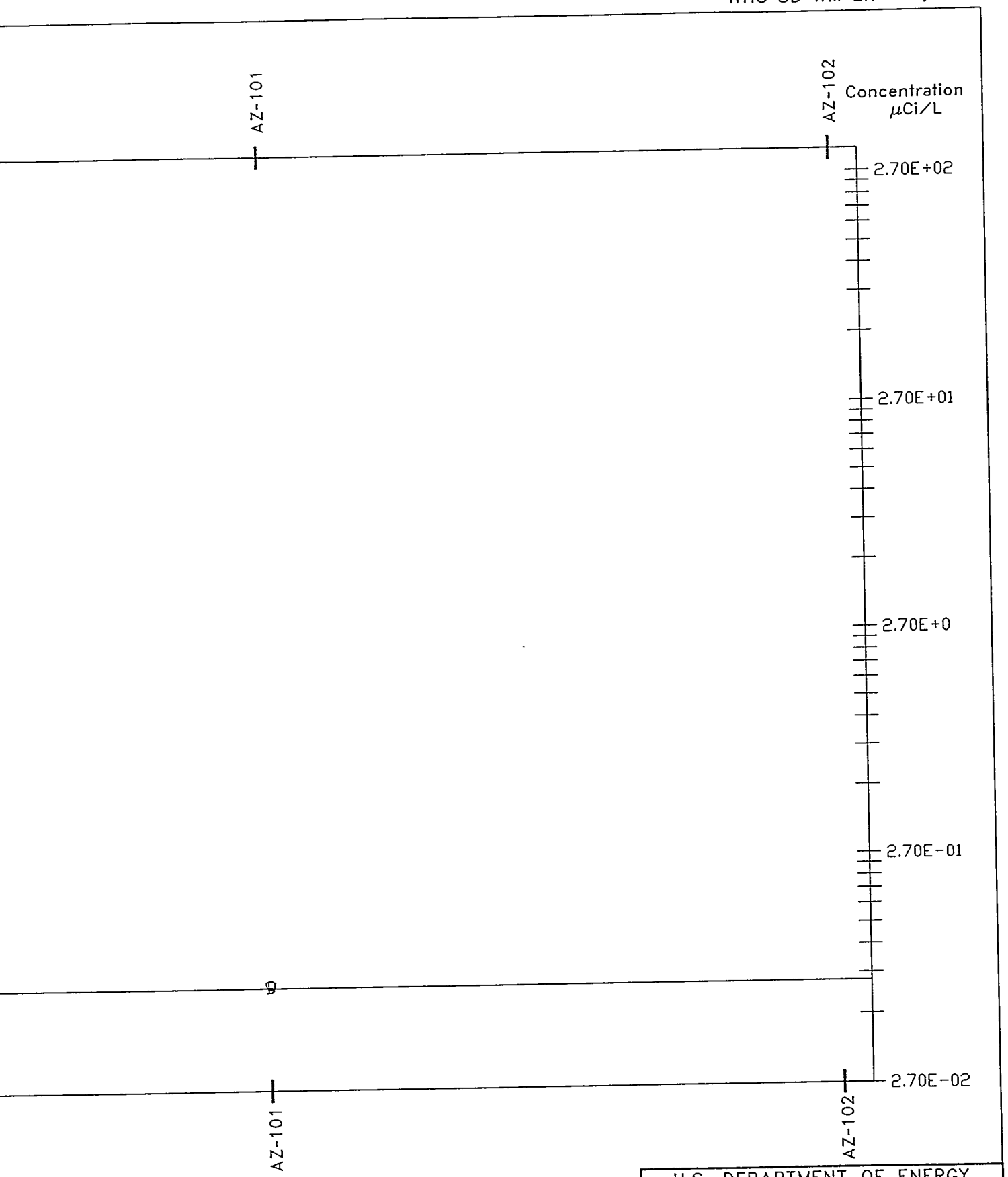
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Np237 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR56 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+07
1.00E+06
1.00E+05
1.00E+04
2.79E+03
1.00E+03
AY-101
AY-102
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□ HTCE Ir
○ Most Recent Sample
B Braun
△ TRAC



entory

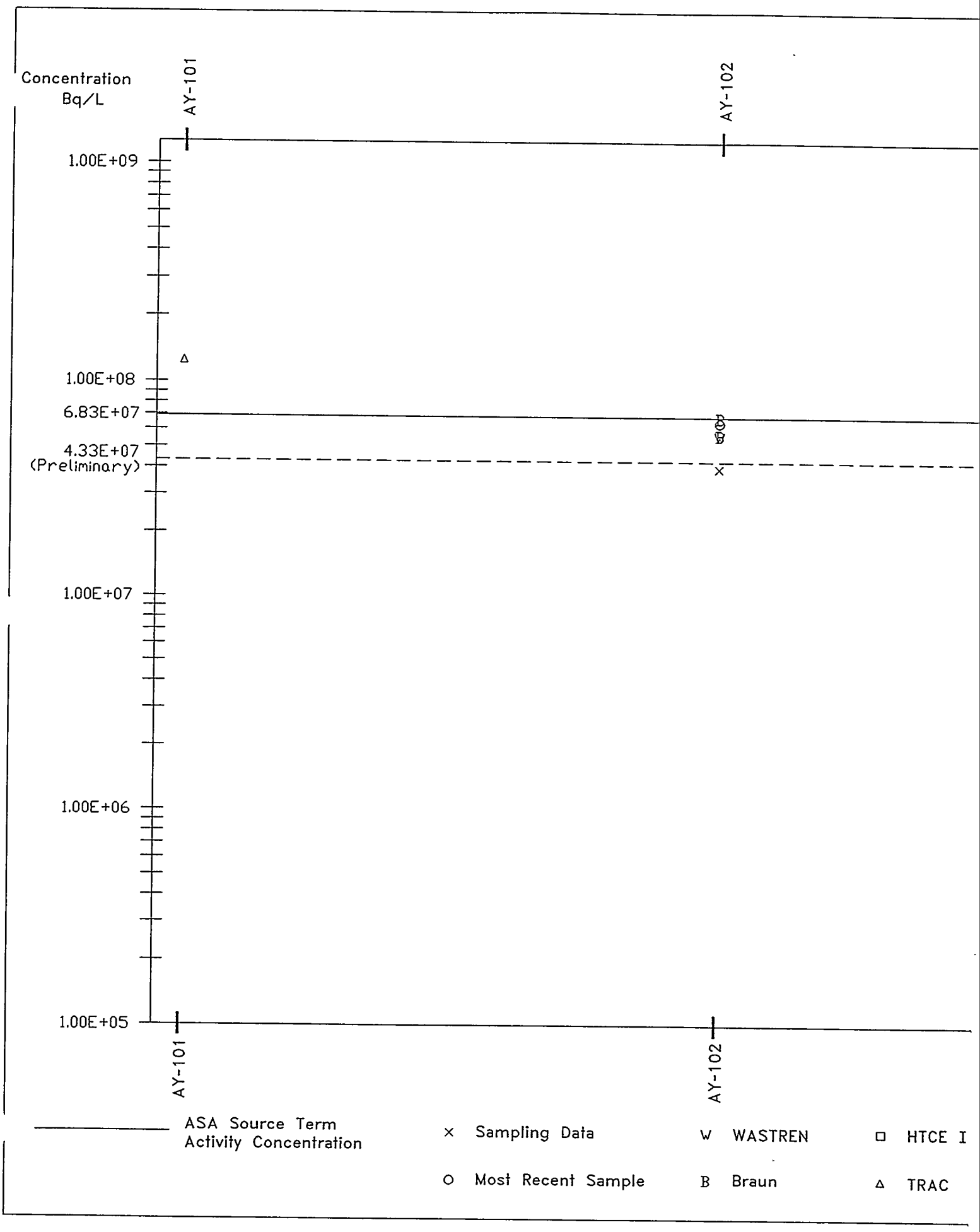
Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

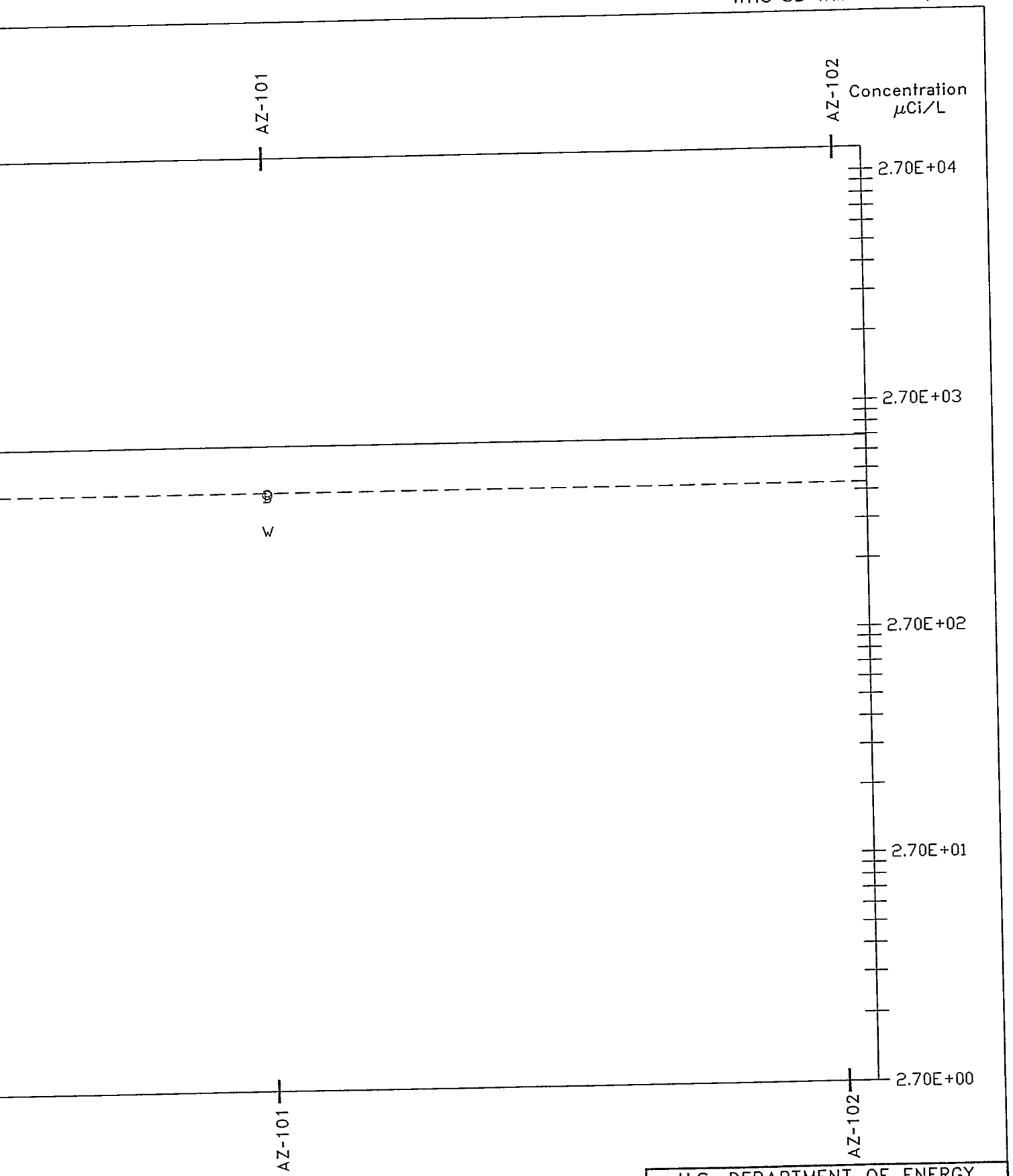
Extented tank lines represent Flamable Gas Watch List Tanks.

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Pu238 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION			
Drawing No. ES-VAL-CR57	JOB NO. E01595	Date 4/95	


Concentration
Bq/L
AY-101
AY-102
1.00E+09
1.00E+08
6.83E+07
4.33E+07
(Preliminary)
1.00E+07
1.00E+06
1.00E+05
AY-101
AY-102
ASA Source Term
Activity Concentration
× Sampling Data
O Most Recent Sample
W WASTREN
B Braun
□ HTCE I
△ TRAC



ventory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

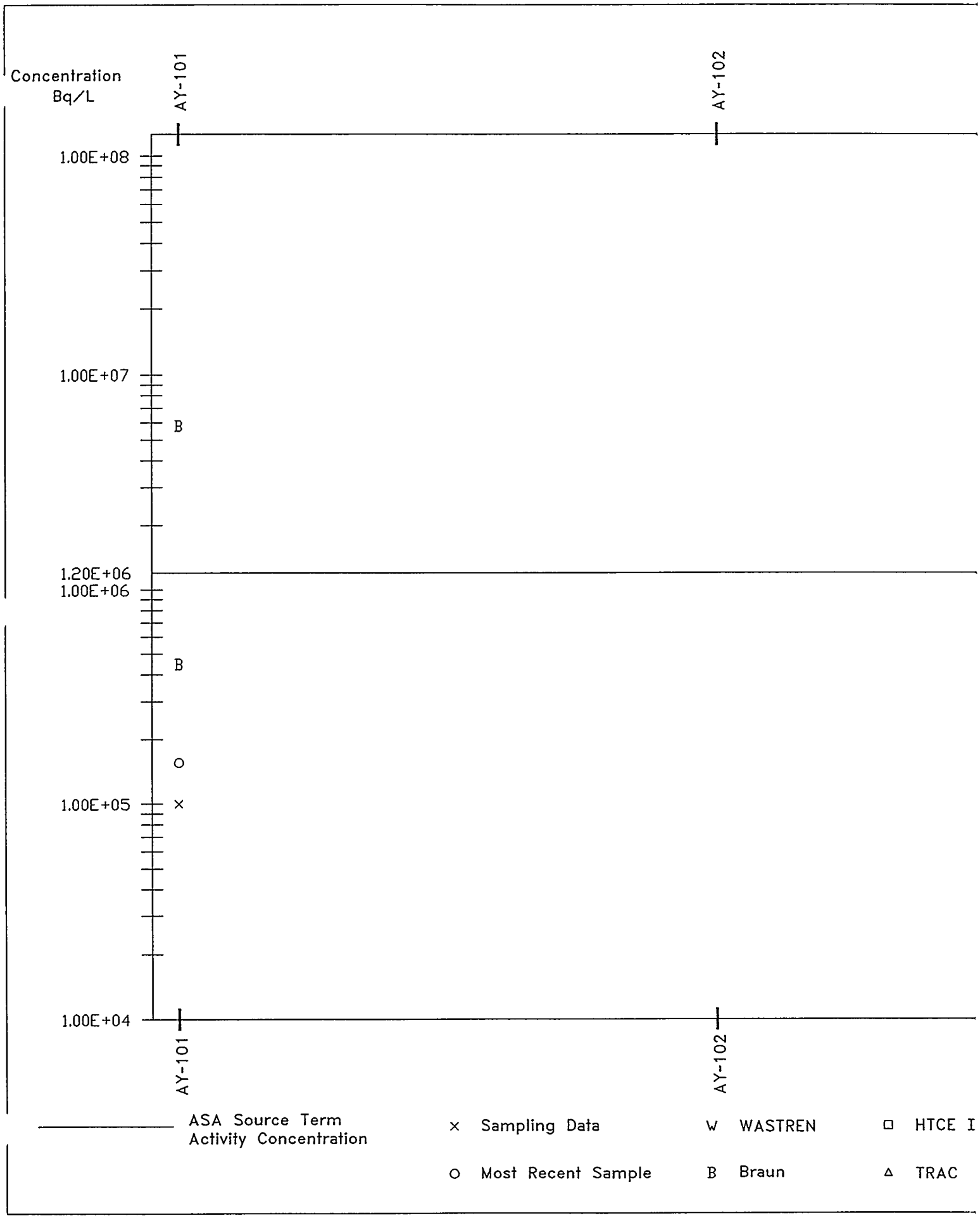
Extented tank lines represent Flamable Gas Watch List Tanks.

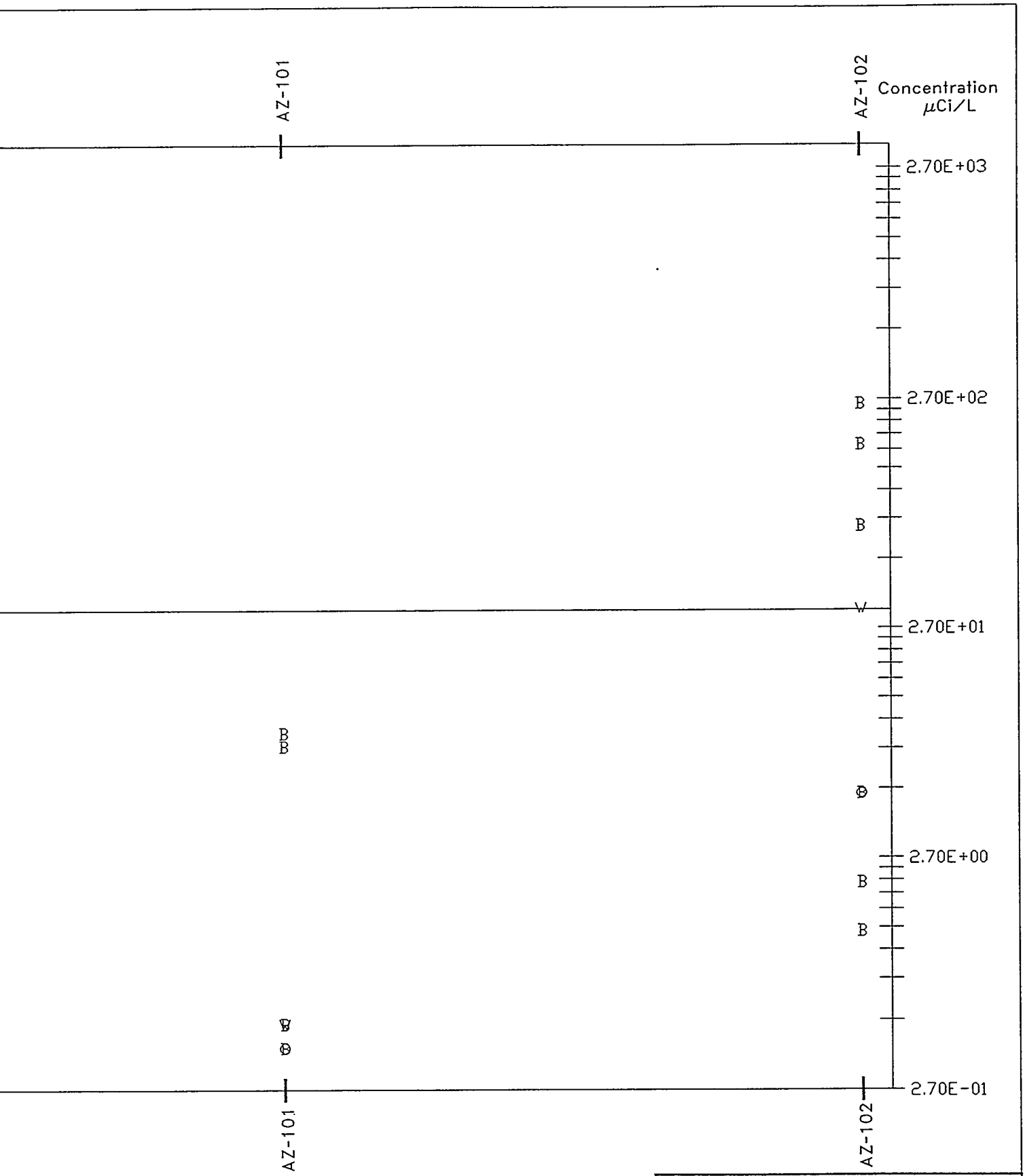
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Pu238 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR58 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+08
1.00E+07
1.20E+06
1.00E+06
1.00E+05
1.00E+04
B
B
O
X
AY-101
AY-102
ASA Source Term
Activity Concentration
X Sampling Data
O Most Recent Sample
W WASTREN
B Braun
□ HTCE I
Δ TRAC



ventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

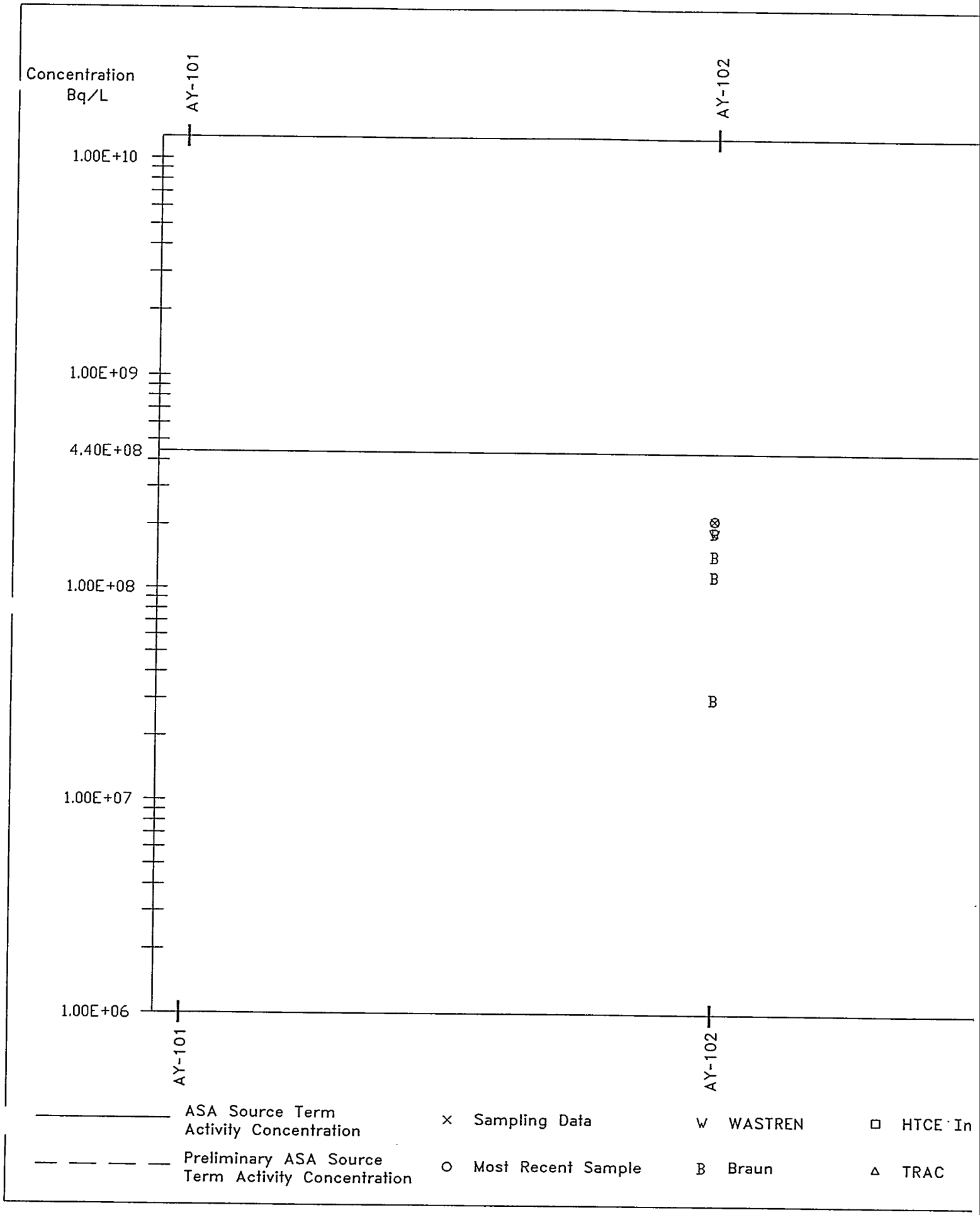
Extented tank lines represent Flamable Gas Watch List Tanks.

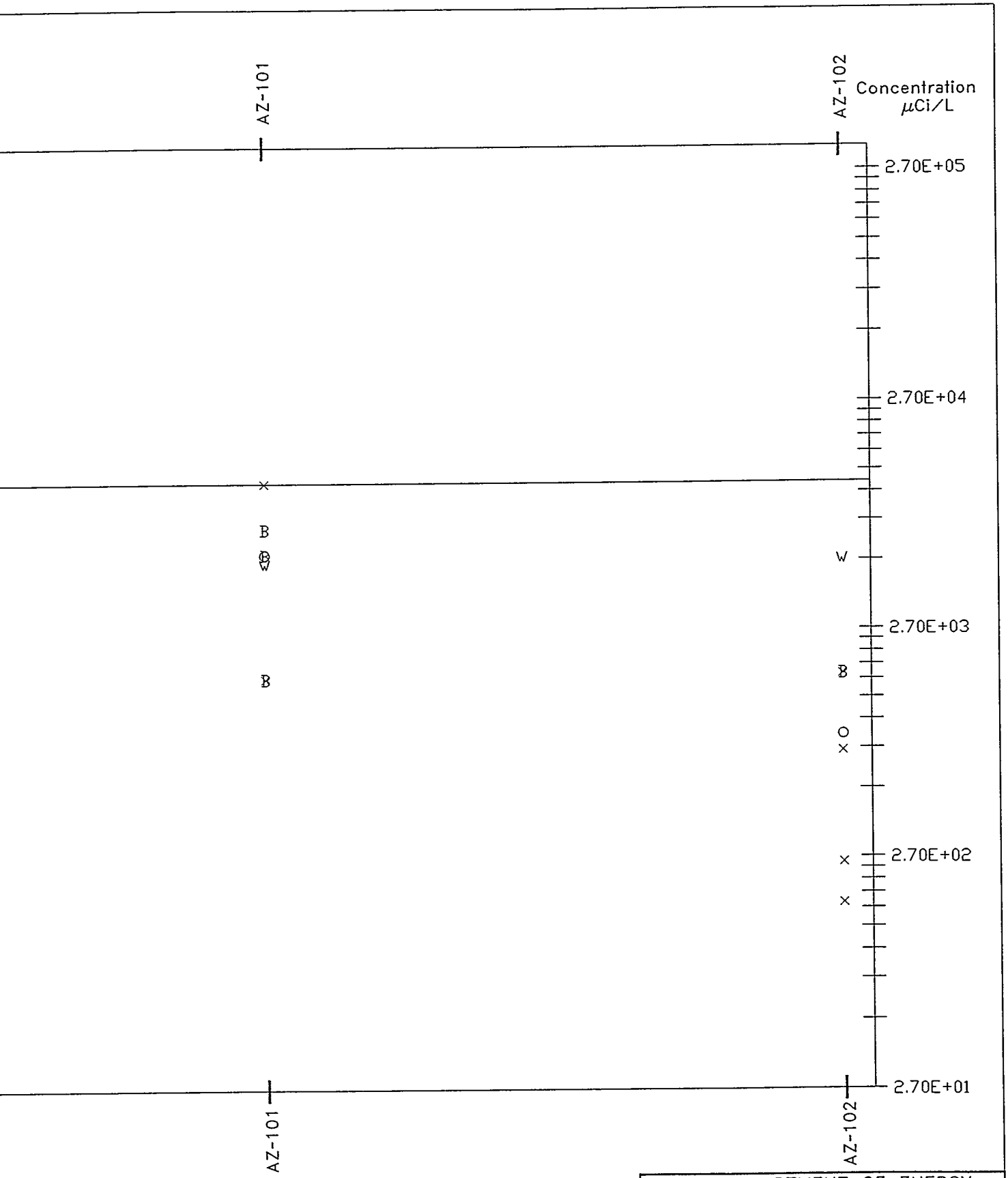
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Pu239/240 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR59 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+10
1.00E+09
4.40E+08
1.00E+08
1.00E+07
1.00E+06
B
B
B
AY-101
AY-102
ASA Source Term Activity Concentration
Preliminary ASA Source Term Activity Concentration
× Sampling Data
O Most Recent Sample
W WASTREN
B Braun
□ HTCE In
△ TRAC



ntory

Conversion from Becquerel/ Liter to µCurie/Liter (µCi/L)=(Bq/L)/(3.7E+04)

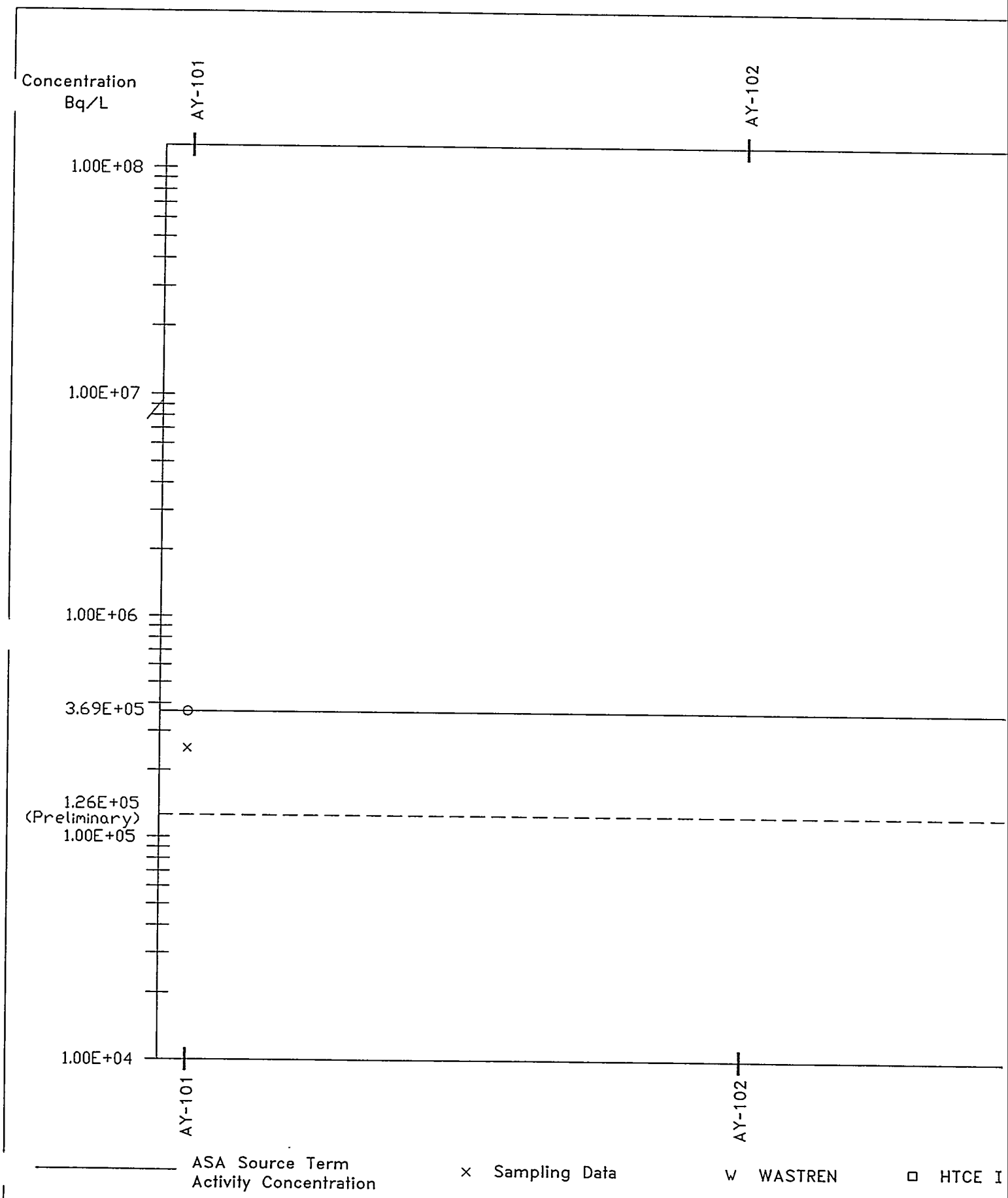
Extented tank lines represent Flamable Gas Watch List Tanks.

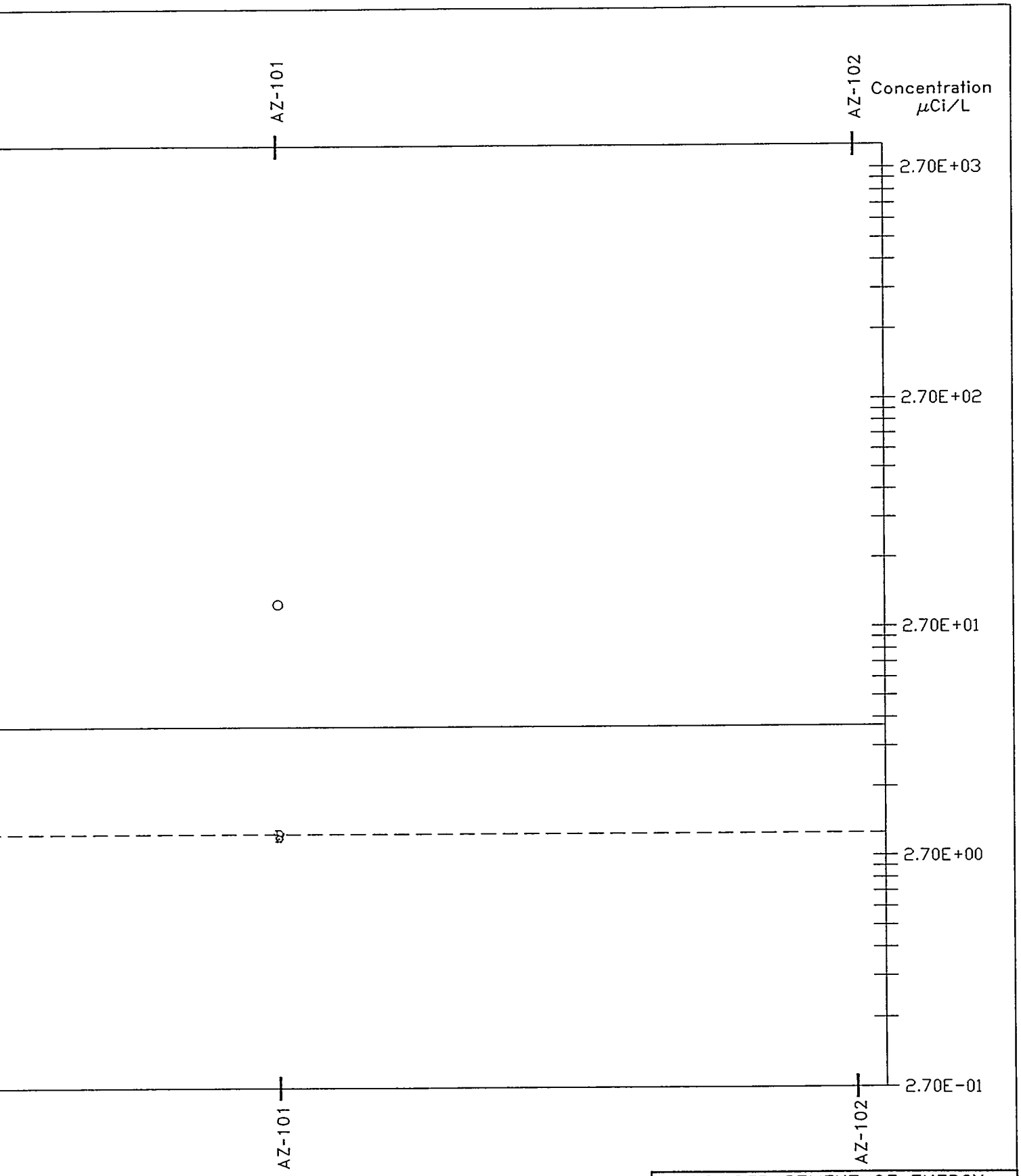
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Pu239/240 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR60 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+08
1.00E+07
1.00E+06
3.69E+05
1.26E+05
(Preliminary)
1.00E+05
1.00E+04
AY-101
AY-102
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun
HTCE I
TRAC



ventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

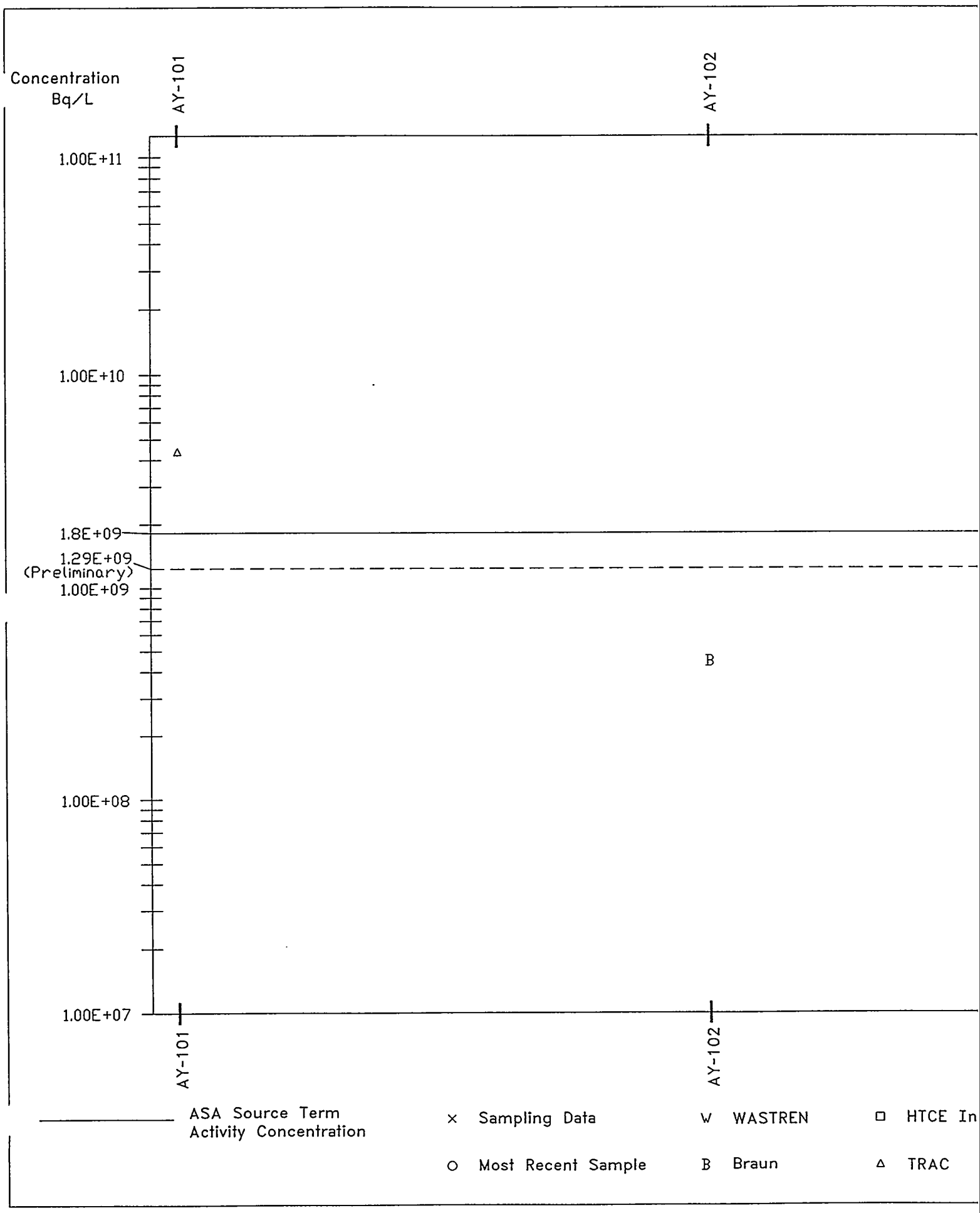
Extented tank lines represent Flamable Gas Watch List Tanks.

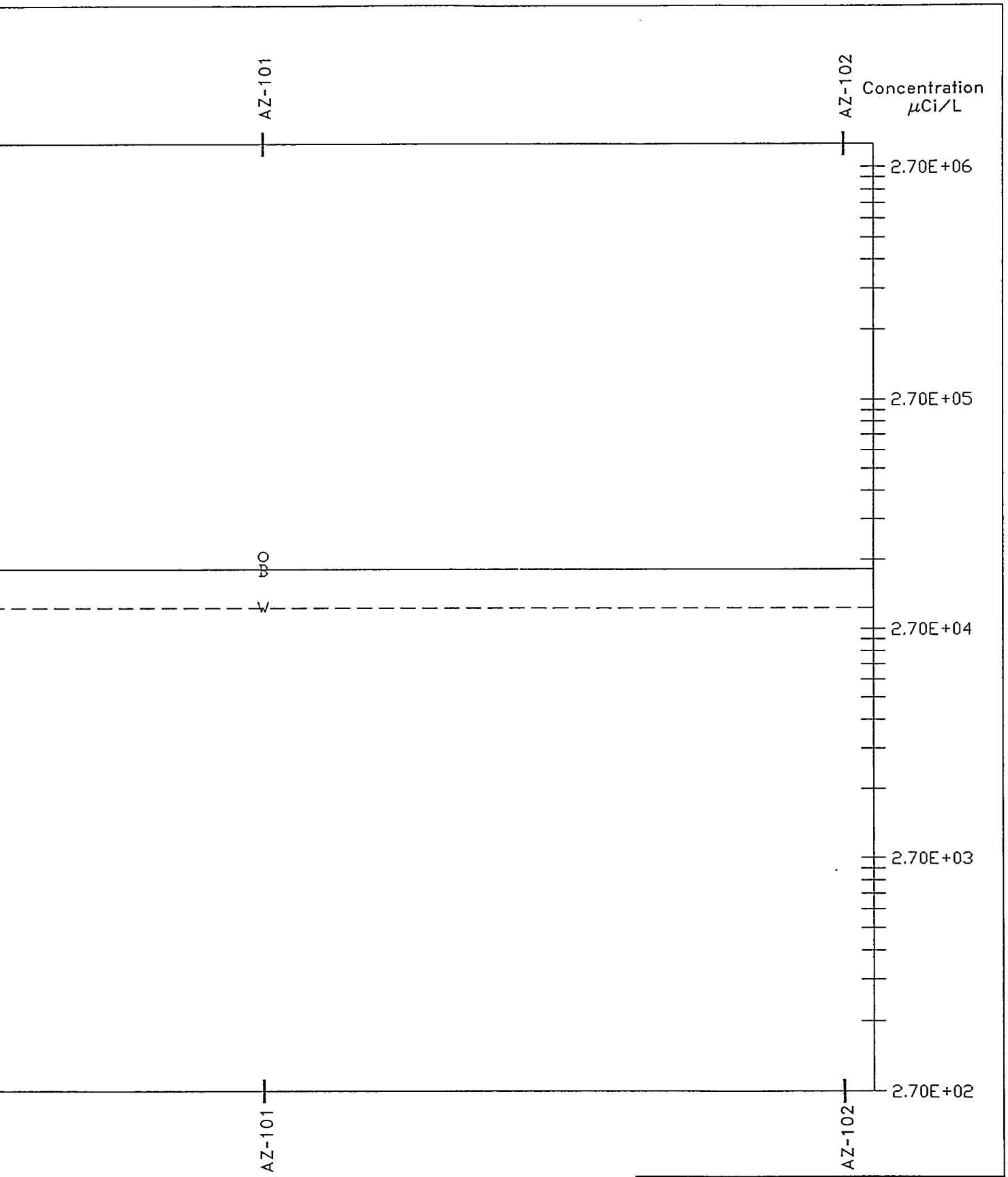
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Pu241 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR61 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+11
1.00E+10
1.8E+09
1.29E+09
(Preliminary)
1.00E+09
1.00E+08
1.00E+07
B
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
HTCE In
Most Recent Sample
Braun
TRAC



ntory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

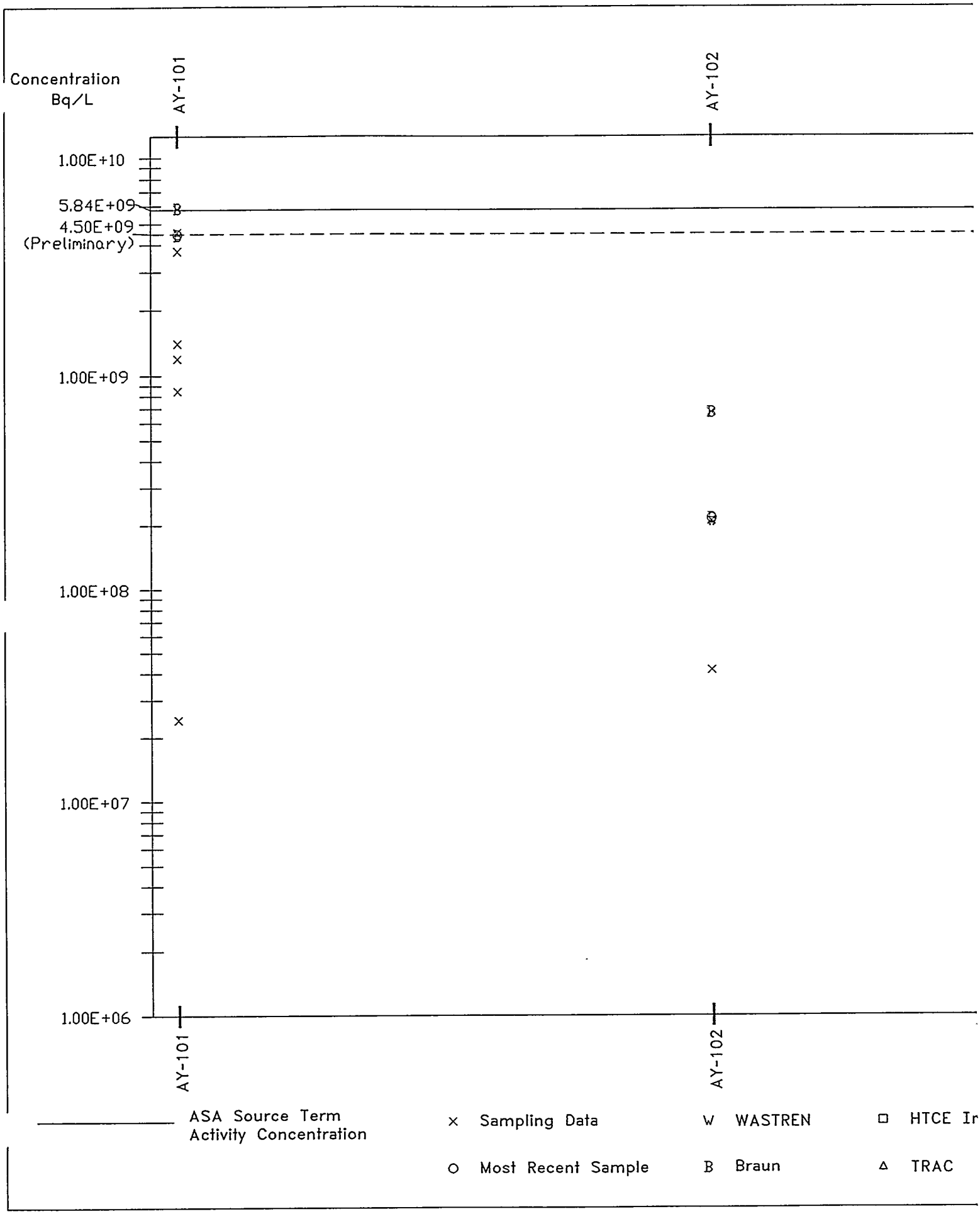
Extented tank lines represent Flamable Gas Watch List Tanks.

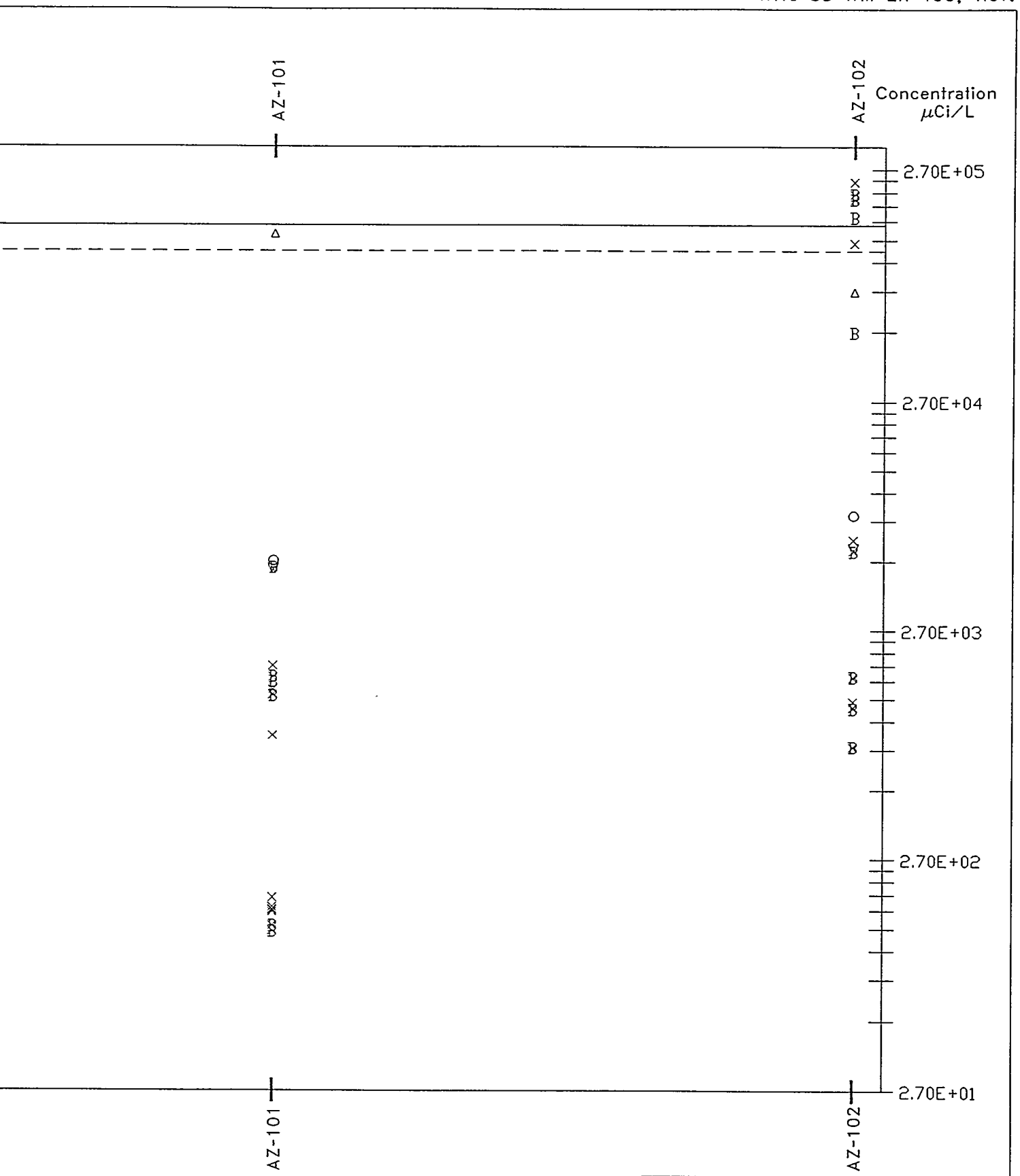
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Pu241 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR62 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+10
5.84E+09
4.50E+09
(Preliminary)
1.00E+09
1.00E+08
1.00E+07
1.00E+06
AY-101
AY-102
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun
HTCE Ir
TRAC



entory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

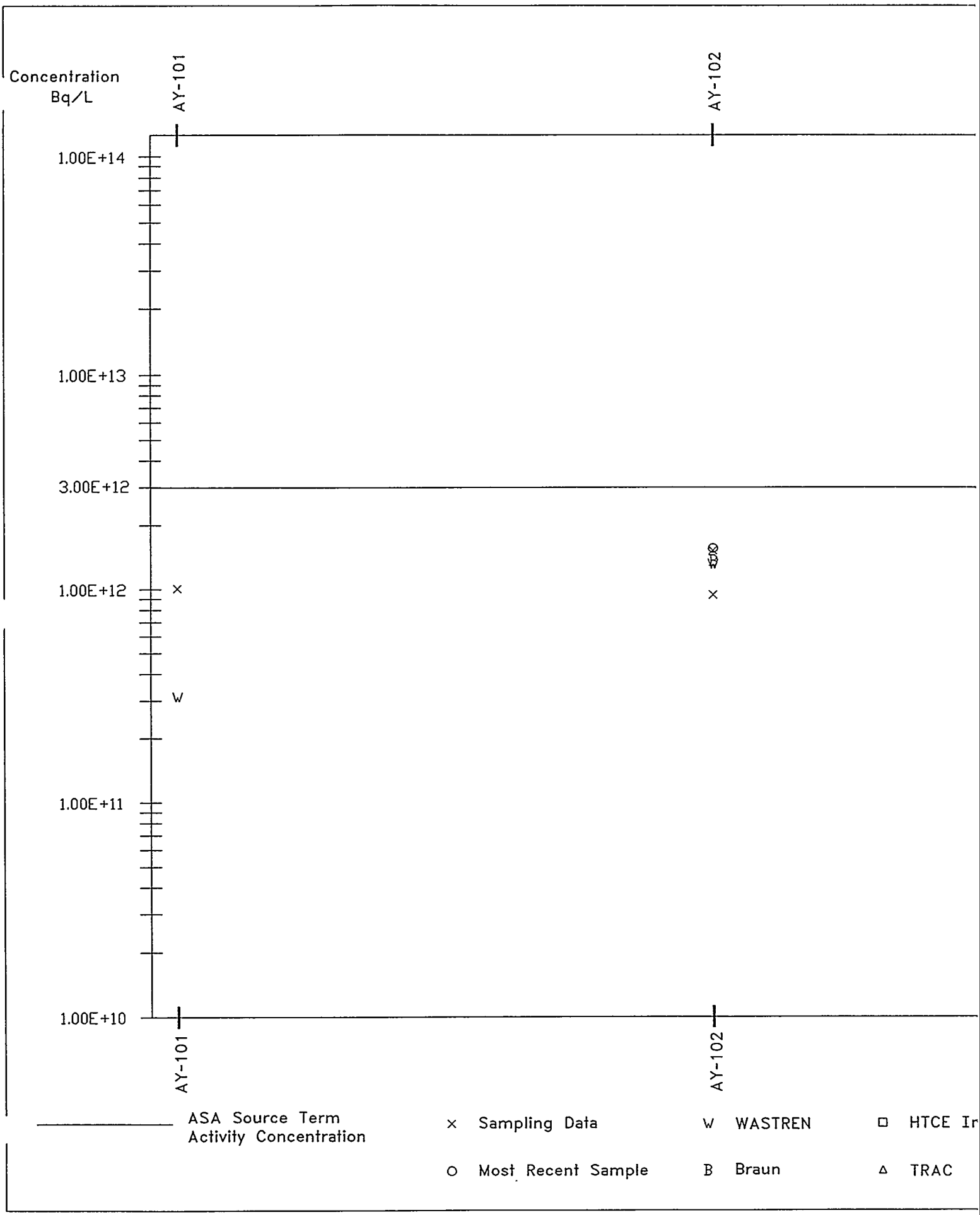
Extented tank lines represent Flamable Gas Watch List Tanks.

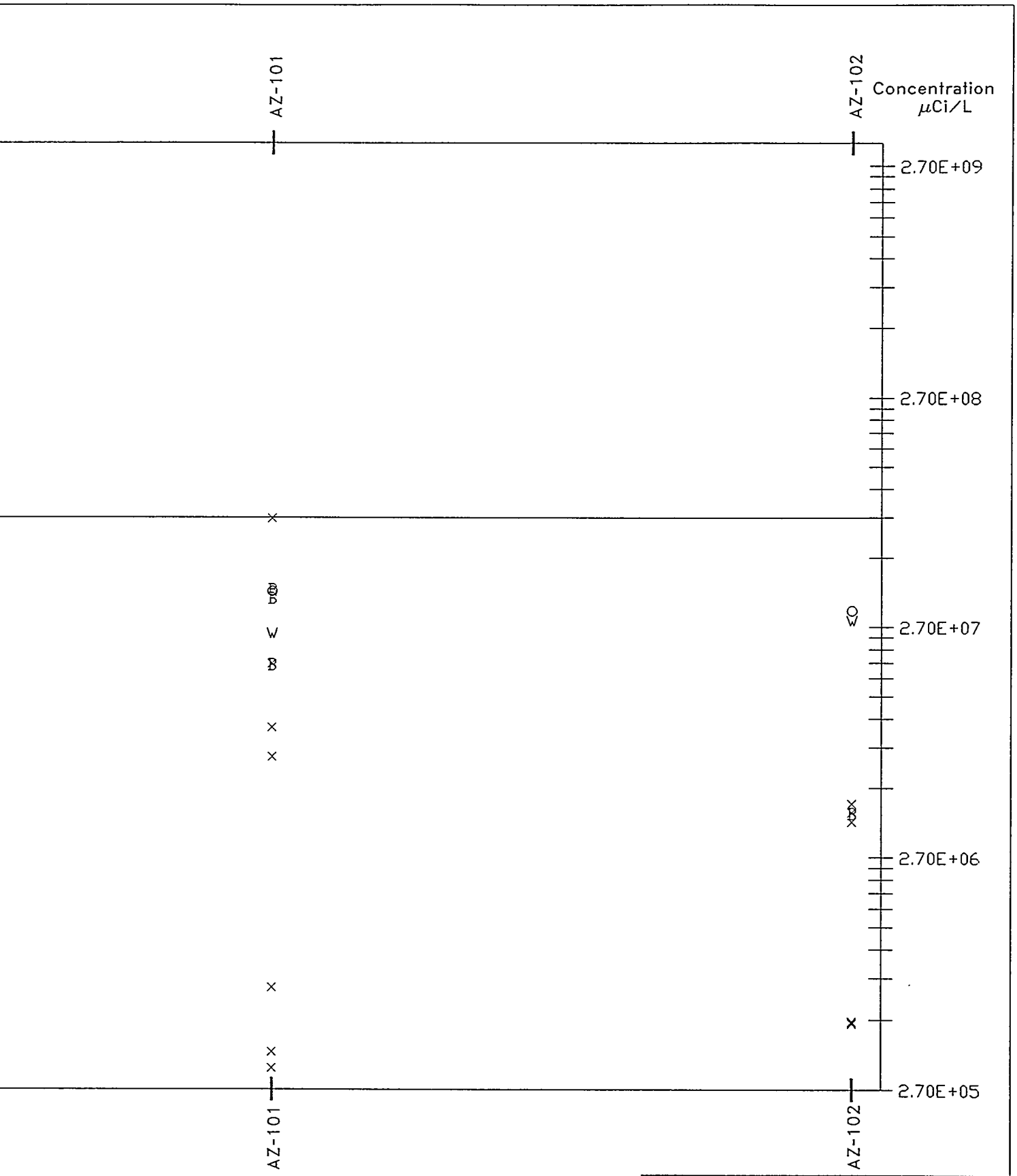
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Sr90 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR63 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+14
1.00E+13
3.00E+12
1.00E+12
1.00E+11
1.00E+10
W
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE Ir
TRAC



ntory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

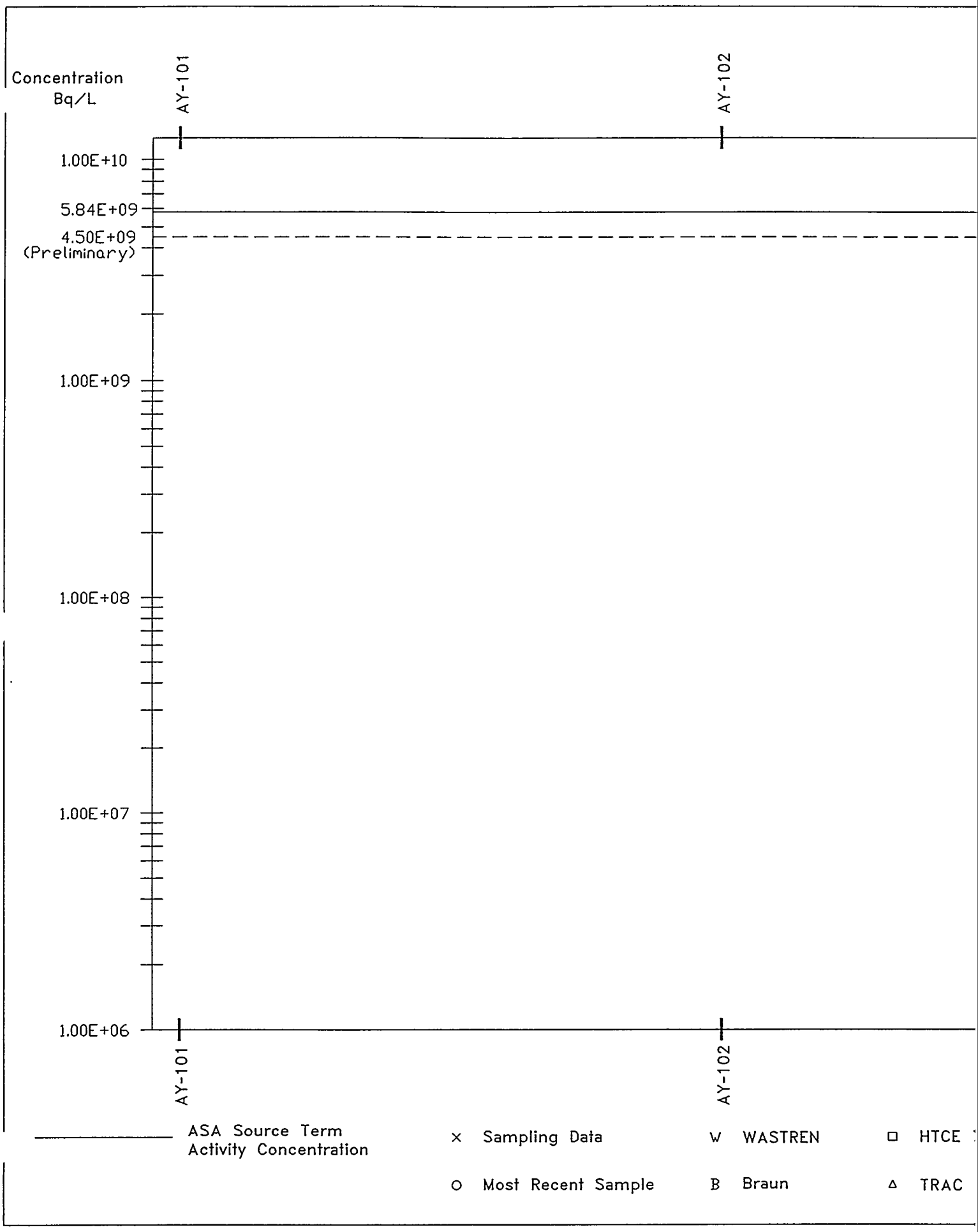
Extented tank lines represent Flamable Gas Watch List Tanks.

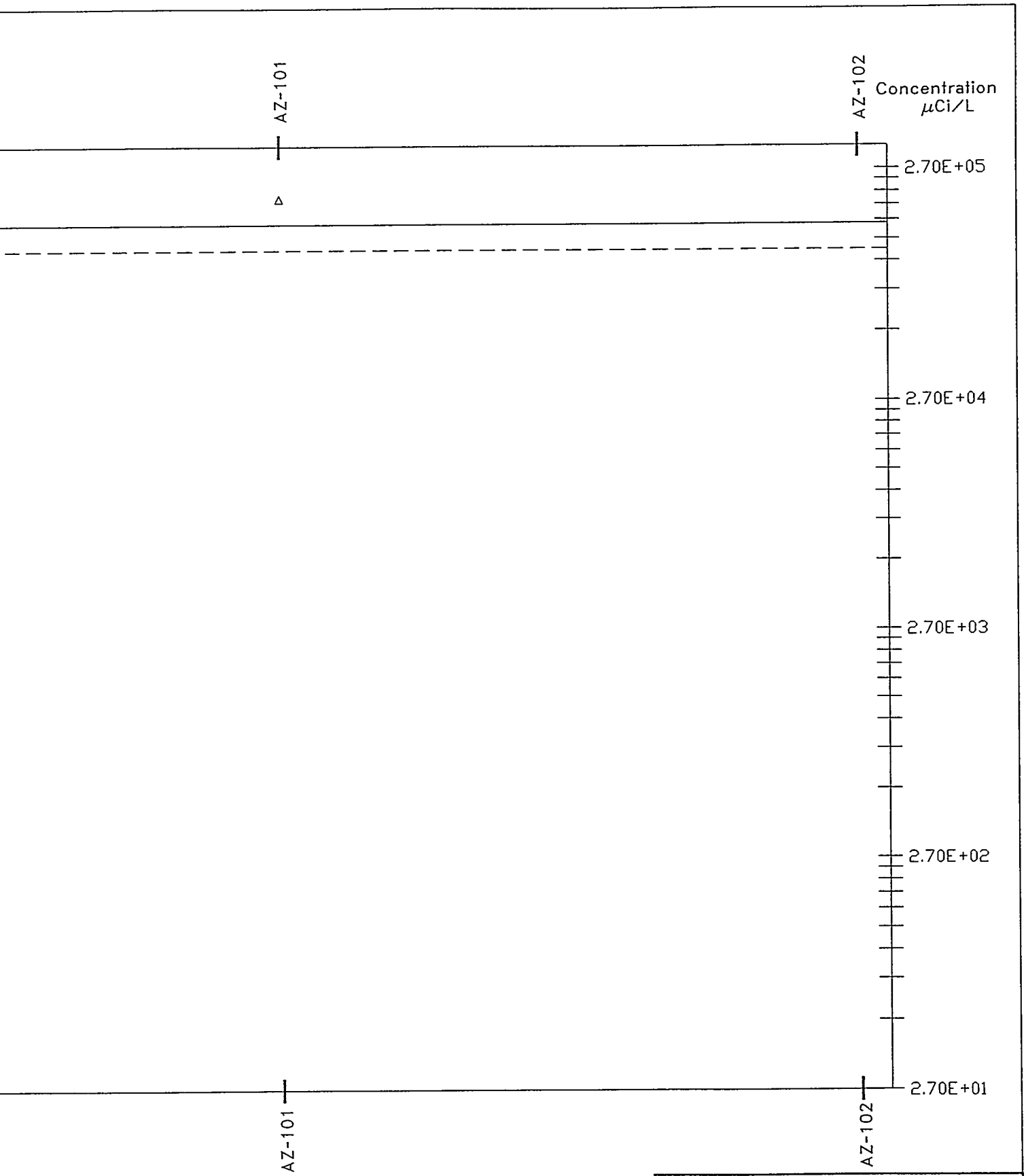
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Sr90 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR64 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+10
5.84E+09
4.50E+09
(Preliminary)
1.00E+09
1.00E+08
1.00E+07
1.00E+06
AY-101
AY-102
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□ HTCE
○ Most Recent Sample
B Braun
△ TRAC



ventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

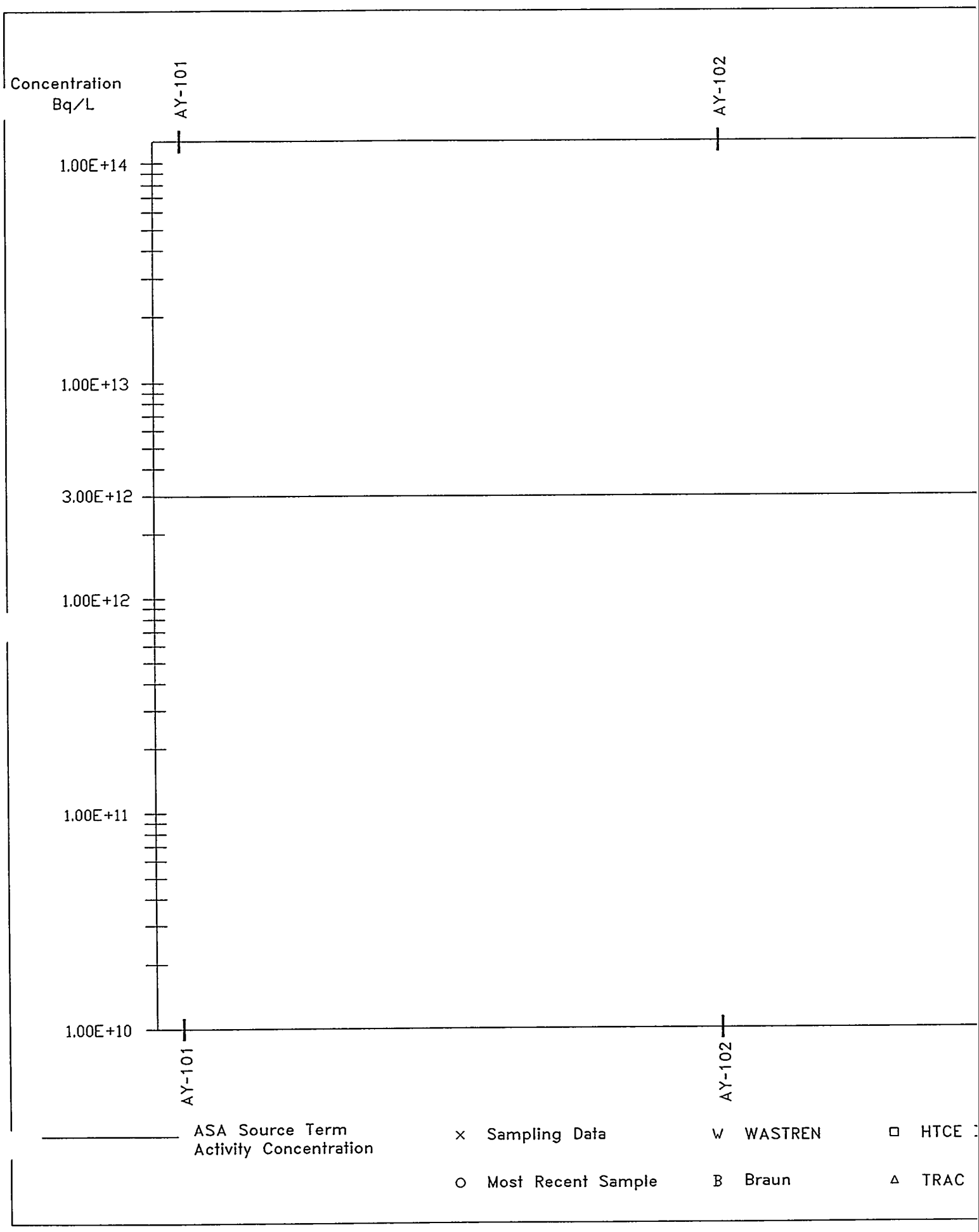
Extented tank lines represent Flamable Gas Watch List Tanks.

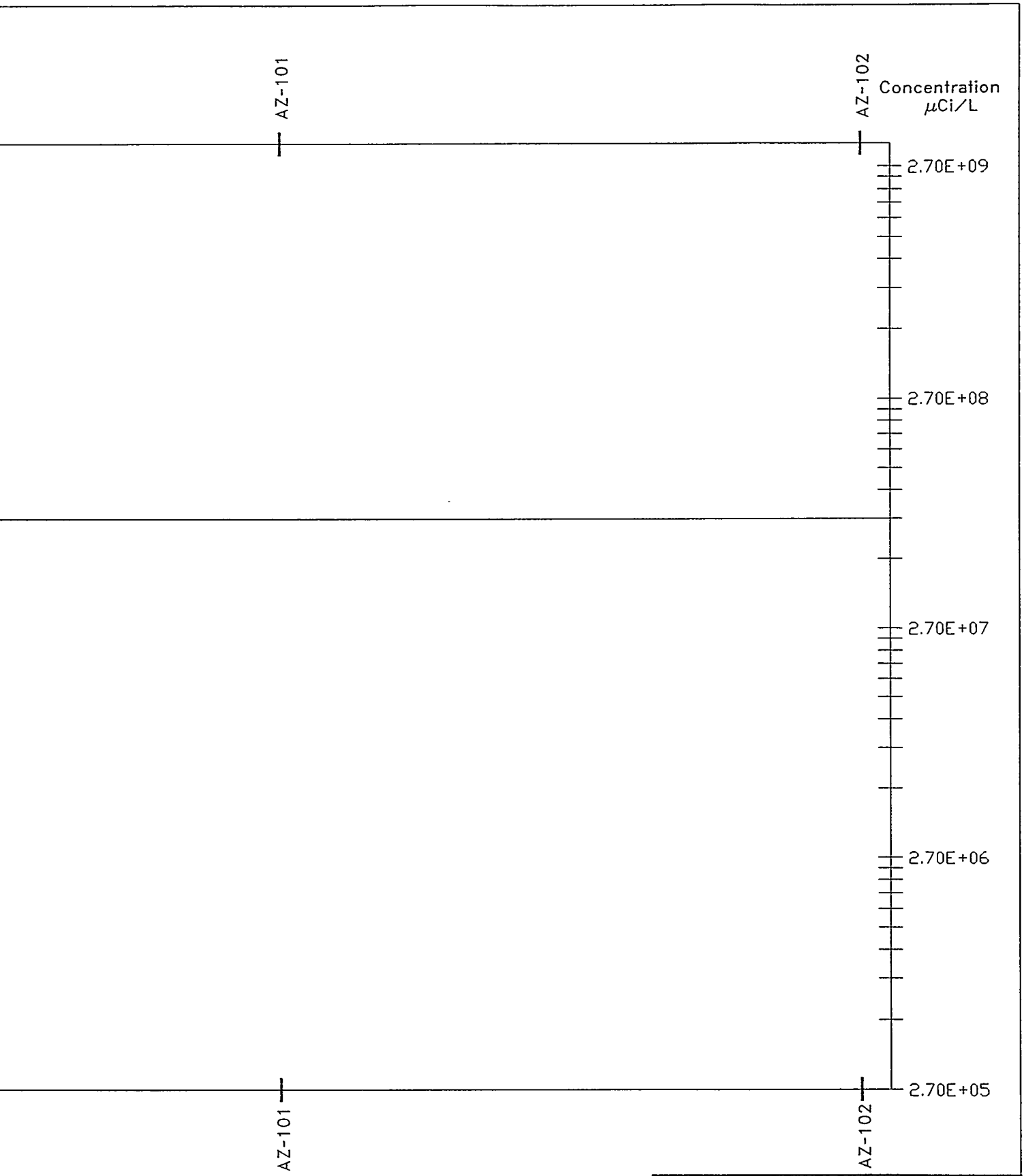
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Y90 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR65 | JOB NO. E01595 | Date 4/95


Concentration
Bq/L
AY-101
AY-102
1.00E+14
1.00E+13
3.00E+12
1.00E+12
1.00E+11
1.00E+10
AY-101
AY-102
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun
HTCE
TRAC



ventory

Conversion from Becquerel/ Liter to μCurie/Liter (μCi/L)=(Bq/L)/(3.7E+04)

Extented tank lines represent Flamable Gas Watch List Tanks.

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

AGING WASTE TANKS
Y90 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CR66 | JOB NO. E01595 | Date 4/95

APPENDIX B

Chemical Analyte Plots

Scatter Plot Symbols and Concentration Information

The symbols used on the scatter plots for the respective sample data sources are defined below:

o	-	most recent (highest value if many on that date) raw data per tank for that constituent
x	-	all other raw data; all other data from the WHC Characterization library, TCD, 241-B-110 and 241-U-110 core information
□	-	HTCE Inventory data, only available for a select number of Single-Shell Tank solid radionuclides and chemical analytes
Δ	-	TRAC data, only those points that are above the ASA Source Term Activity Concentration
B	-	Tank Sample Analysis Datafile (TSAD) (Braun Data)
W	-	WASTREN data
———	-	ASA Source Term Activity Concentration, or revised ASA Source Term Activity Concentration if the value has changed due to panel review
- - - - - - -	-	Preliminary ASA, Preliminary ASA Source Term Activity Concentration (based on WASTREN data)

The unit of concentration for the chemical plots is microgram/liter (μg/L). Two different units of concentration are shown on the radionuclide plots, Becquerel/liter (Bq/L) and microcurie/liter (μCi/L). Note that the two axes do not show independent logarithmic scales, but a straight conversion from Bq/L to μCi/L. The conversion from Bq/L to μCi/L is given below, and is also given in the legend section of the plot.

$$\mu Ci/L = \frac{Bq/L}{3.7E+4}$$

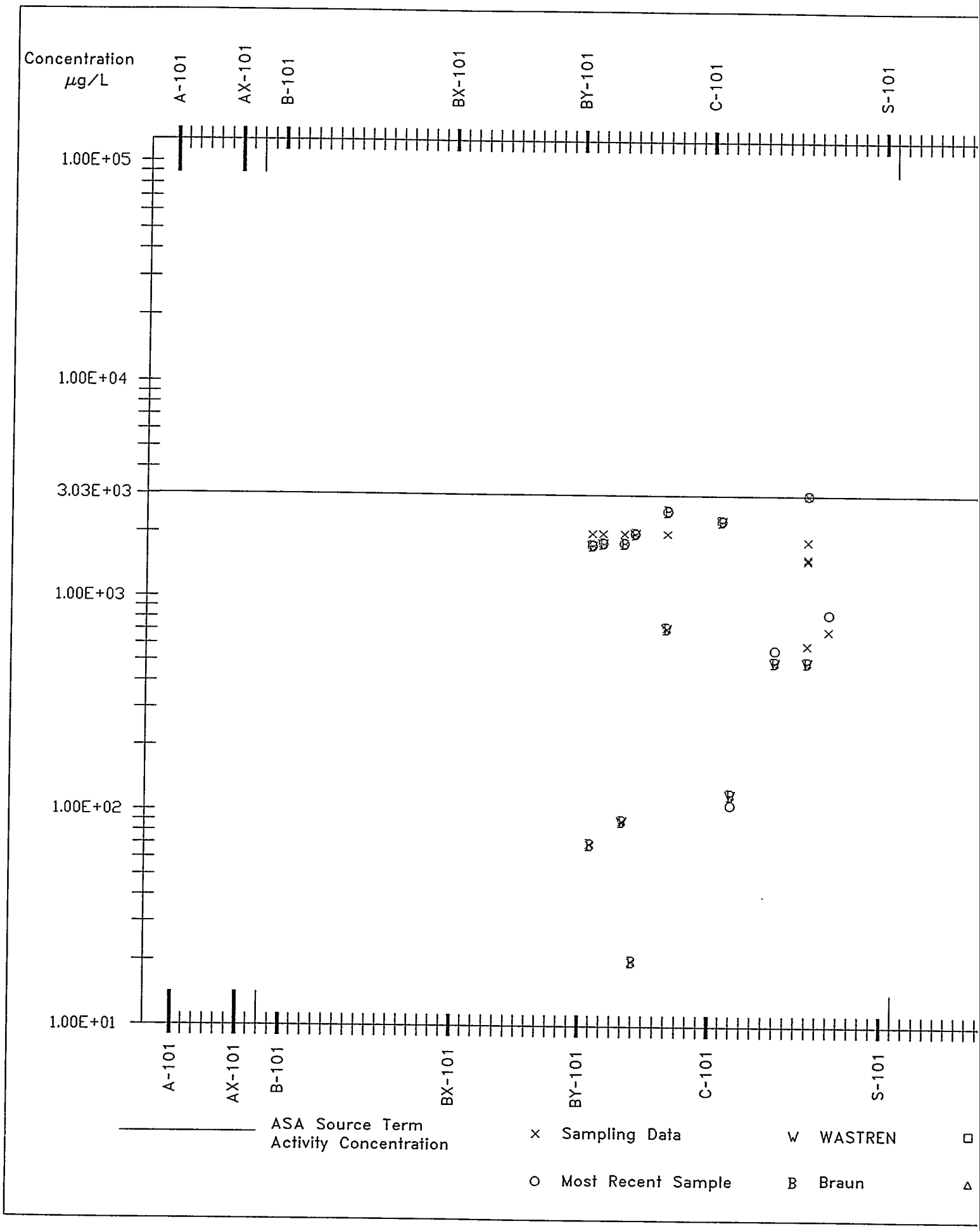
Delineated Flammable Gas Watch List Tanks

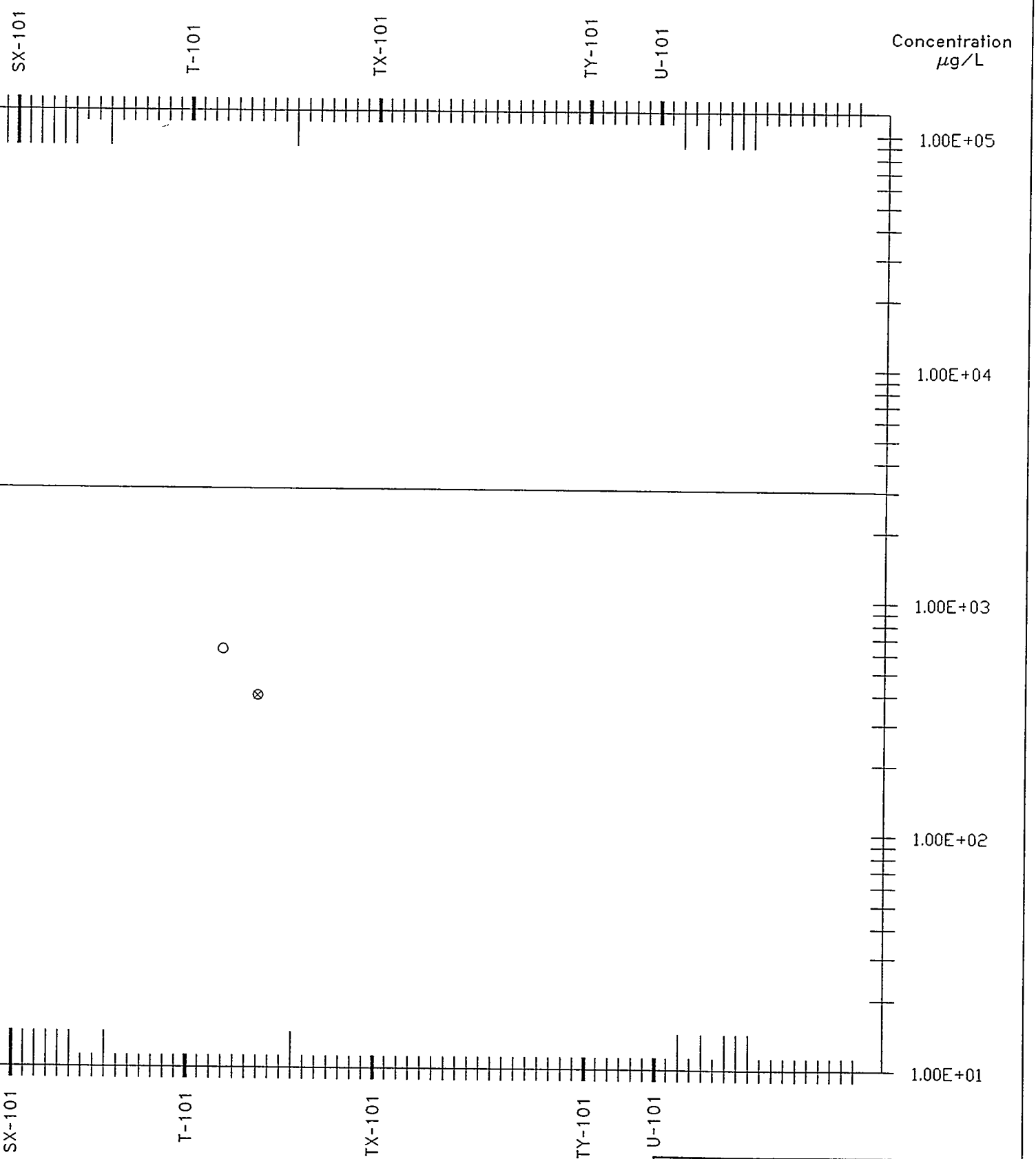
The Flammable Gas Watch List tanks taken from WHC Waste Tank Summary for Month Ending September 30, 1994 (Hanlon, 1994) are indicated on the scatter plots with extended tank index marks. A list of these is given below.

Flammable Gas Watch List Tanks			
Single-Shell Tanks			Double-Shell Tanks
241-A-101	241-SX-102	241-U-103	241-AN-103
241-AX-101	241-SX-103	241-U-105	241-AN-104
241-AX-103	241-SX-104	241-U-107	241-AN-105
241-S-102	241-SX-105	241-U-108	241-AW-101
241-S-111	241-SX-106	241-U-109	241-SY-101
241-S-112	241-SX-109		241-SY-103
241-SX-101	241-T-110		

A list of the 11 Radionuclide and 24 Chemical Analyte Scatter Plots (in order of appearance) is given below.

Radionuclide and Chemical Analyte Scatter Plots			
Radionuclides		Chemical Analytes	
Am-241	Americium-241	As - Arsenic	Na - Sodium
Co-60	Cobalt-60	Ba - Barium	NaOH - Sodium Hydroxide
Cs-137	Cesium-137	Be - Beryllium	Nd - Neodymium
Cm-244	Curium-244	Ca - Calcium	NH3 - Ammonia
Eu-154	Europium-154	Cd - Cadmium	Sb - Antimony
Np-237	Neptunium-237	Ce - Cerium	Se - Selenium
Pu-238	Plutonium-238	CN - Cyanide	Sr - Strontium
Pu-239/240	Plutonium-239/240	Co - Cobalt	Te - Tellurium
Pu-241	Plutonium-241	Cr+3 - Chromium $^{+3}$	Tl - Thallium
Sr-89/90	Strontium-89/90	Cr+6 - Chromium $^{+6}$	U - Uranium
Y-90	Yttrium-90	Dy - Dysprosium	V - Vanadium
		Hg - Mercury	
		La - Lanthanum	


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+05
1.00E+04
3.03E+03
1.00E+03
1.00E+02
1.00E+01
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

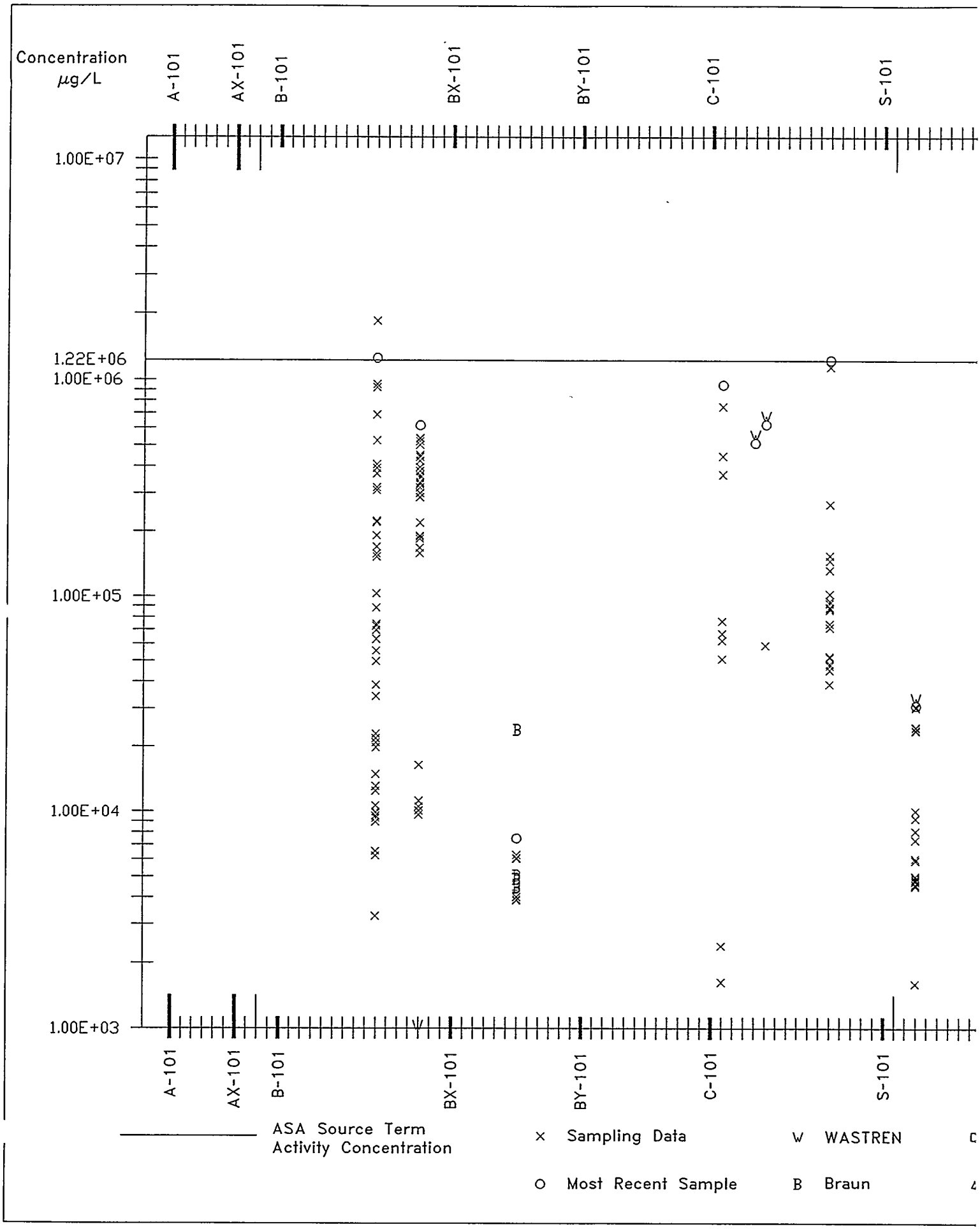
Extented tank lines represent Flamable Gas Watch List Tanks.

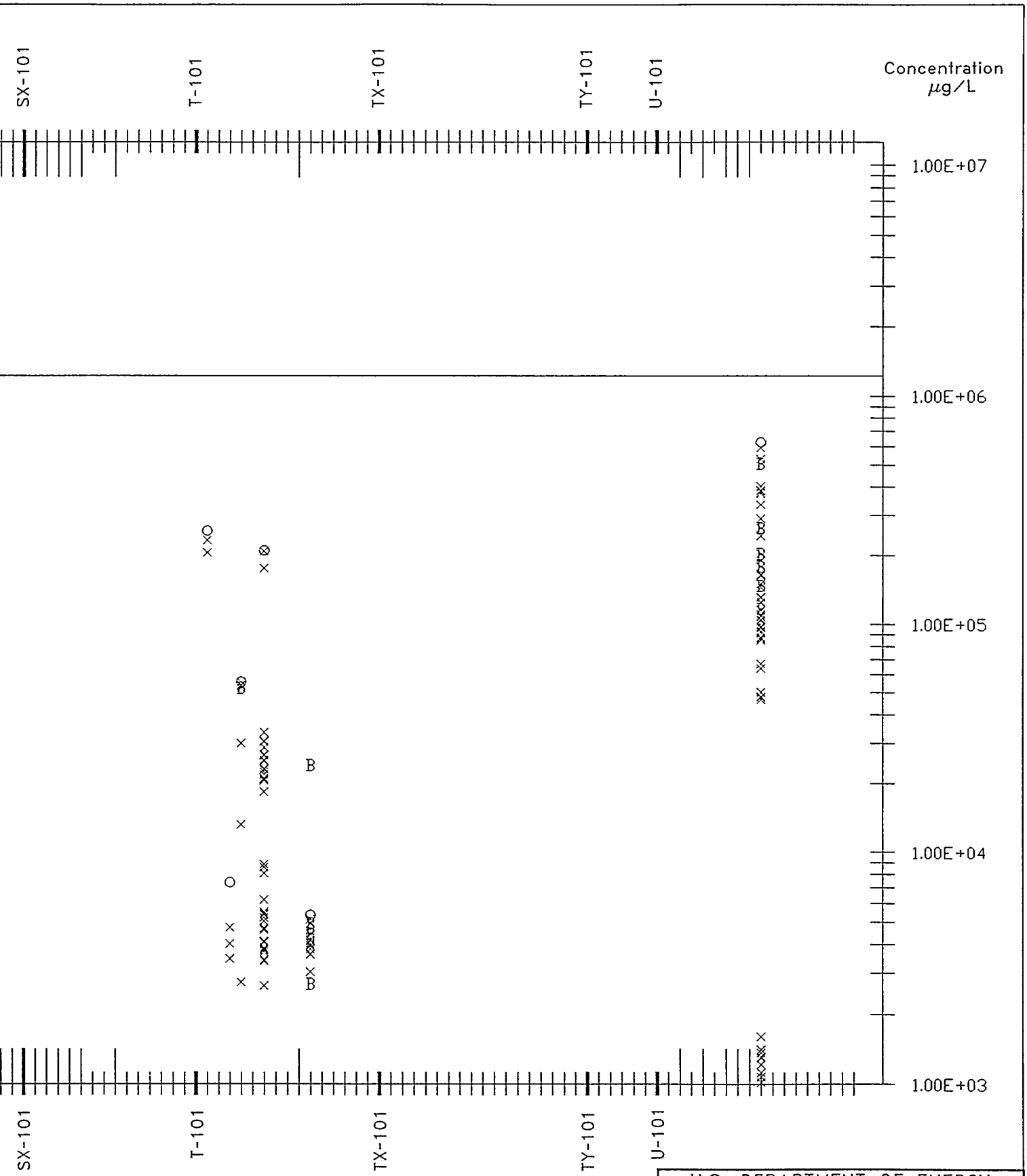
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
As - Arsenic Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC01 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+07
1.22E+06
1.00E+06
1.00E+05
1.00E+04
1.00E+03
B
ASA Source Term
Activity Concentration
× Sampling Data
O Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

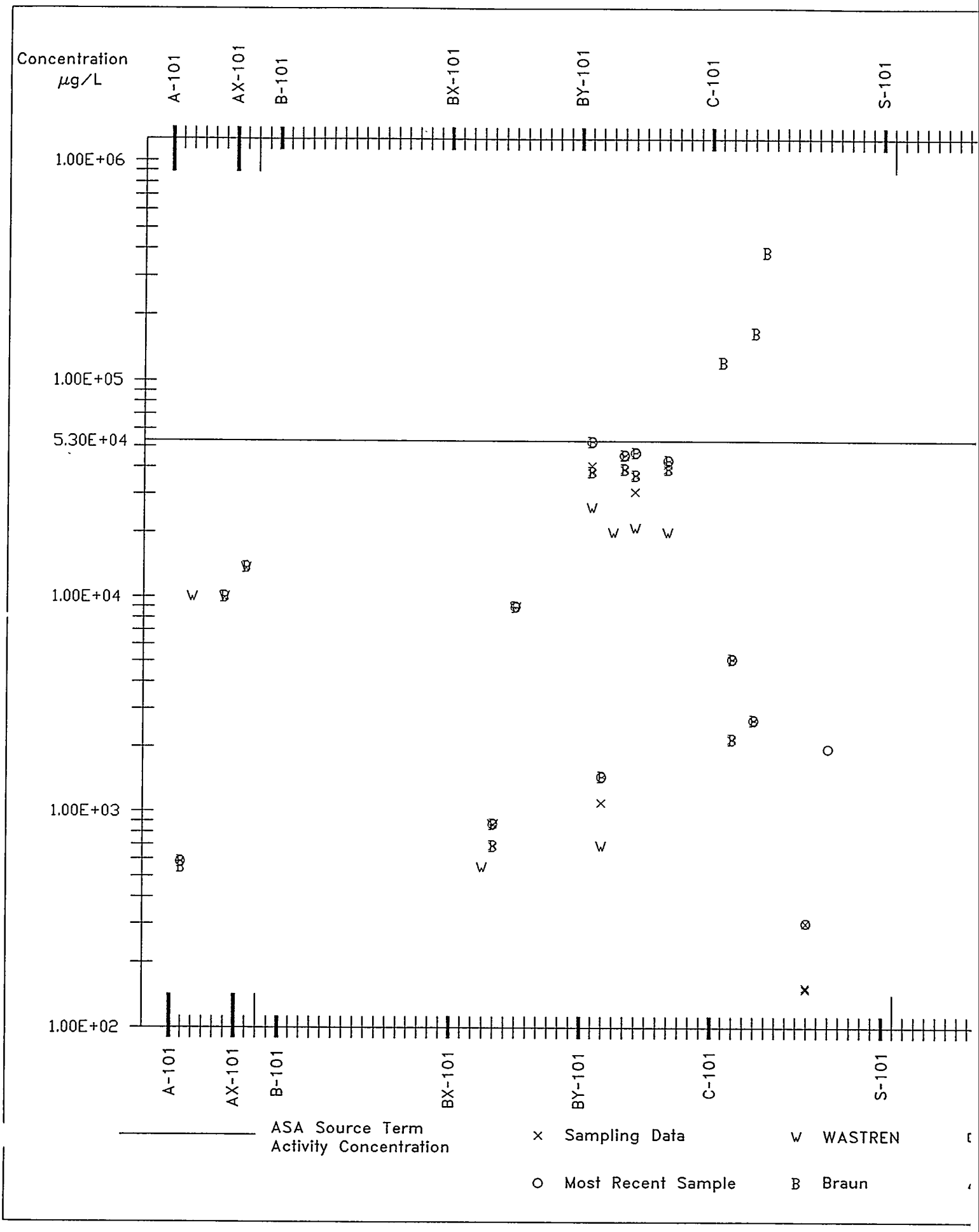
Extented tank lines represent Flamable Gas Watch List Tanks.

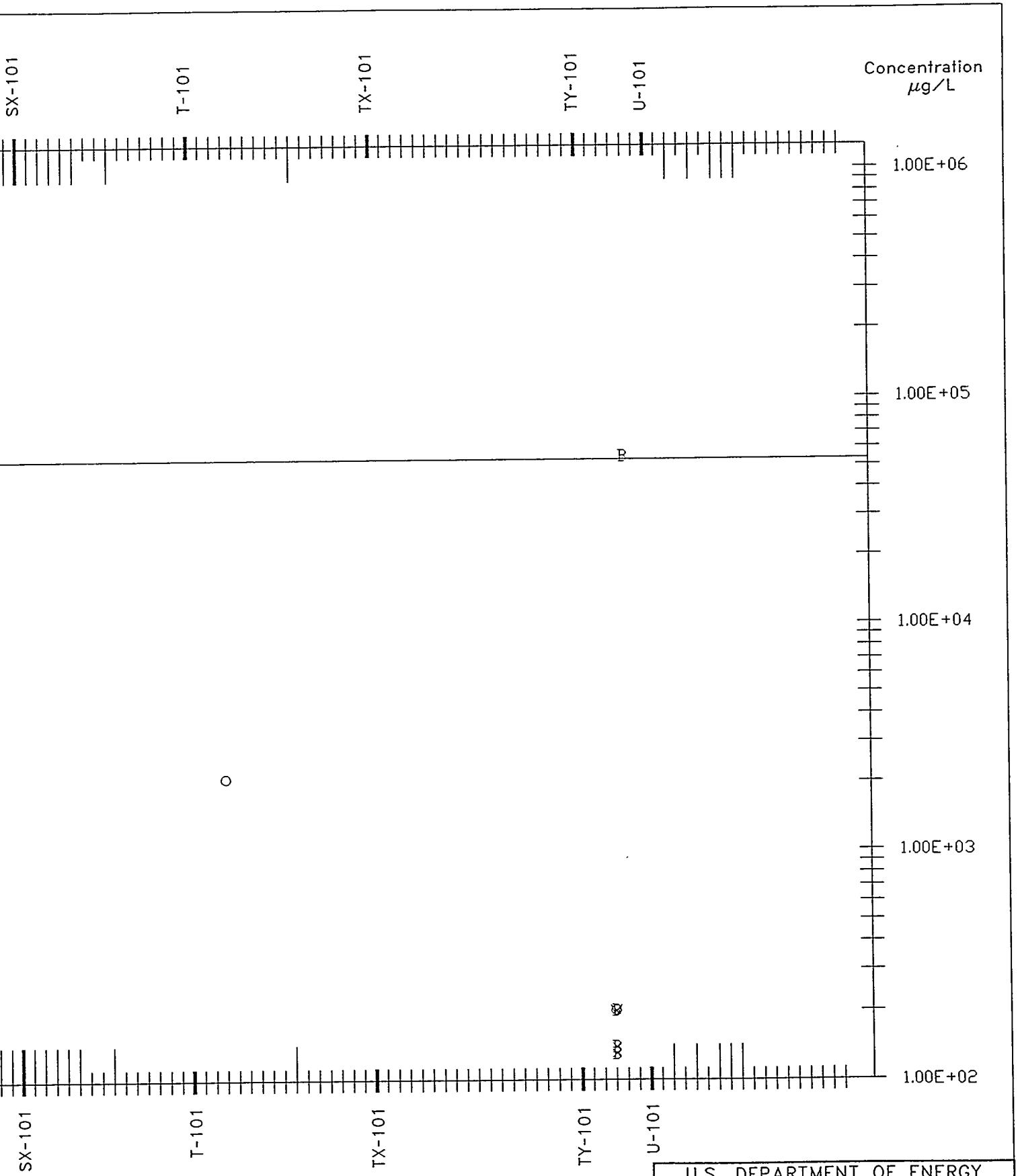
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
As - Arsenic Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC02 | JOB NO E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+06
1.00E+05
5.30E+04
1.00E+04
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

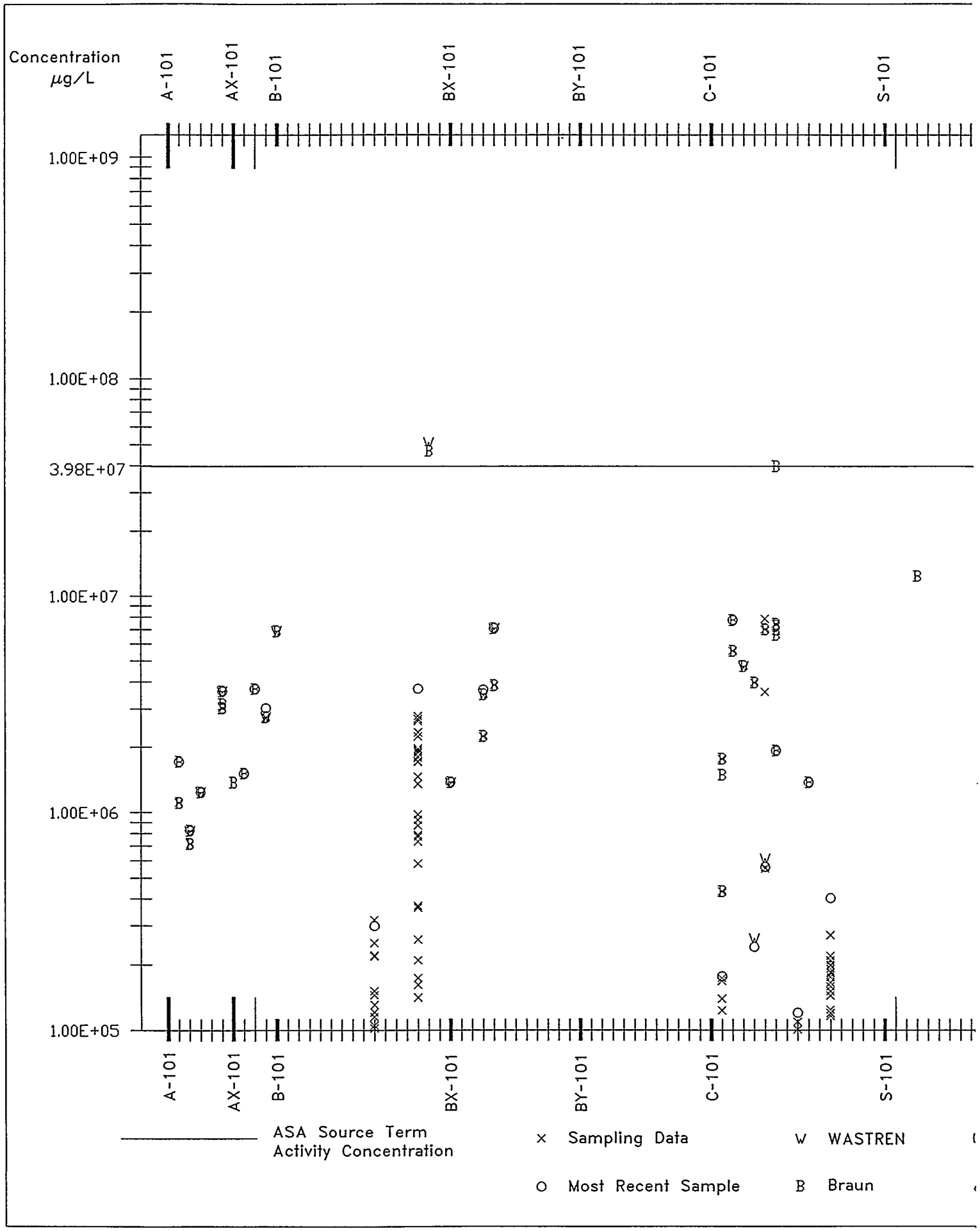
Extented tank lines represent Flamable Gas Watch List Tanks.

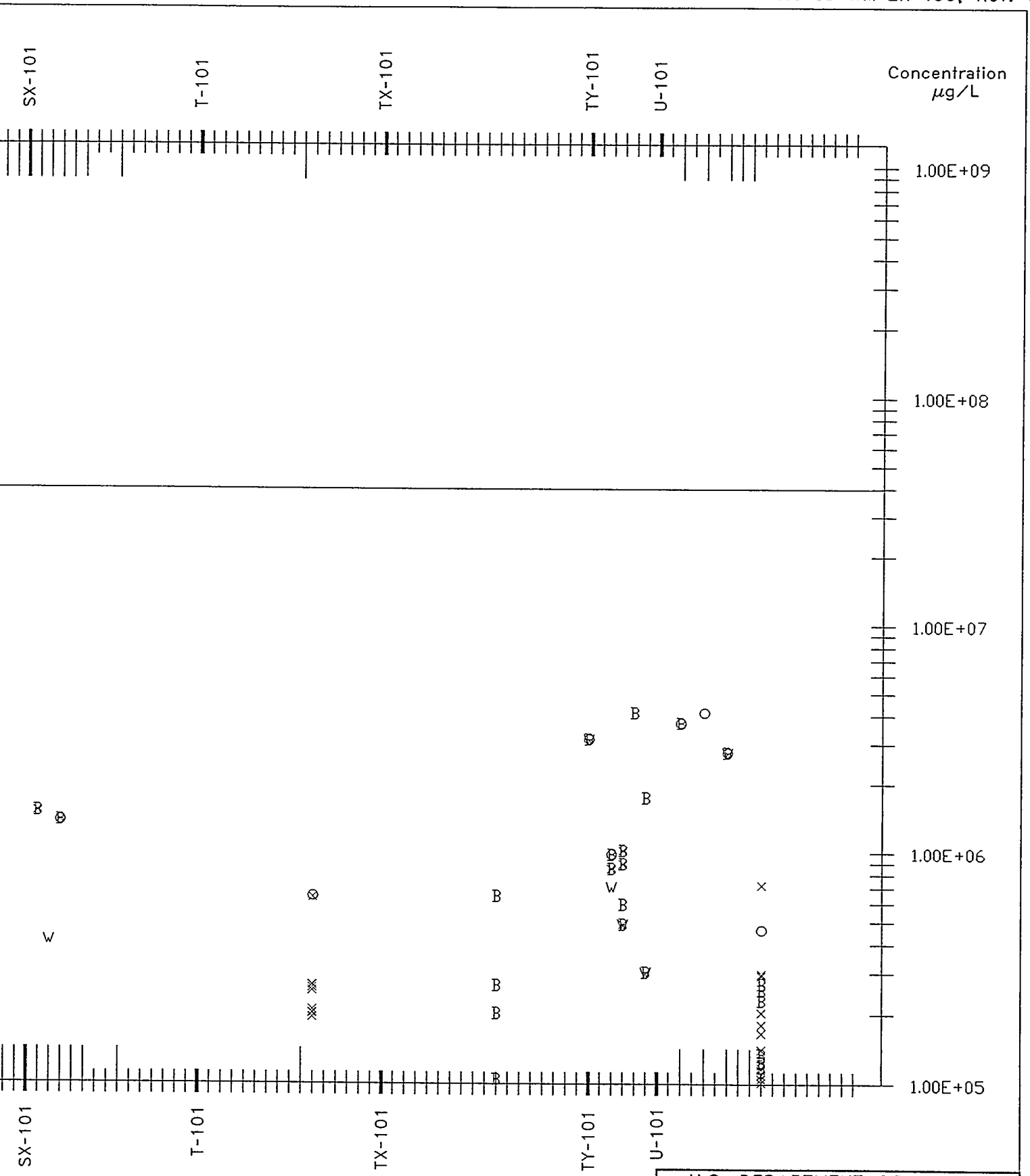
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Ba - Barium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CC03 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+09
1.00E+08
3.98E+07
1.00E+07
1.00E+06
1.00E+05
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

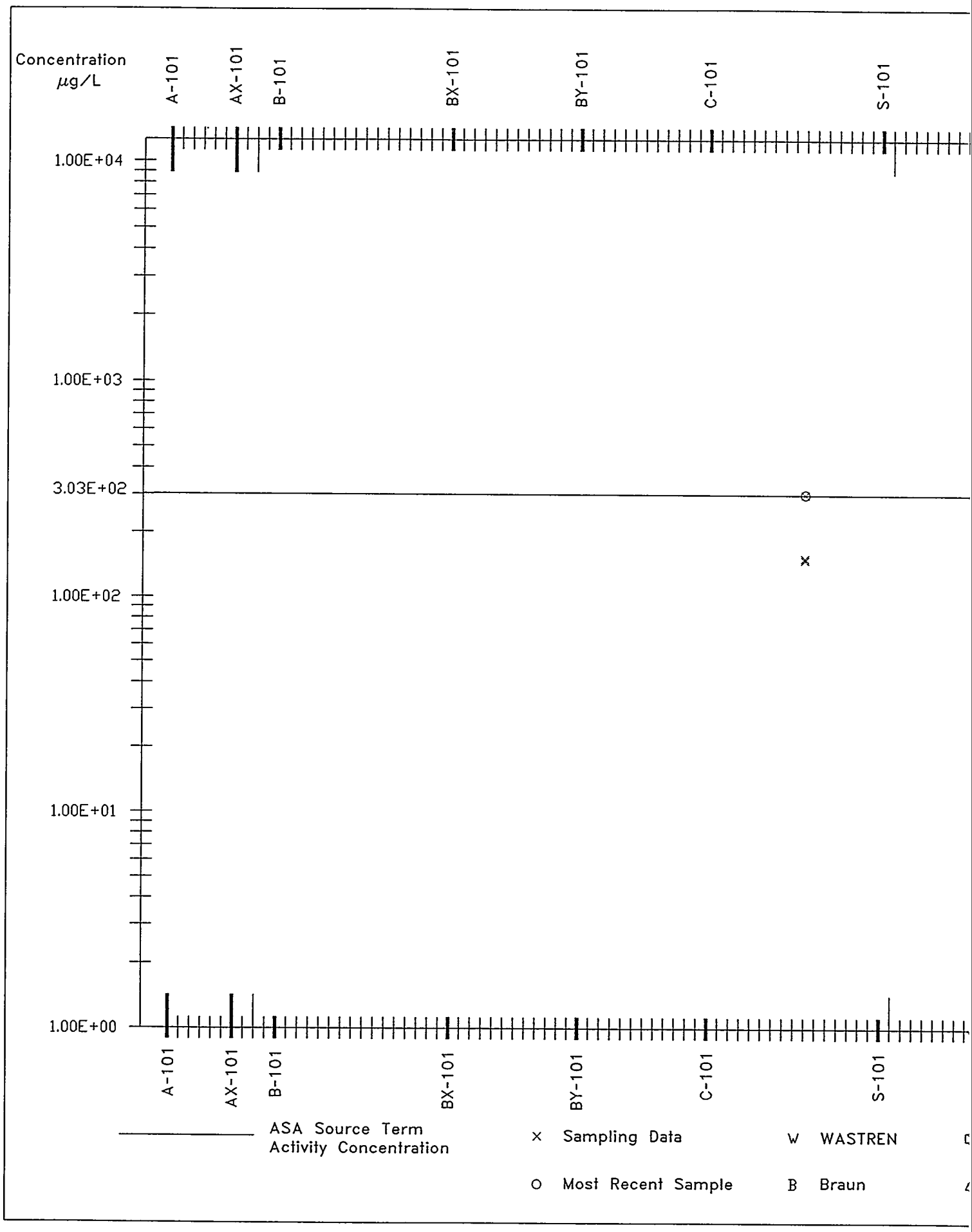
Extented tank lines represent Flamable Gas Watch List Tanks.

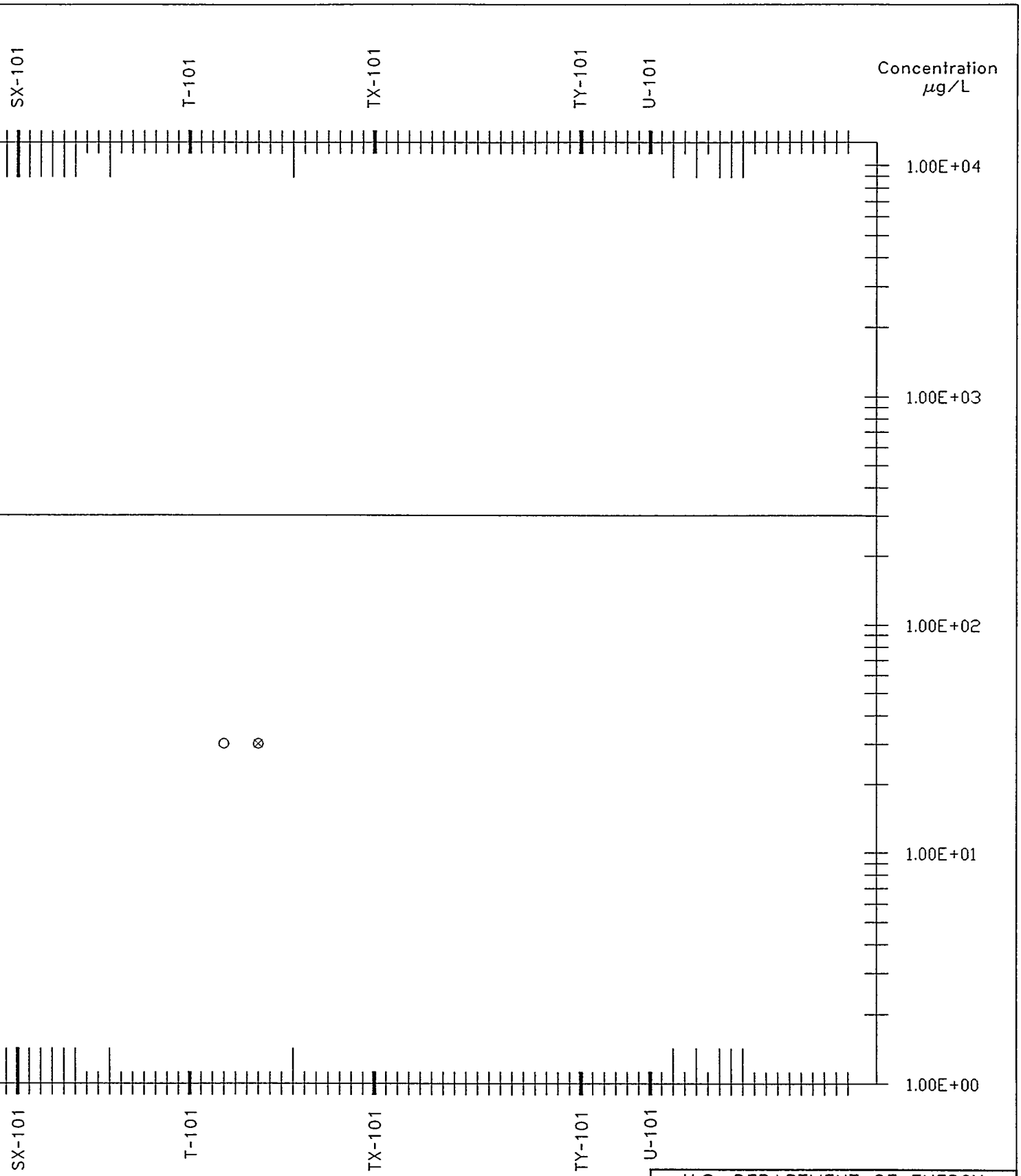
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Ba - Barium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC04 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+04
1.00E+03
3.03E+02
1.00E+02
1.00E+01
1.00E+00
ASA Source Term
Activity Concentration
× Sampling Data
O Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

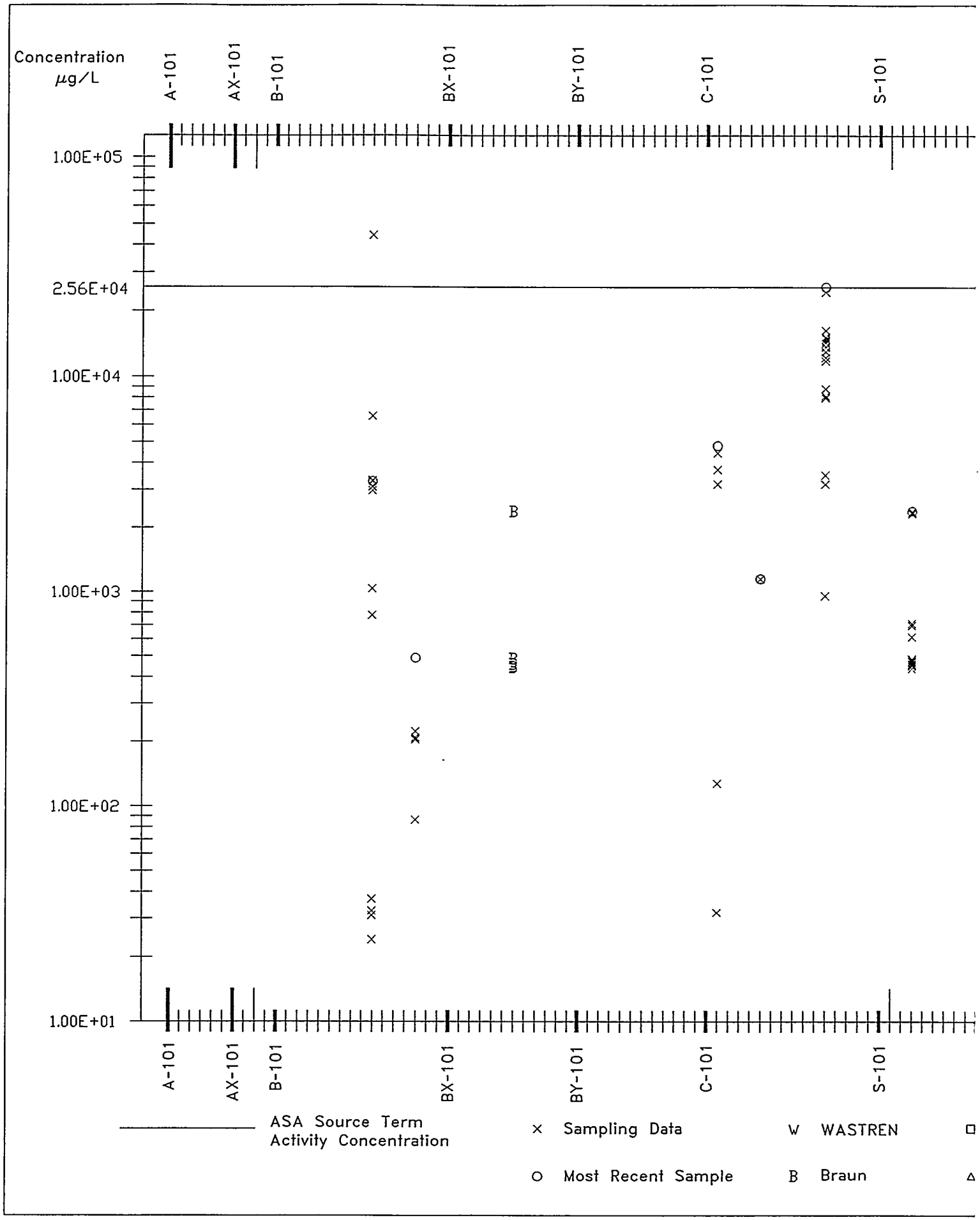
Extented tank lines represent Flamable Gas Watch List Tanks.

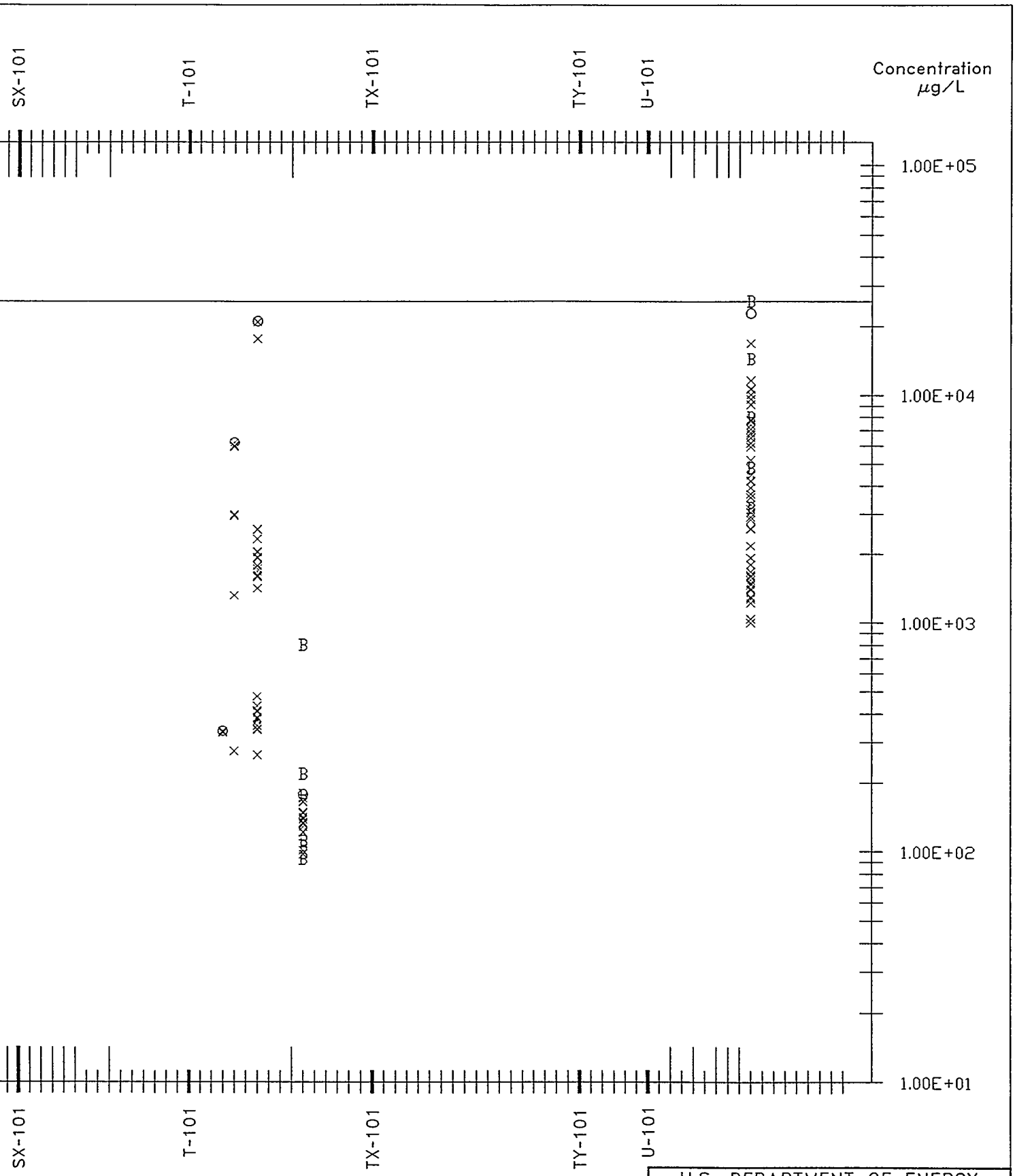
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Be - Beryllium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC05 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+05
2.56E+04
1.00E+04
1.00E+03
1.00E+02
1.00E+01
B
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

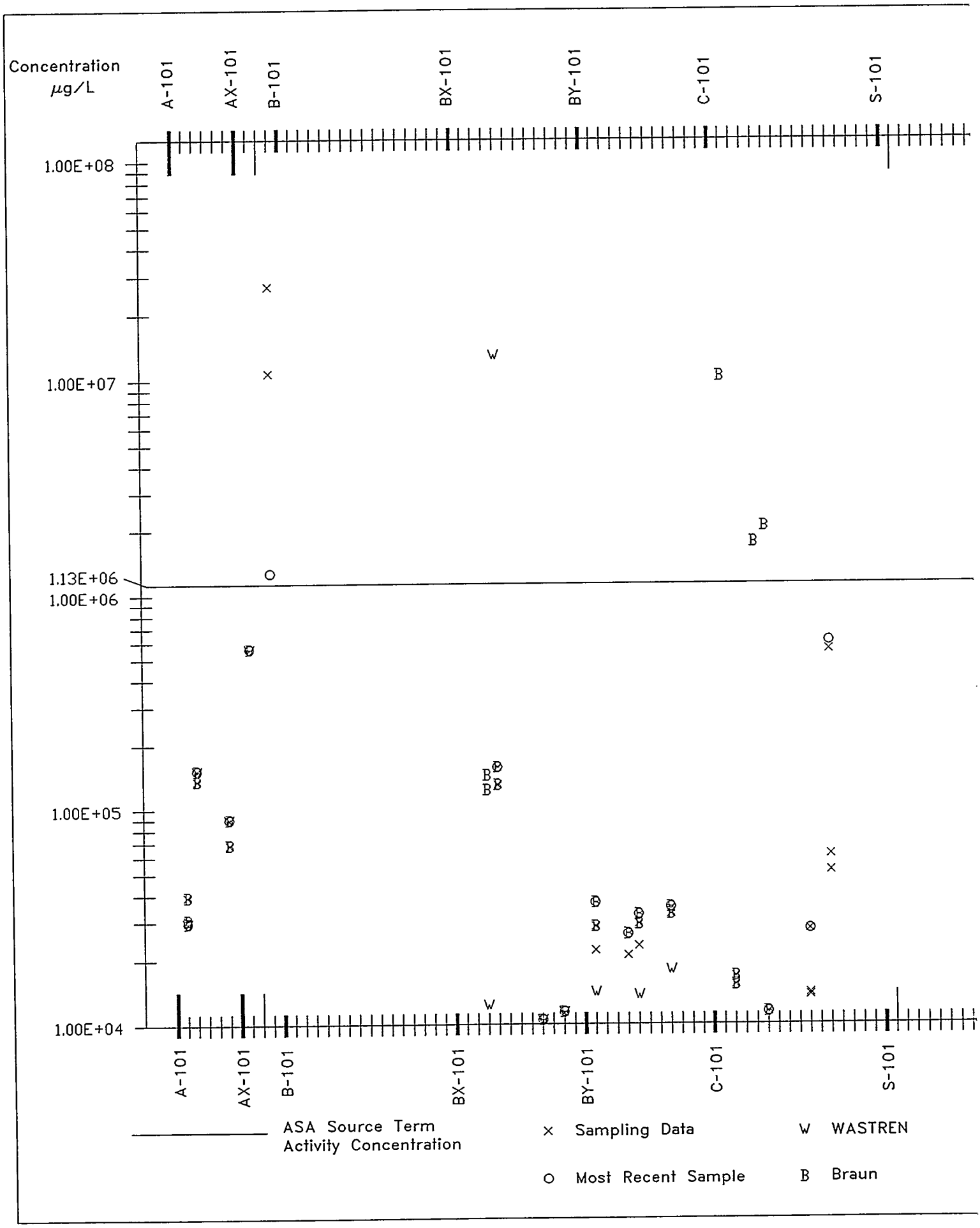
Extented tank lines represent Flamable Gas Watch List Tanks.

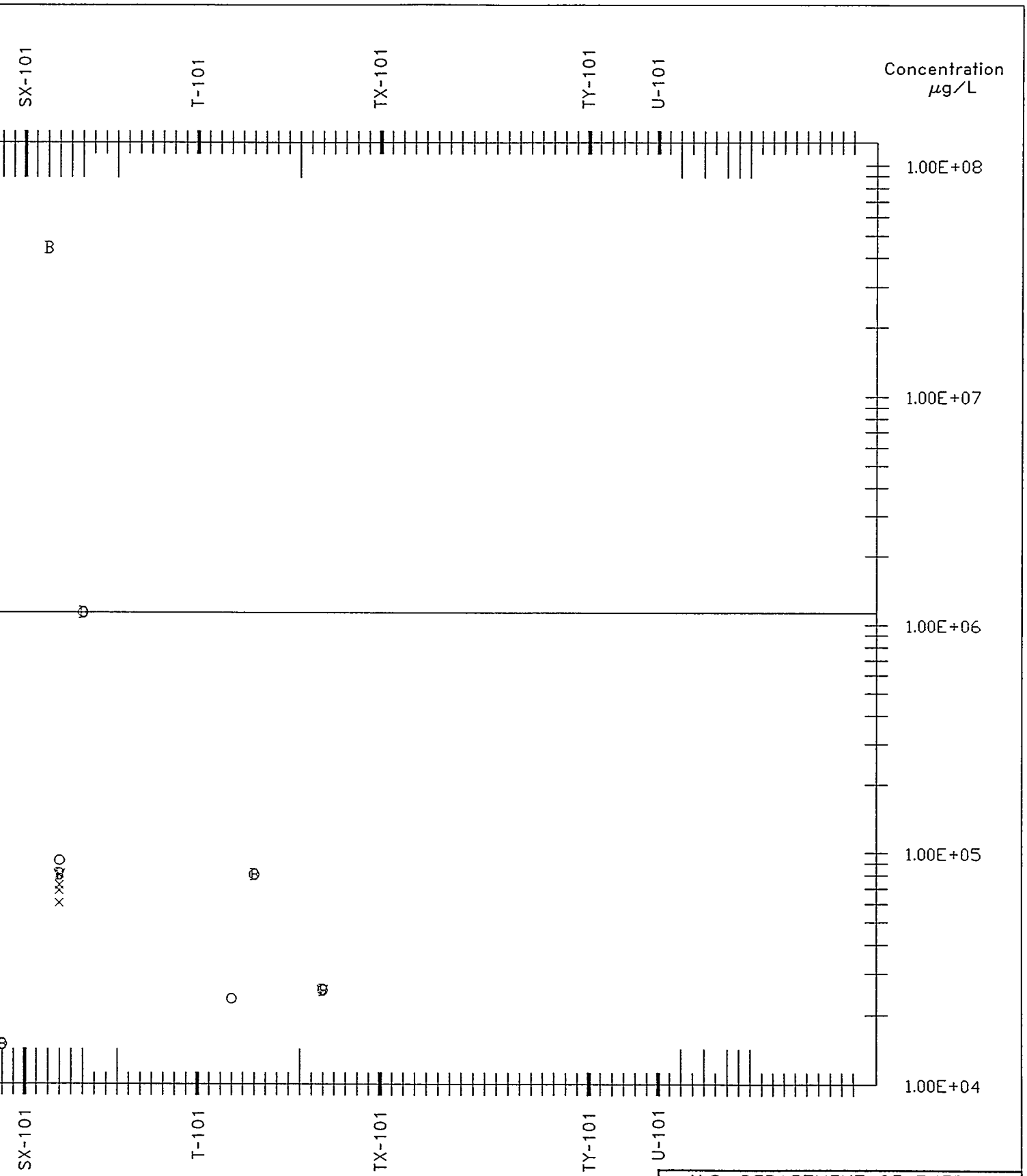
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Be - Beryllium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC06 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+08
1.00E+07
1.13E+06
1.00E+06
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

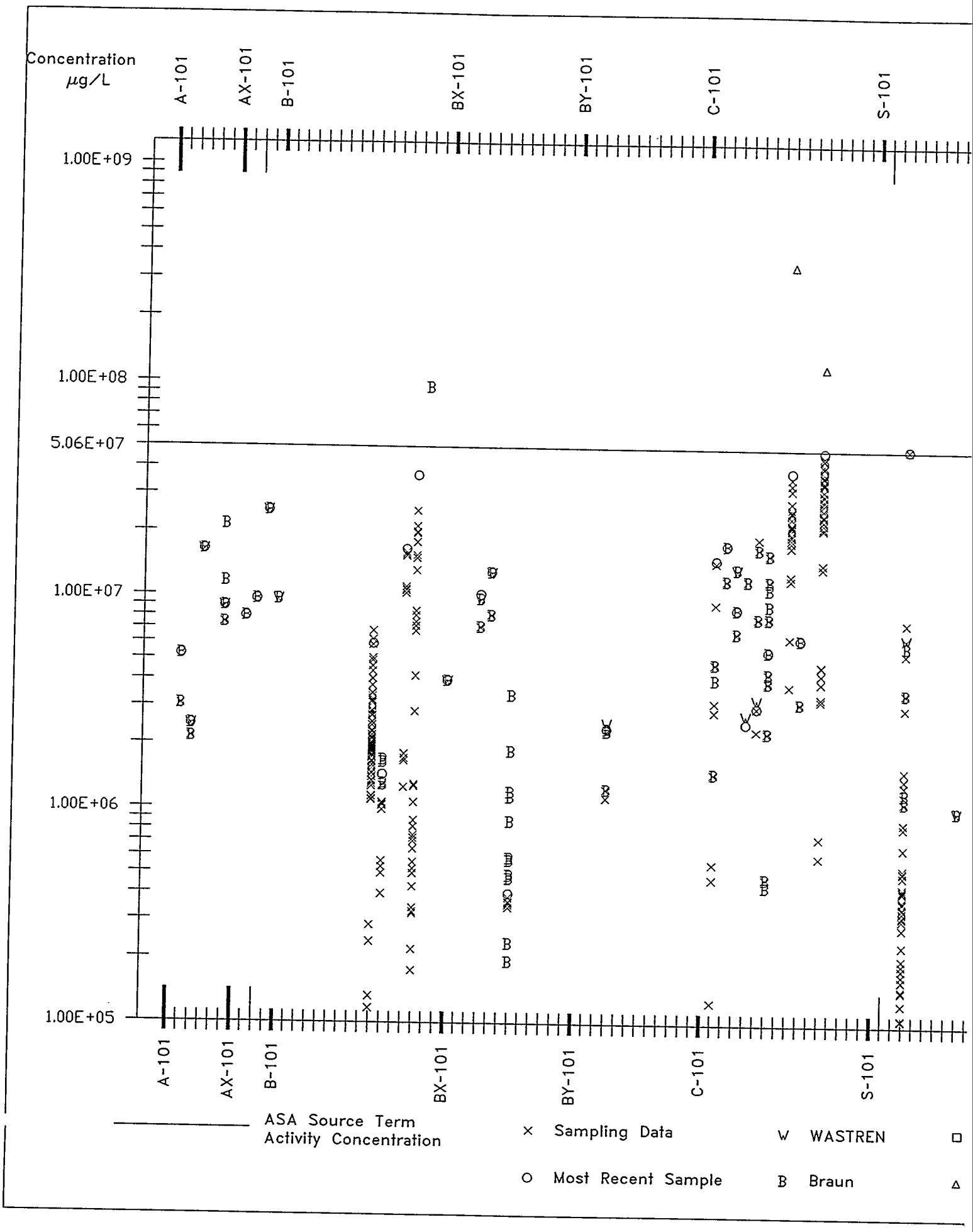
Extented tank lines represent Flamable Gas Watch List Tanks.

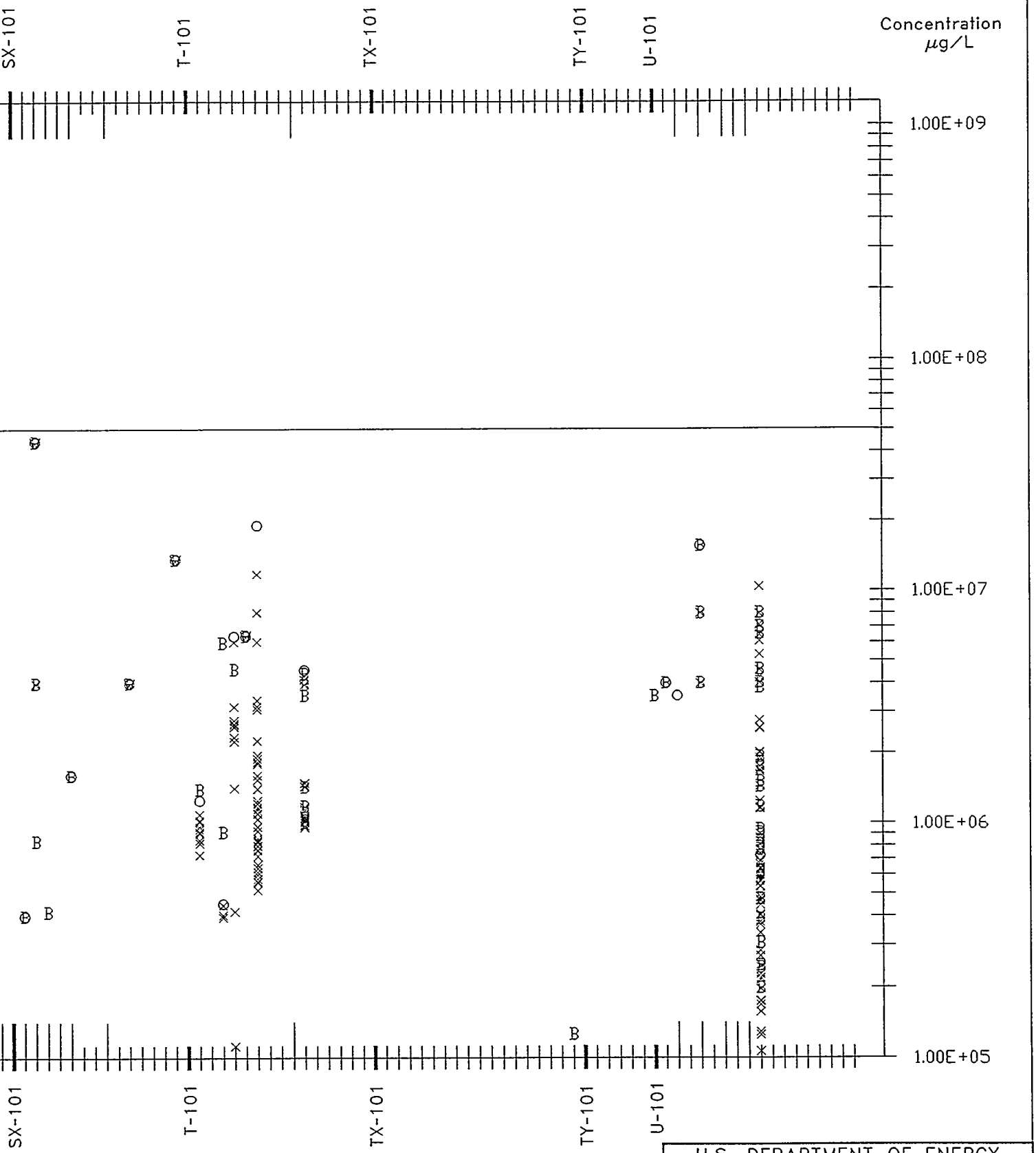
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Ca - Calcium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC07 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+09
1.00E+08
5.06E+07
1.00E+07
1.00E+06
1.00E+05
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

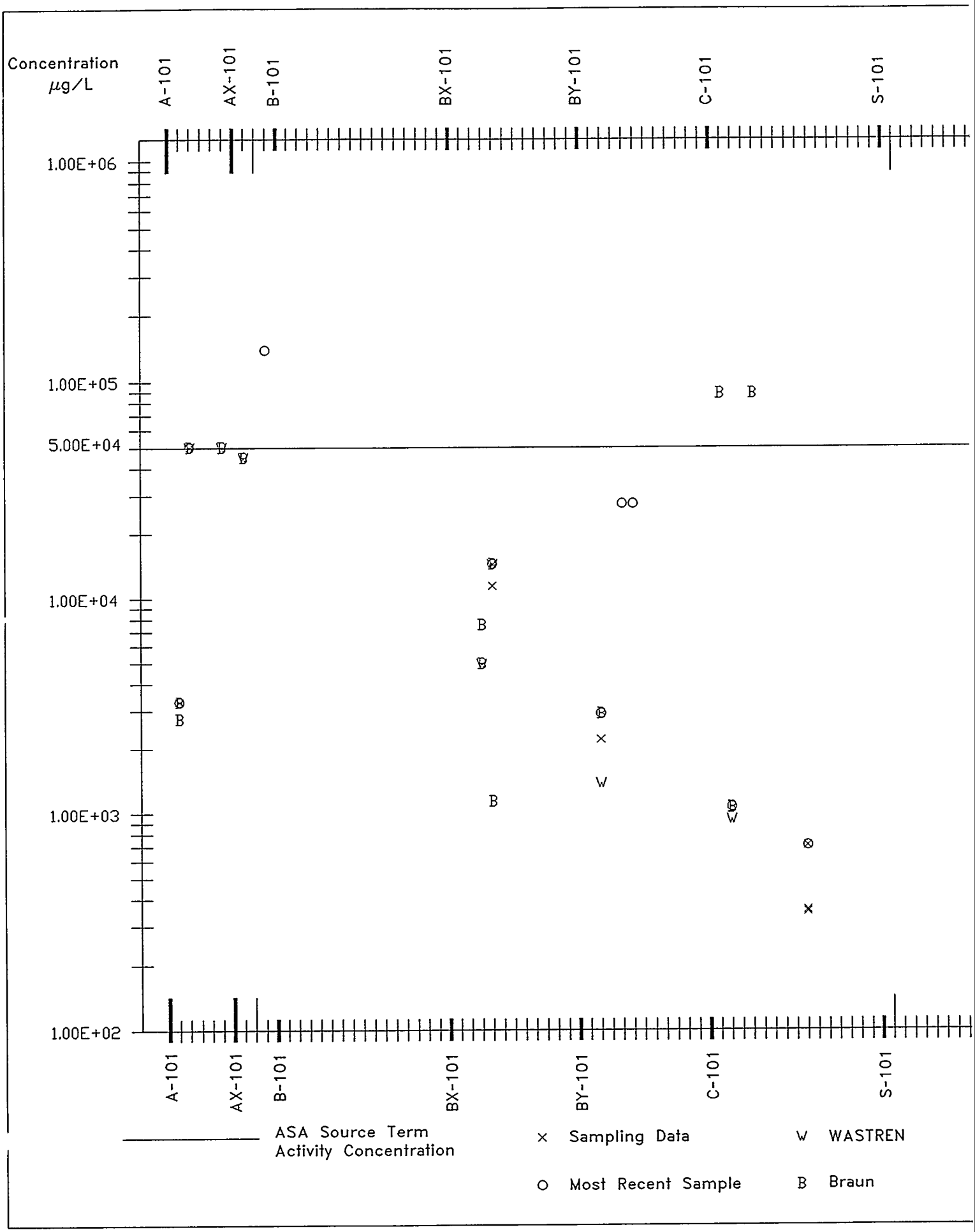
Extented tank lines represent Flamable Gas Watch List Tanks.

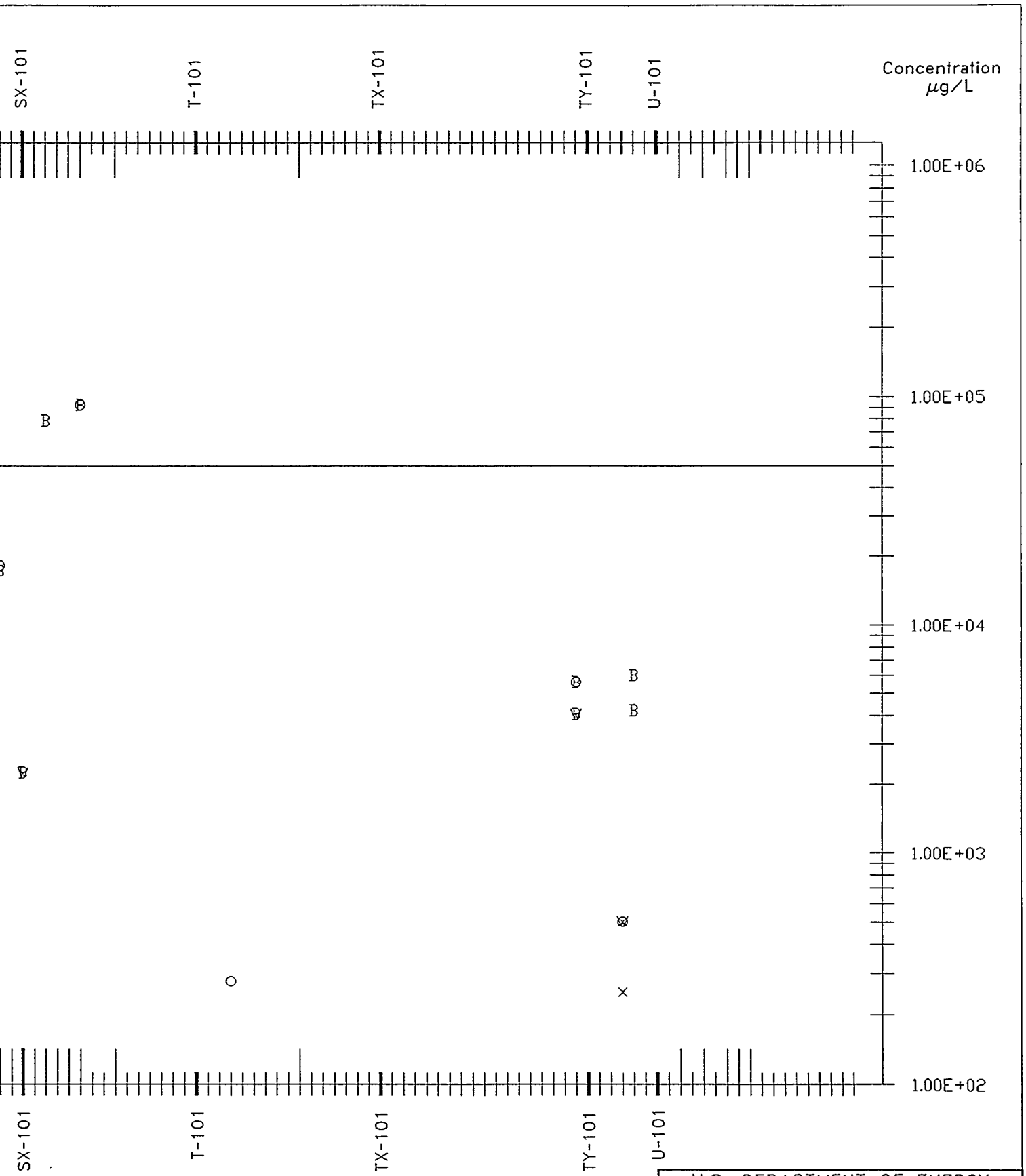
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Ca - Calcium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC08 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+06
1.00E+05
5.00E+04
1.00E+04
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

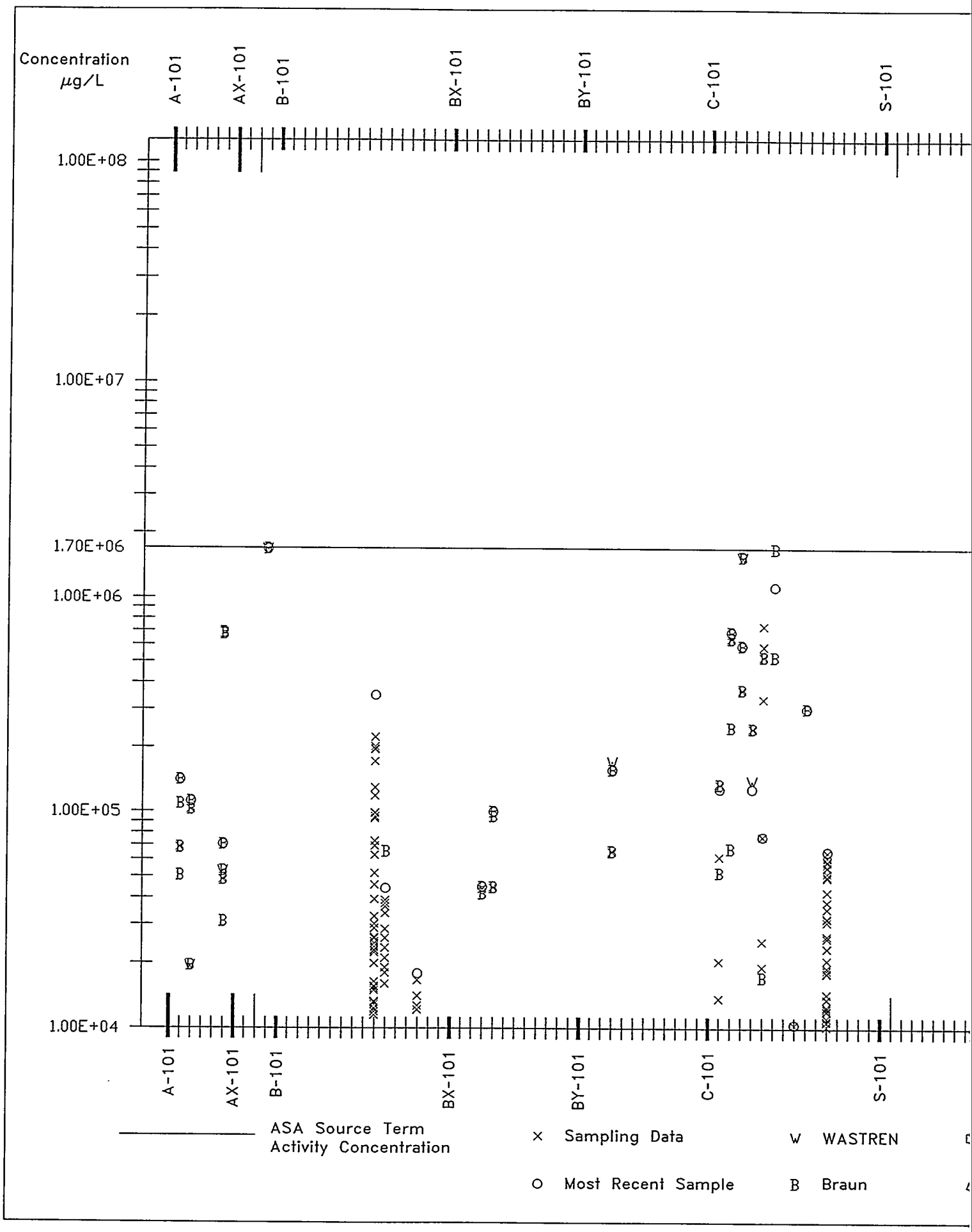
Extented tank lines represent Flamable Gas Watch List Tanks.

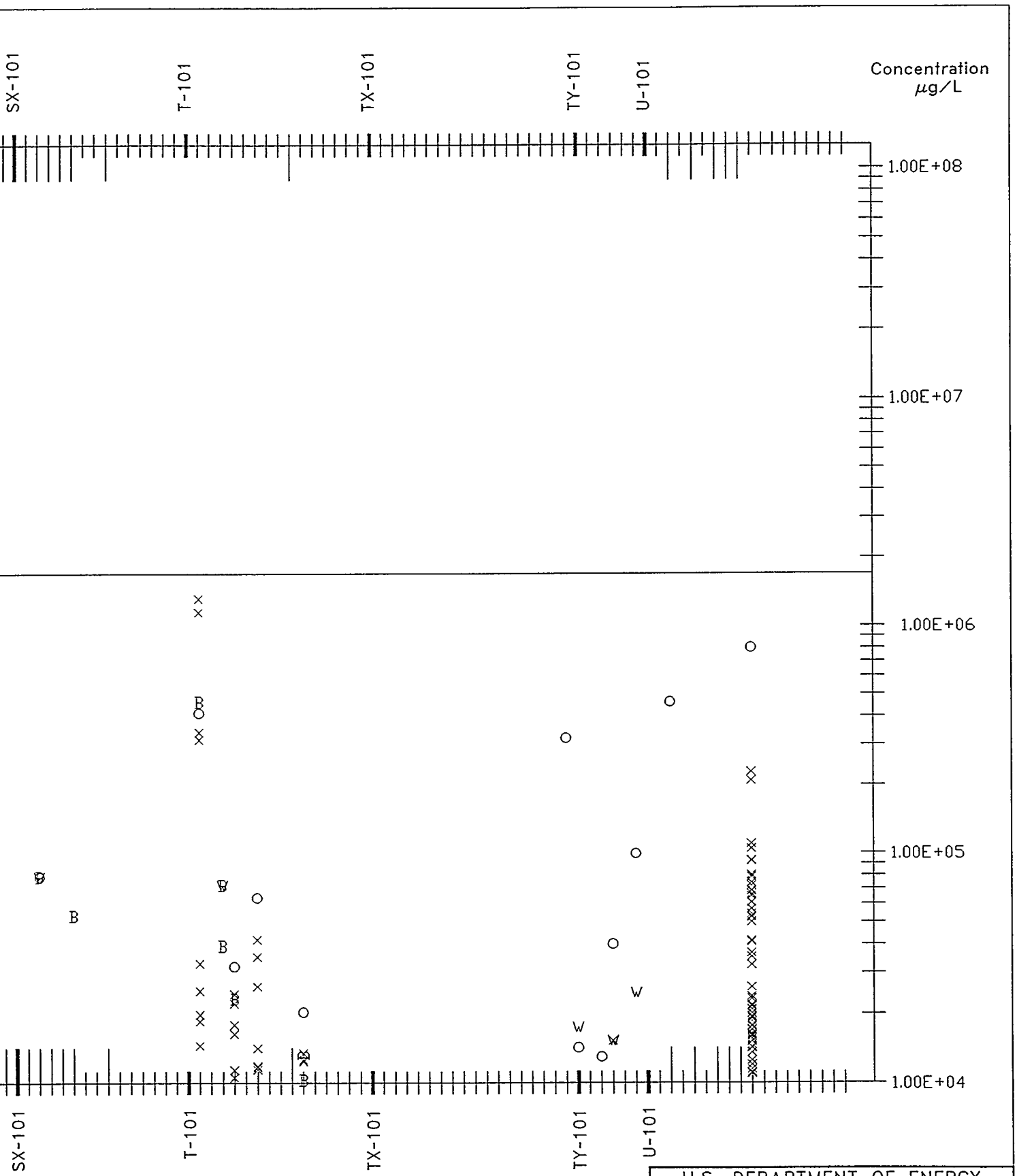
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Cd - Cadmium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC09 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+08
1.00E+07
1.70E+06
1.00E+06
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

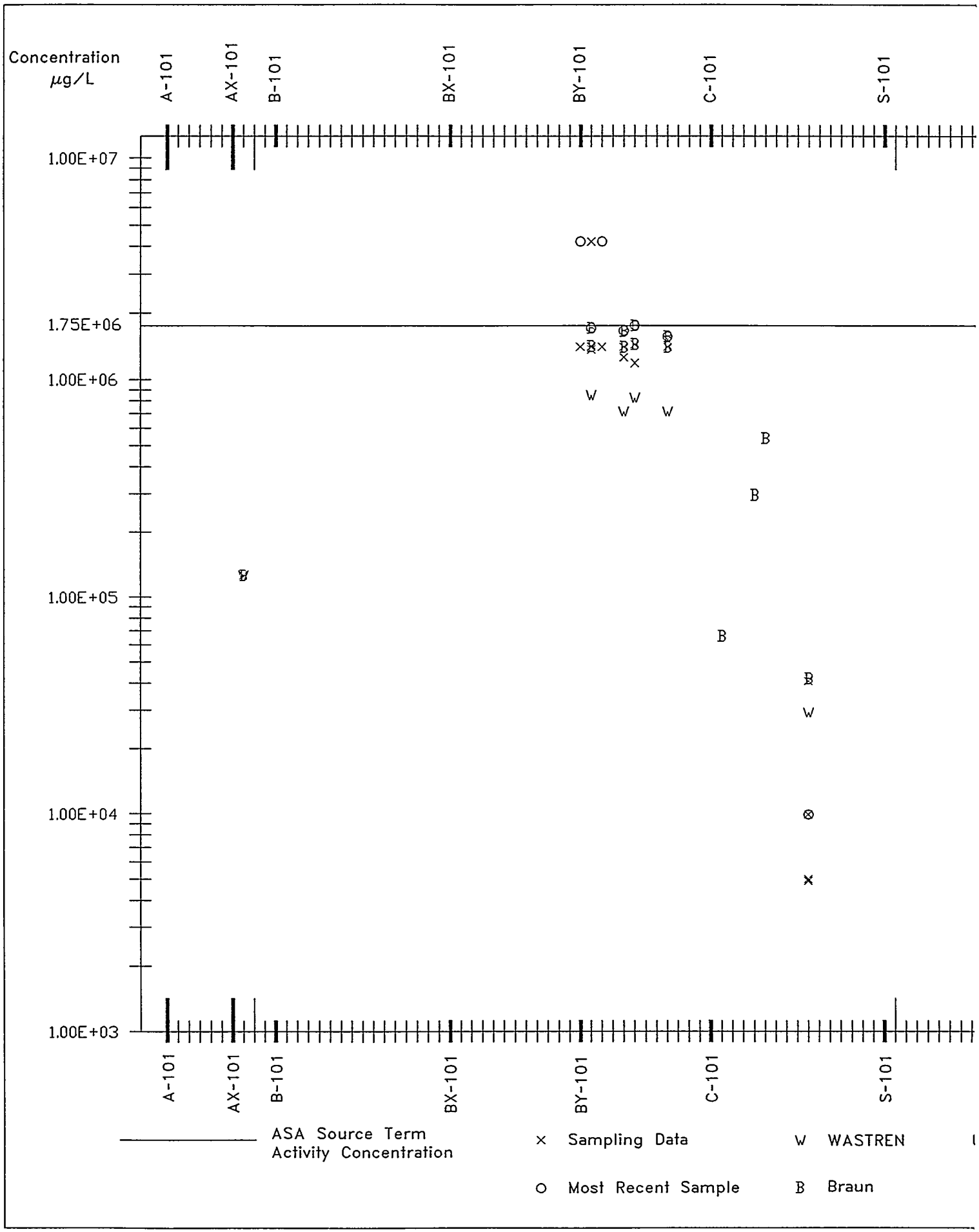
Extented tank lines represent Flamable Gas Watch List Tanks.

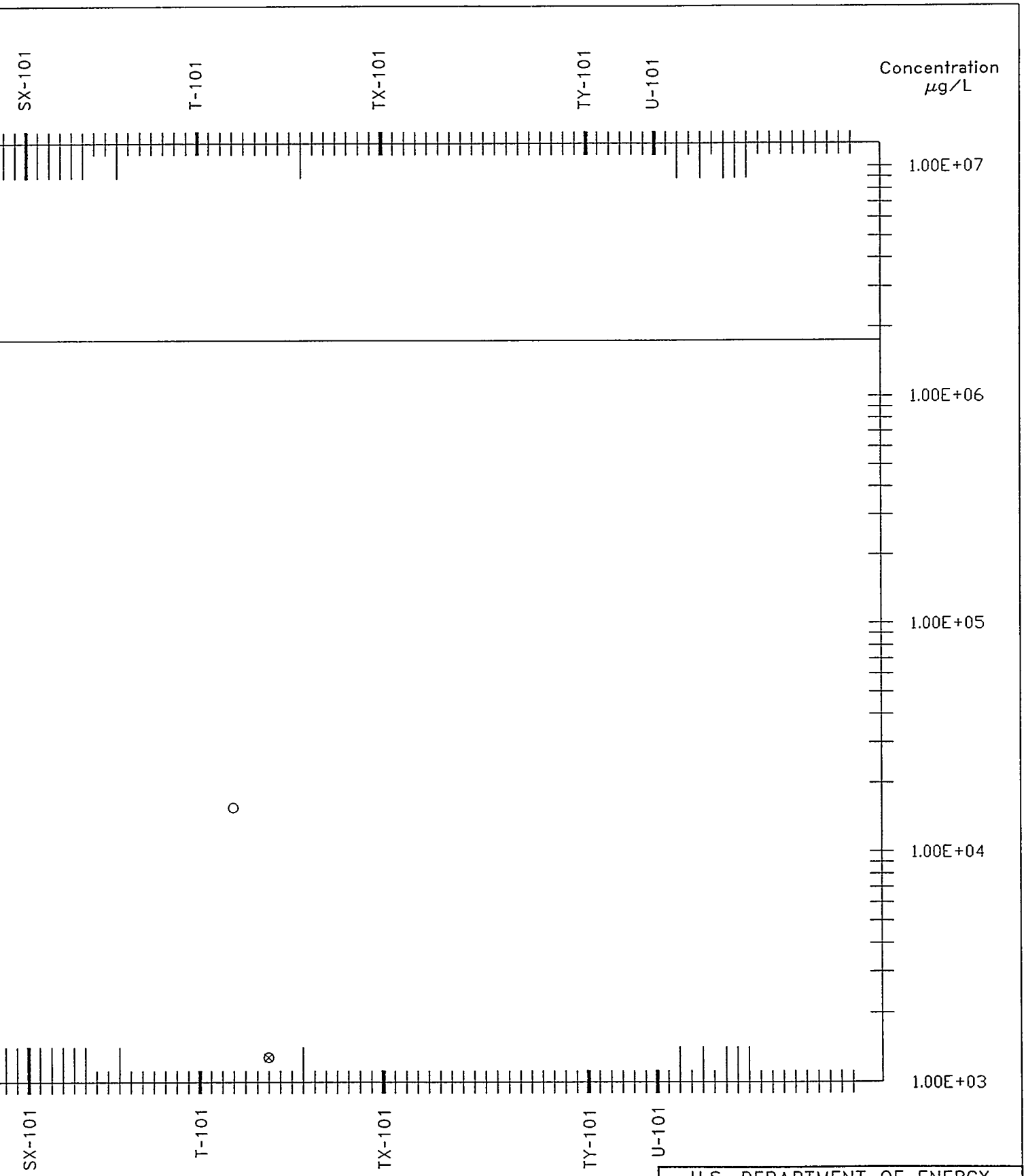
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Cd - Cadmium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC10 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+07
1.75E+06
1.00E+06
1.00E+05
1.00E+04
1.00E+03
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

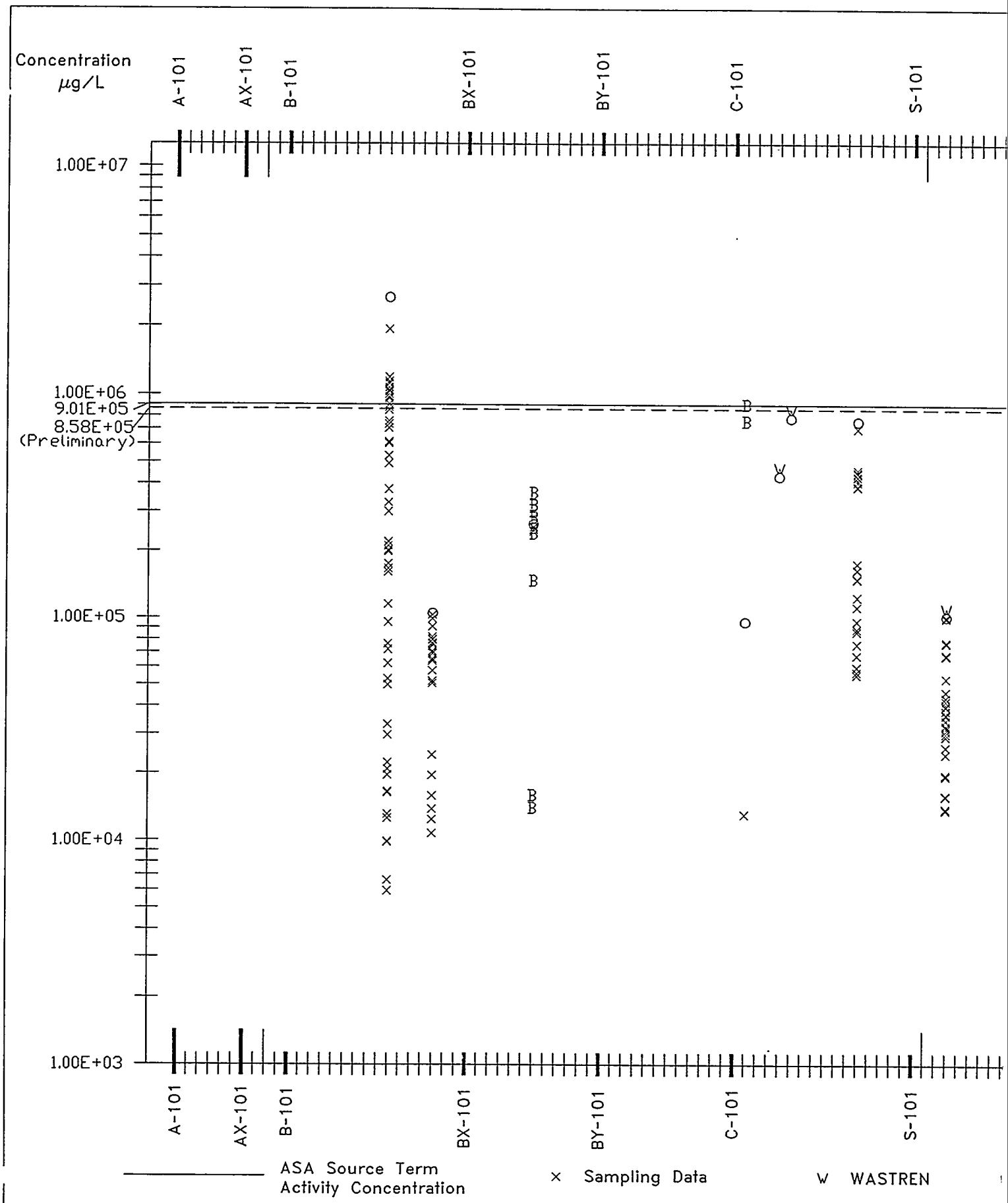
Extented tank lines represent Flamable Gas Watch List Tanks.

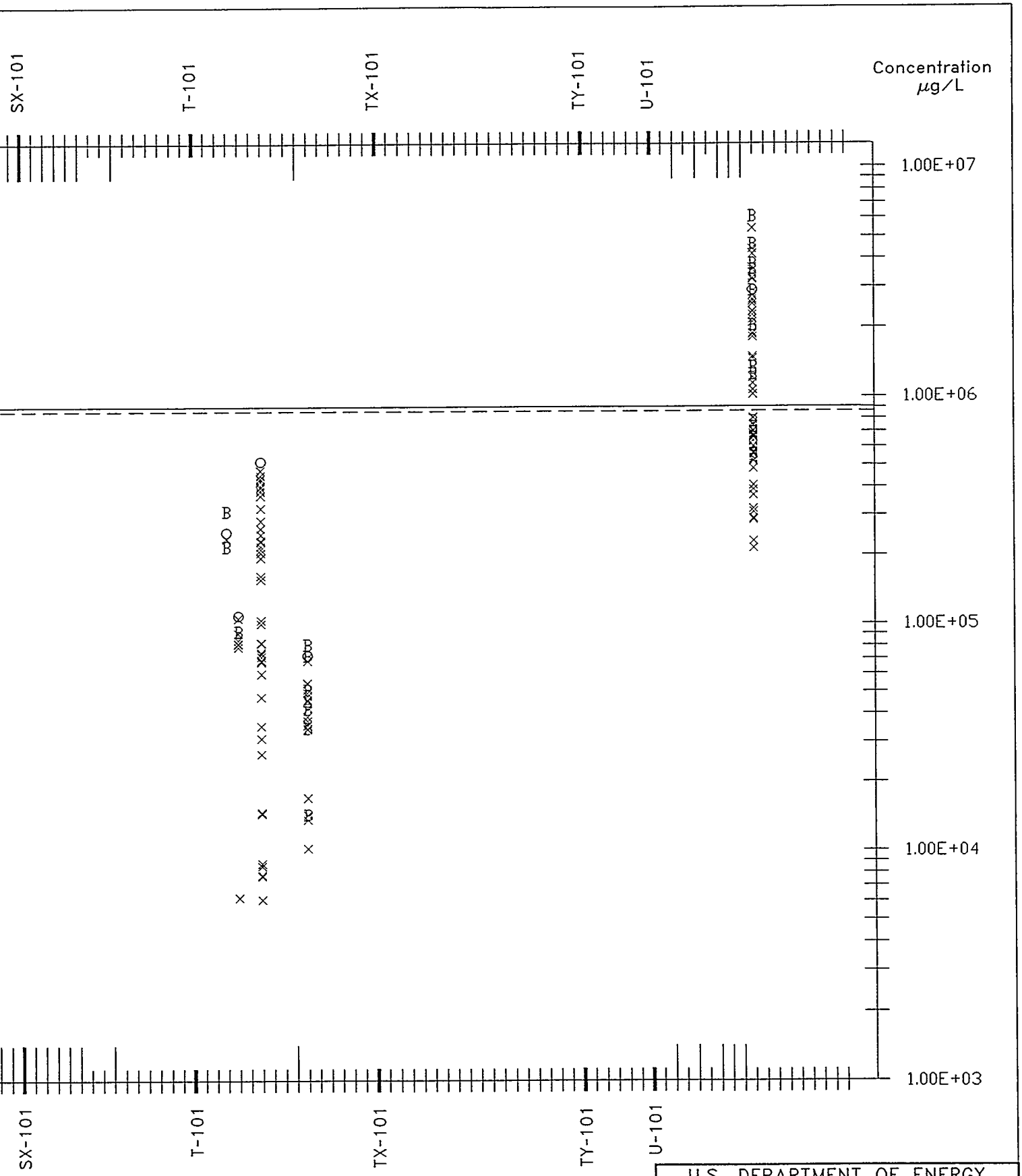
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Ce - Cerium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC11 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+07
1.00E+06
9.01E+05
8.58E+05
(Preliminary)
1.00E+05
1.00E+04
1.00E+03
ASA Source Term
Activity Concentration
× Sampling Data
O Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

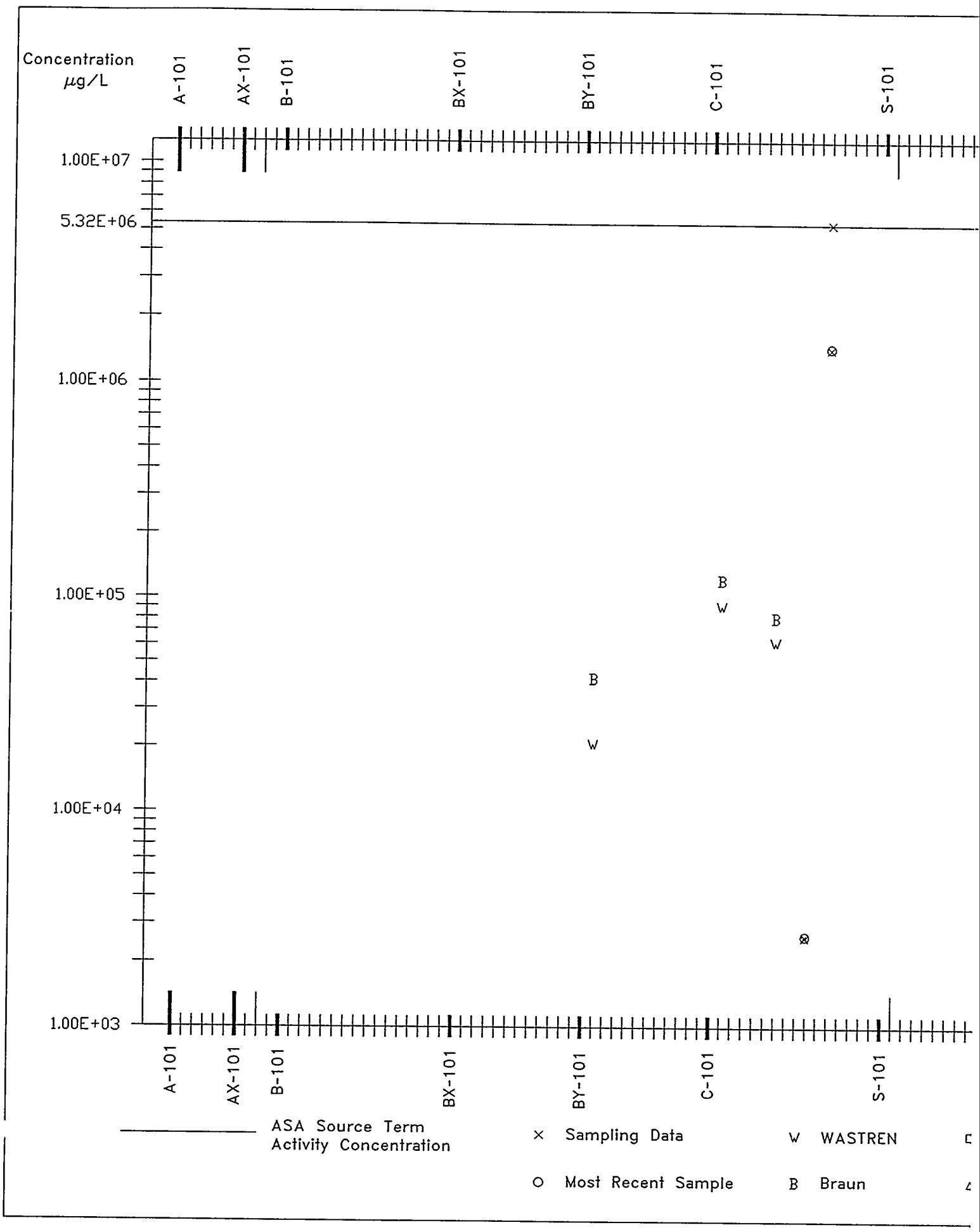
Extented tank lines represent Flamable Gas Watch List Tanks.

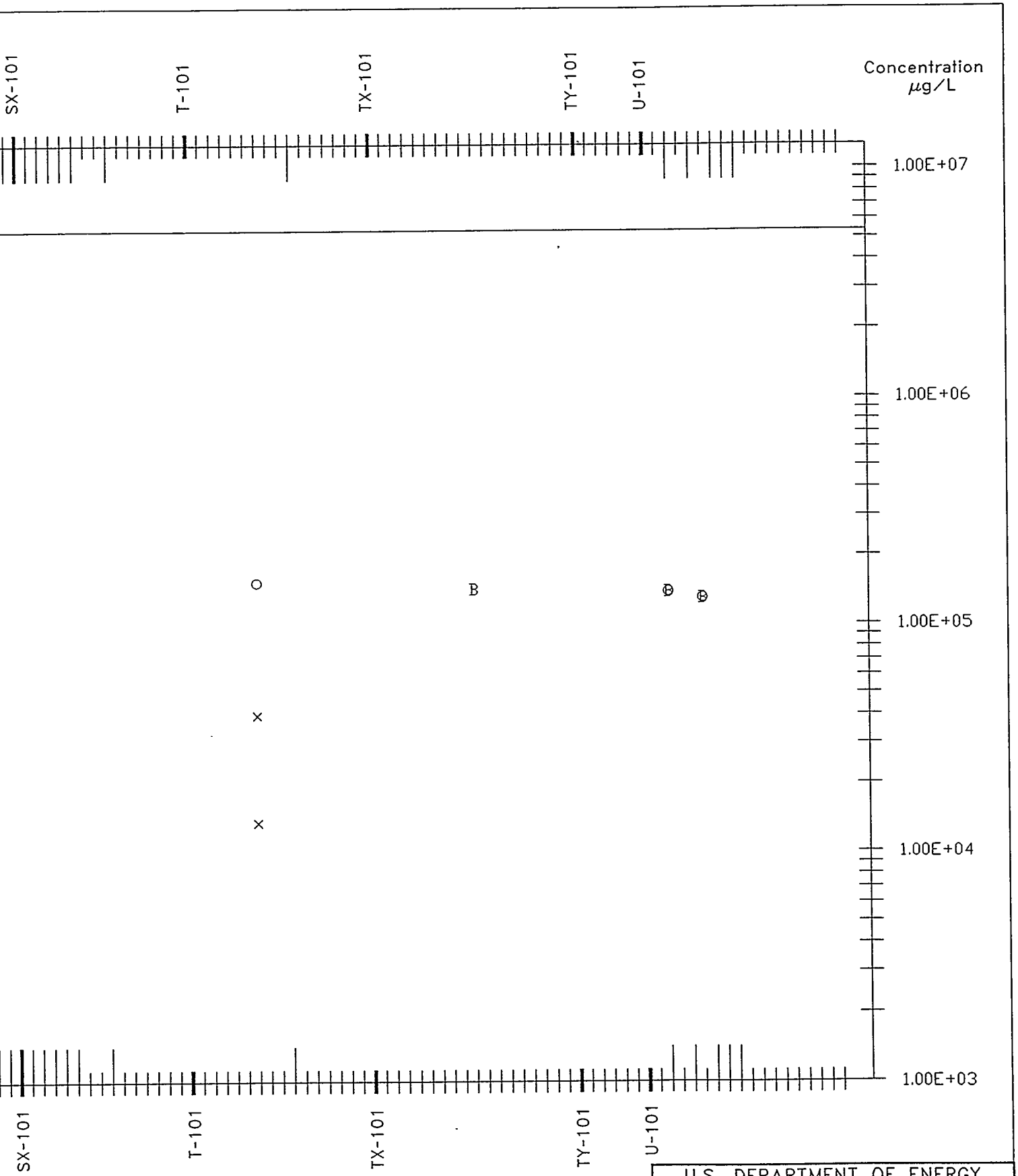
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Ce - Cerium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CC12 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+07
5.32E+06
1.00E+06
1.00E+05
1.00E+04
1.00E+03
B
W
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

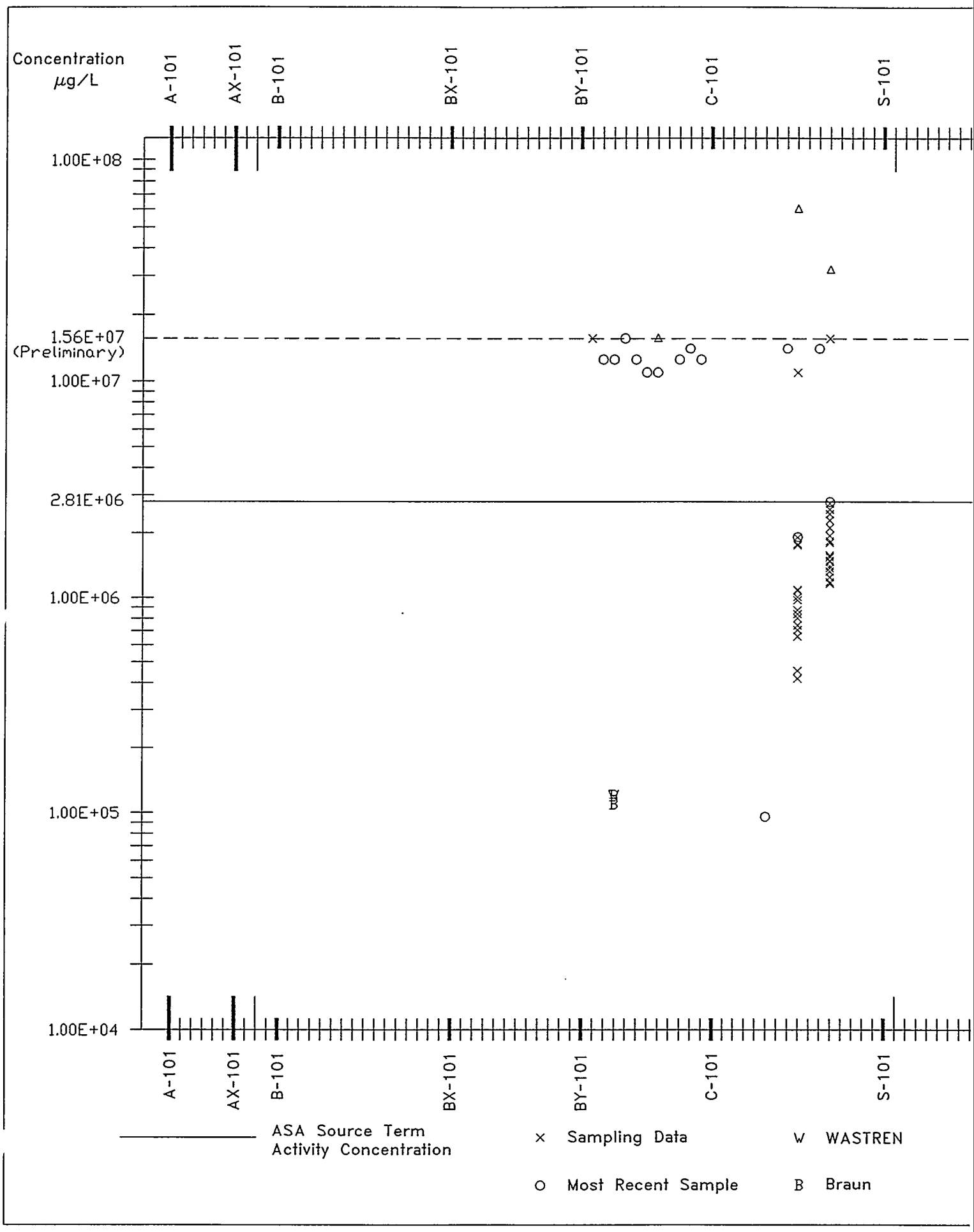
Extented tank lines represent Flamable Gas Watch List Tanks.

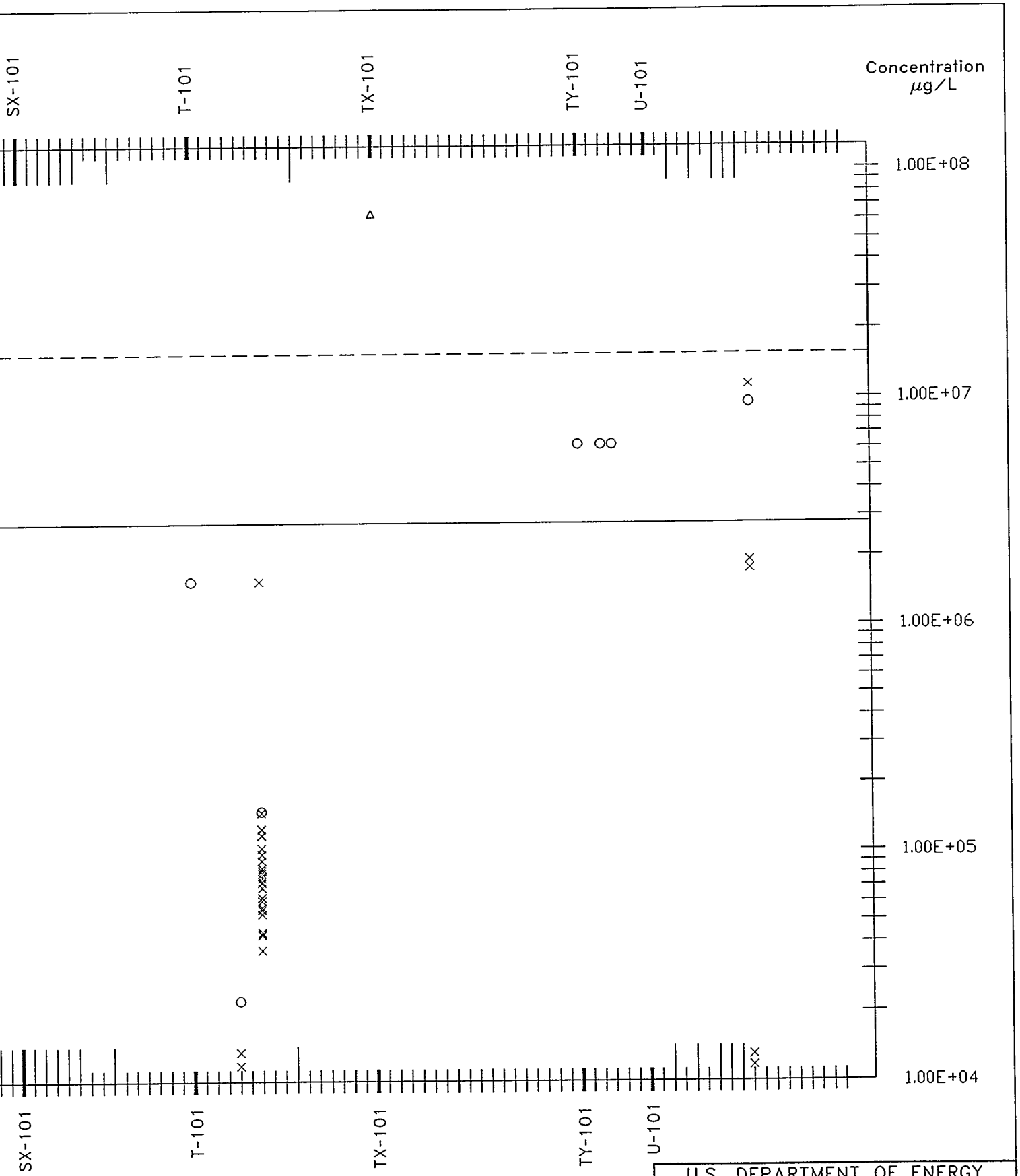
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
CN - Cyanide Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CC13 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+08
1.56E+07
(Preliminary)
1.00E+07
2.81E+06
1.00E+06
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

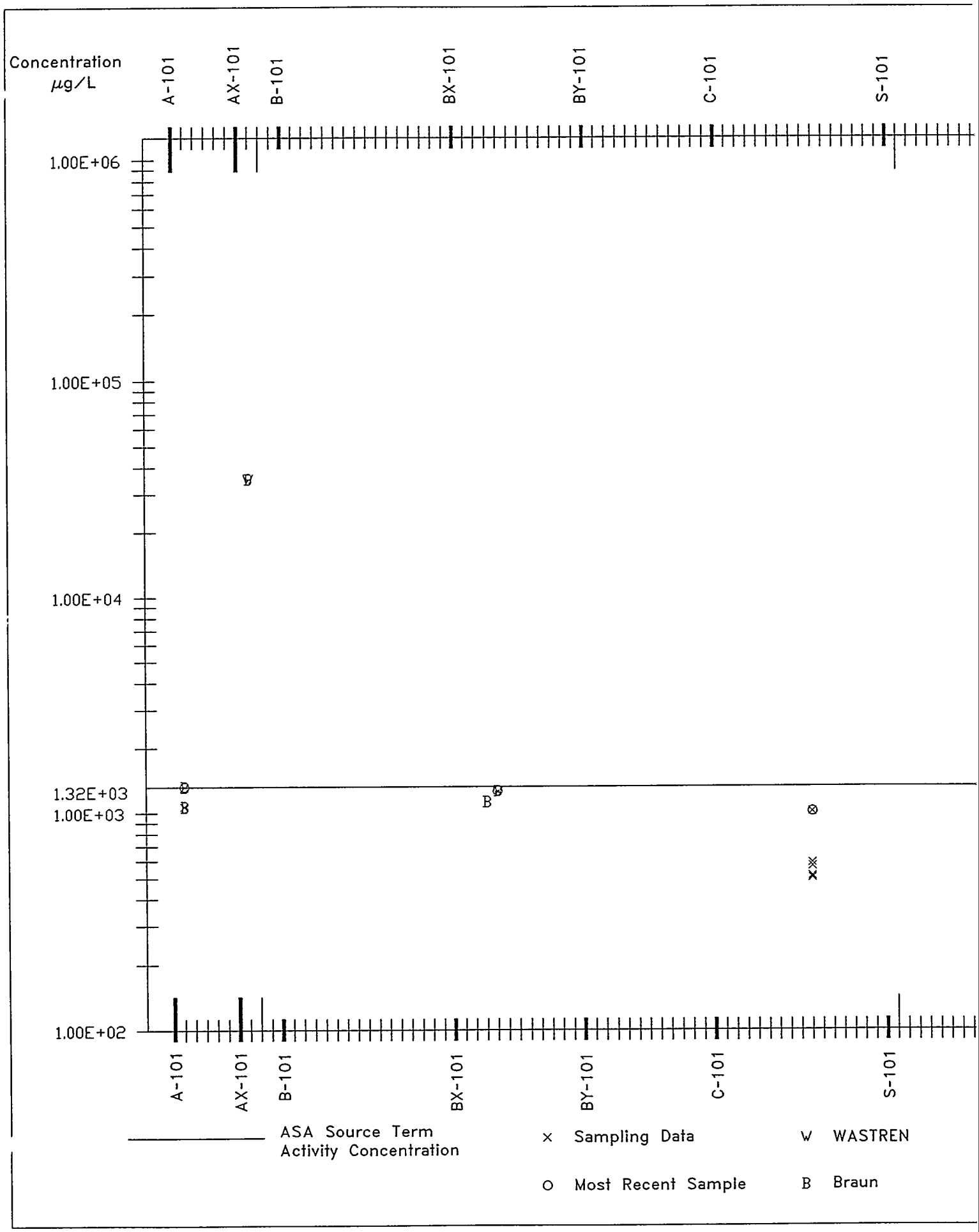
Extented tank lines represent Flamable Gas Watch List Tanks.

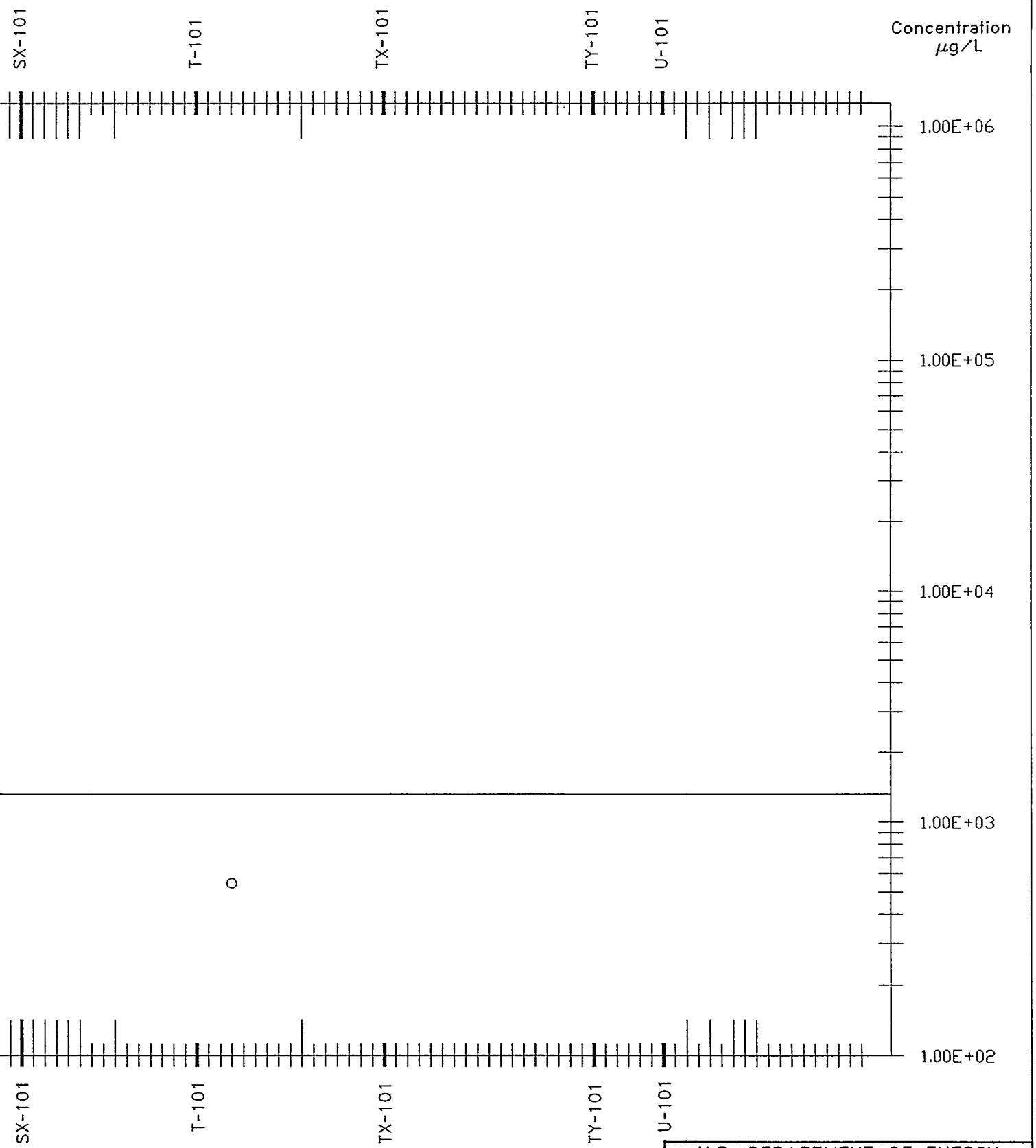
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
CN - Cyanide Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC14 | JOB NO E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+06
1.00E+05
1.00E+04
1.32E+03
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

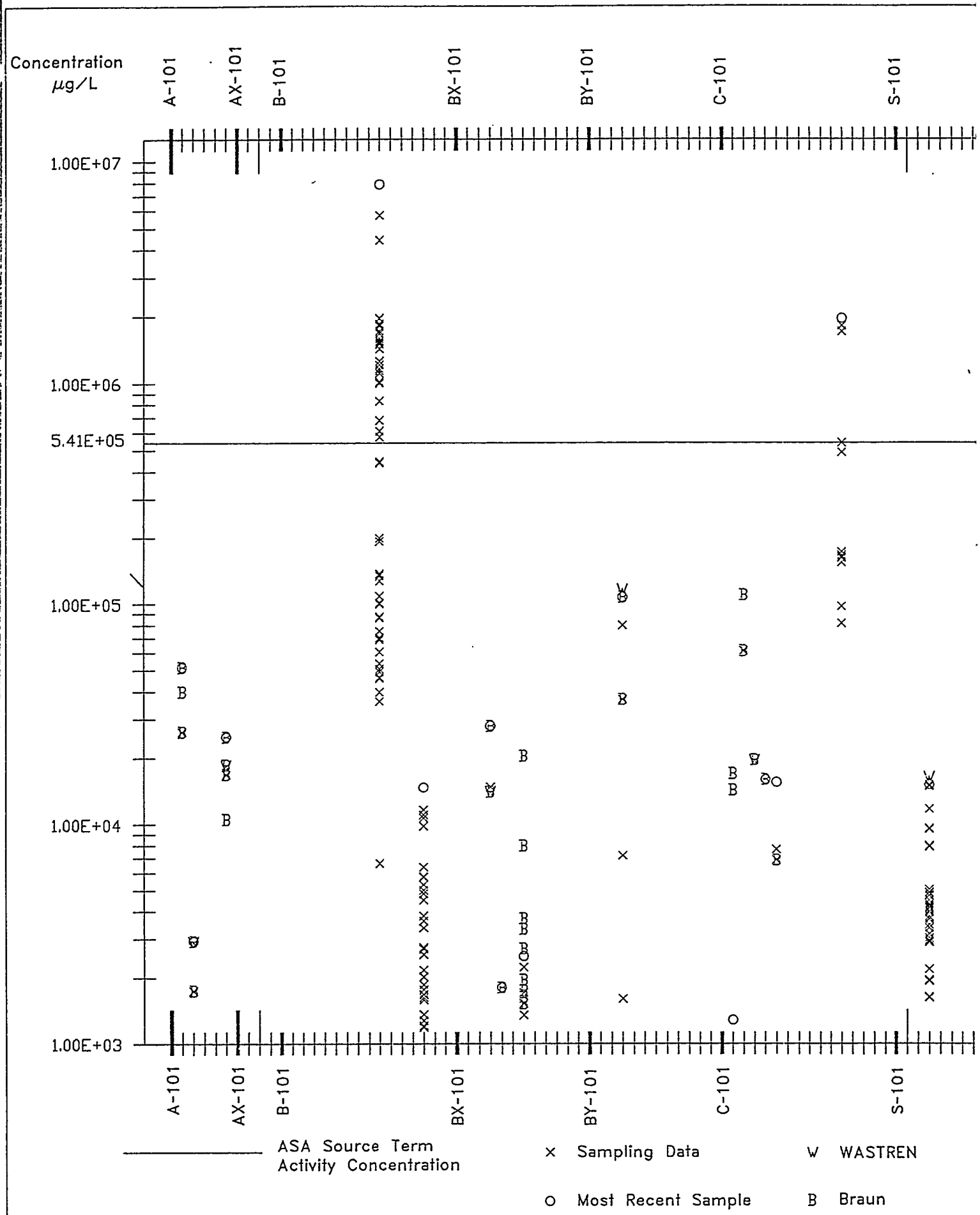
Extented tank lines represent Flamable Gas Watch List Tanks.

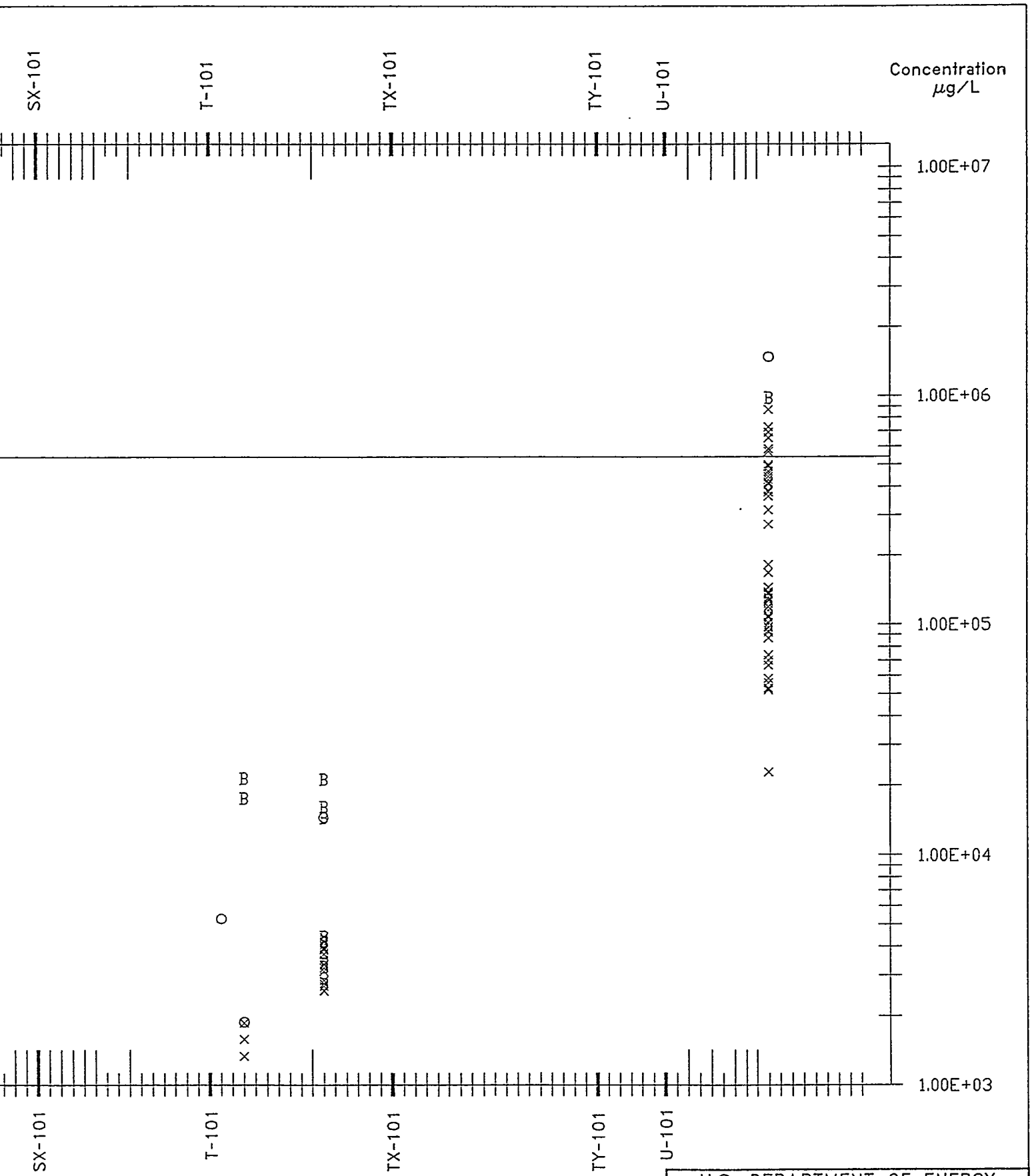
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Co - Cobalt Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CC15 | JOB NO E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+07
1.00E+06
5.41E+05
1.00E+05
1.00E+04
1.00E+03
ASA Source Term
Activity Concentration
× Sampling Data
O Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

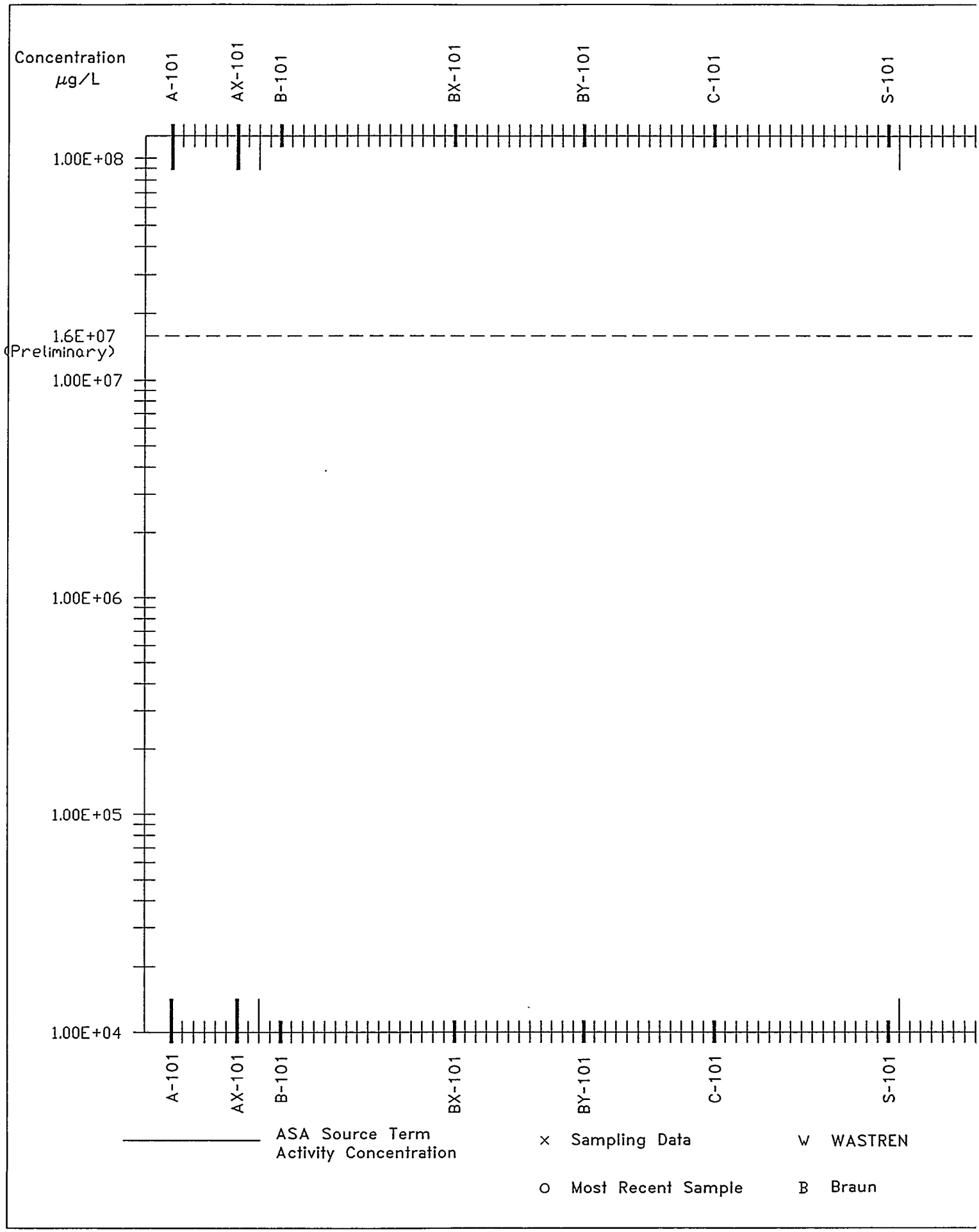
Extented tank lines represent Flamable Gas Watch List Tanks.

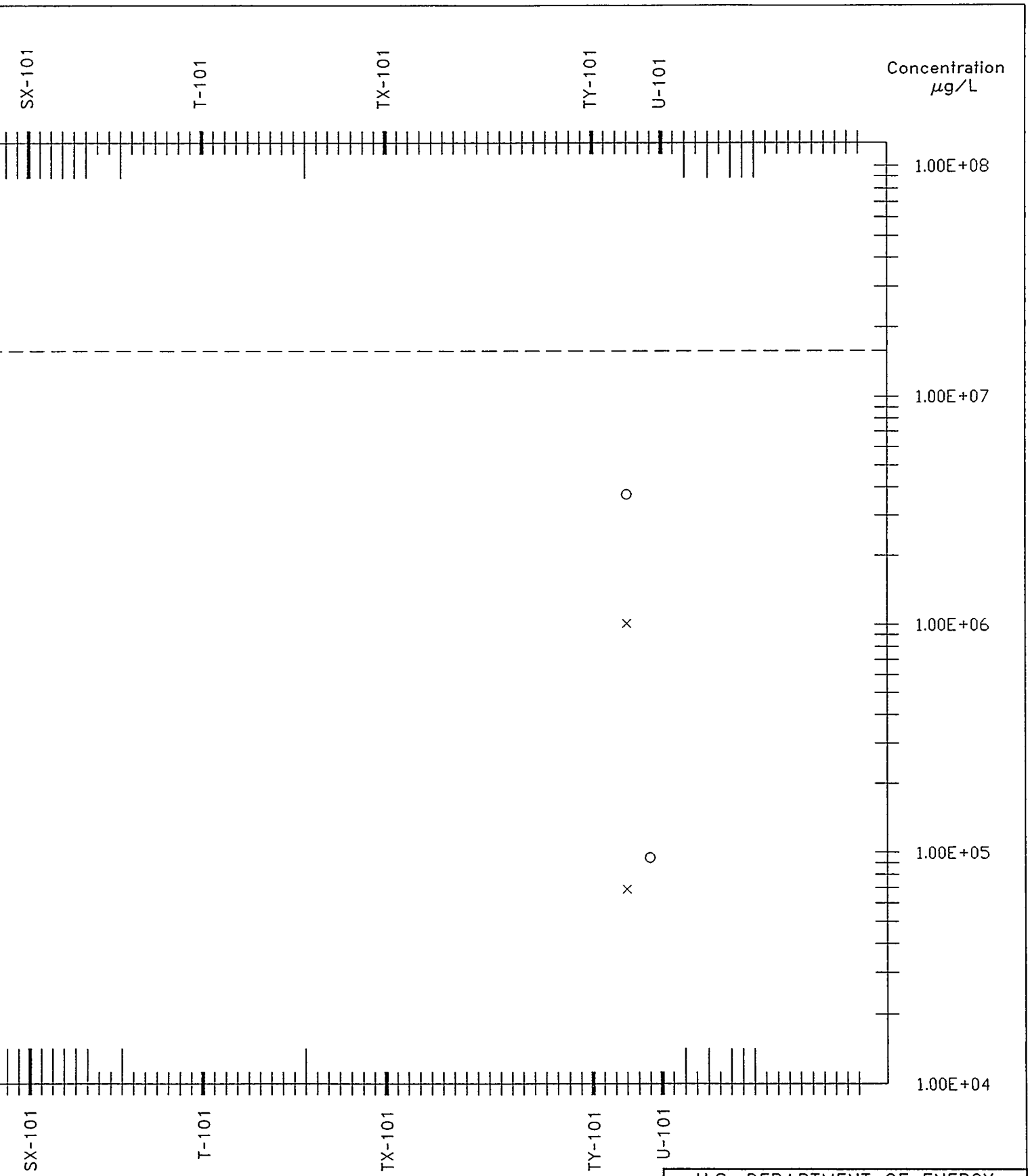
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Co - Cobalt Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC16 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+08
1.6E+07
(Preliminary)
1.00E+07
1.00E+06
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
× Sampling Data
O Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

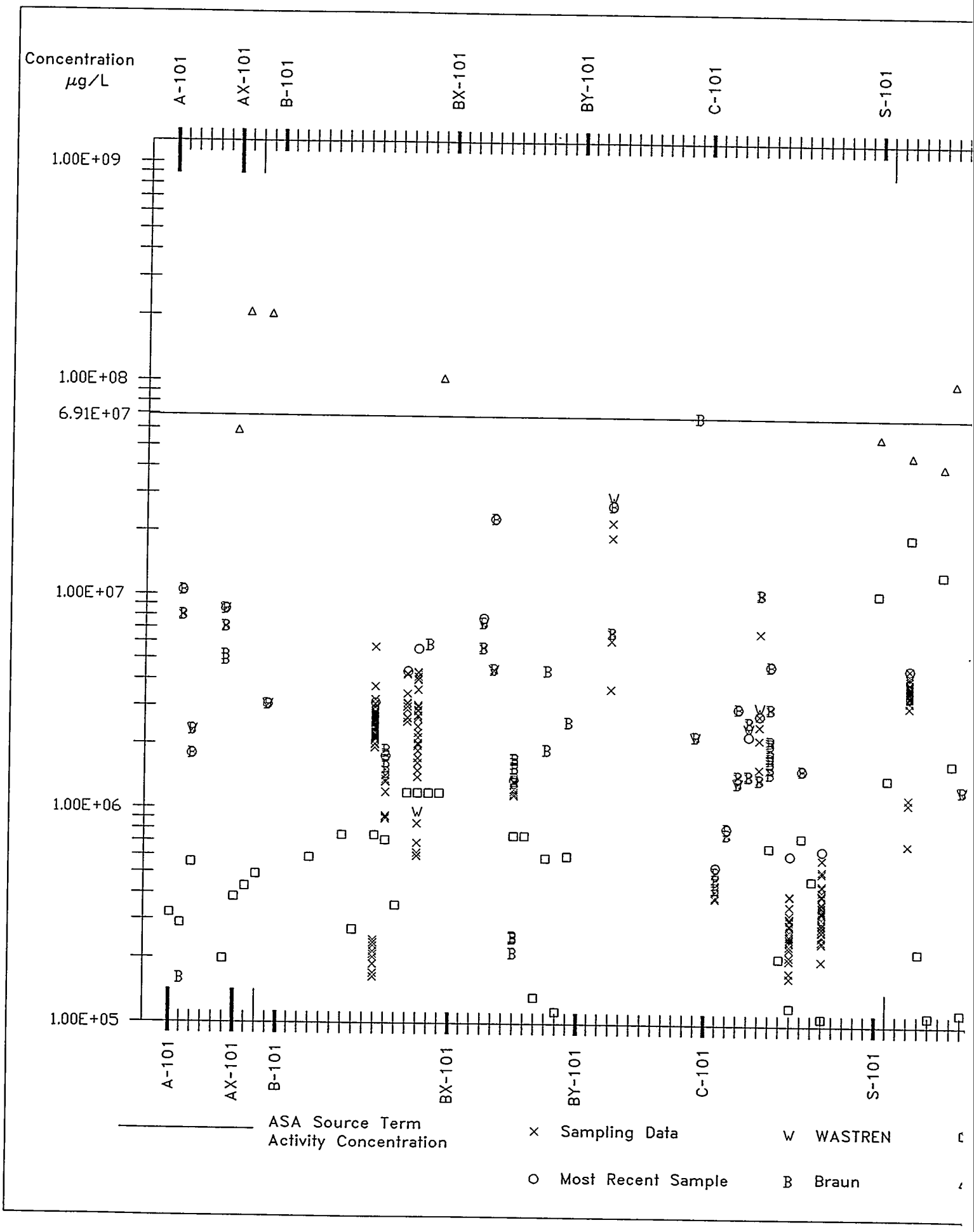
Extented tank lines represent Flamable Gas Watch List Tanks.

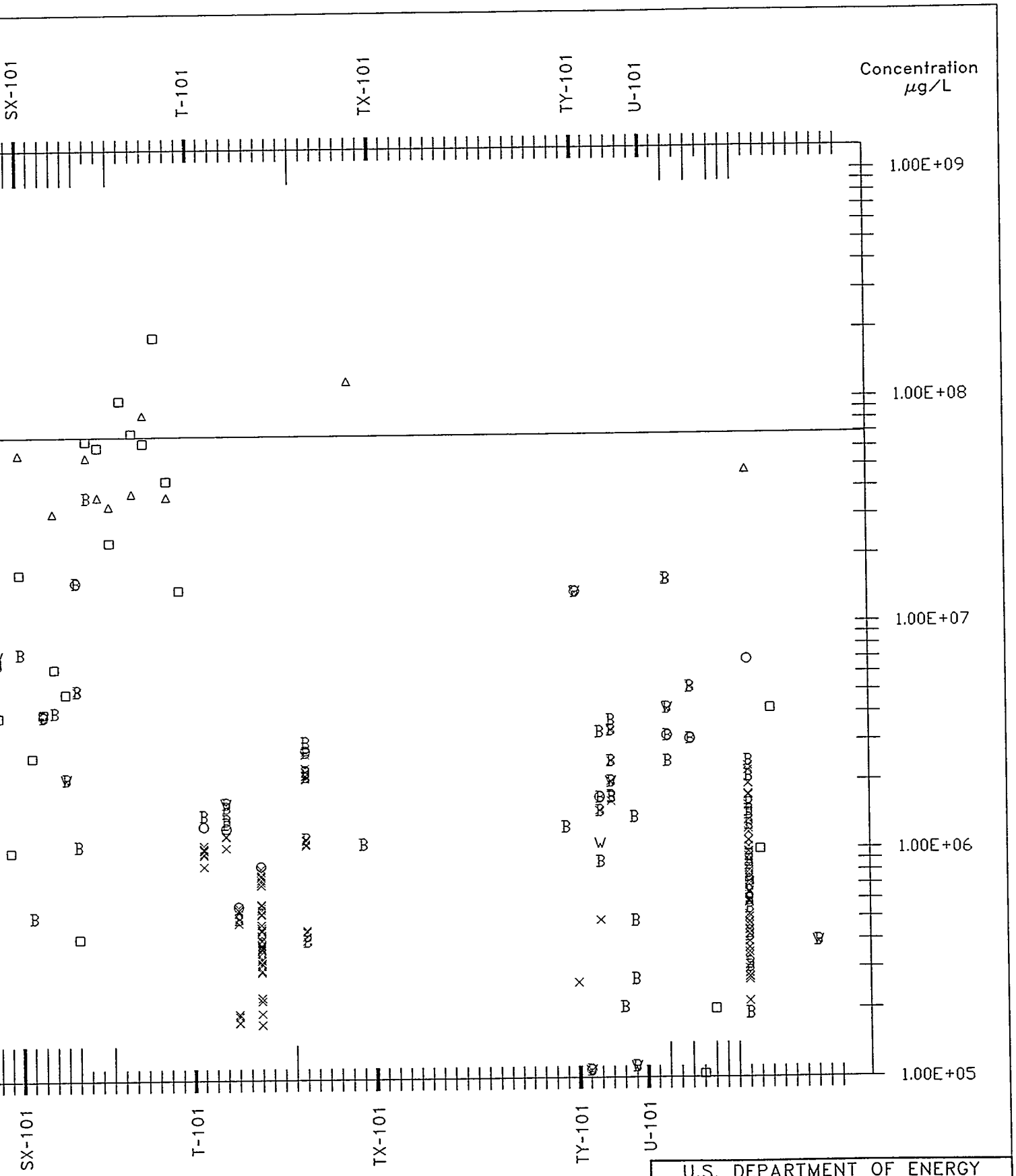
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Cr+3 - Chromium+3 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC17 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+09
1.00E+08
6.91E+07
1.00E+07
1.00E+06
1.00E+05
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

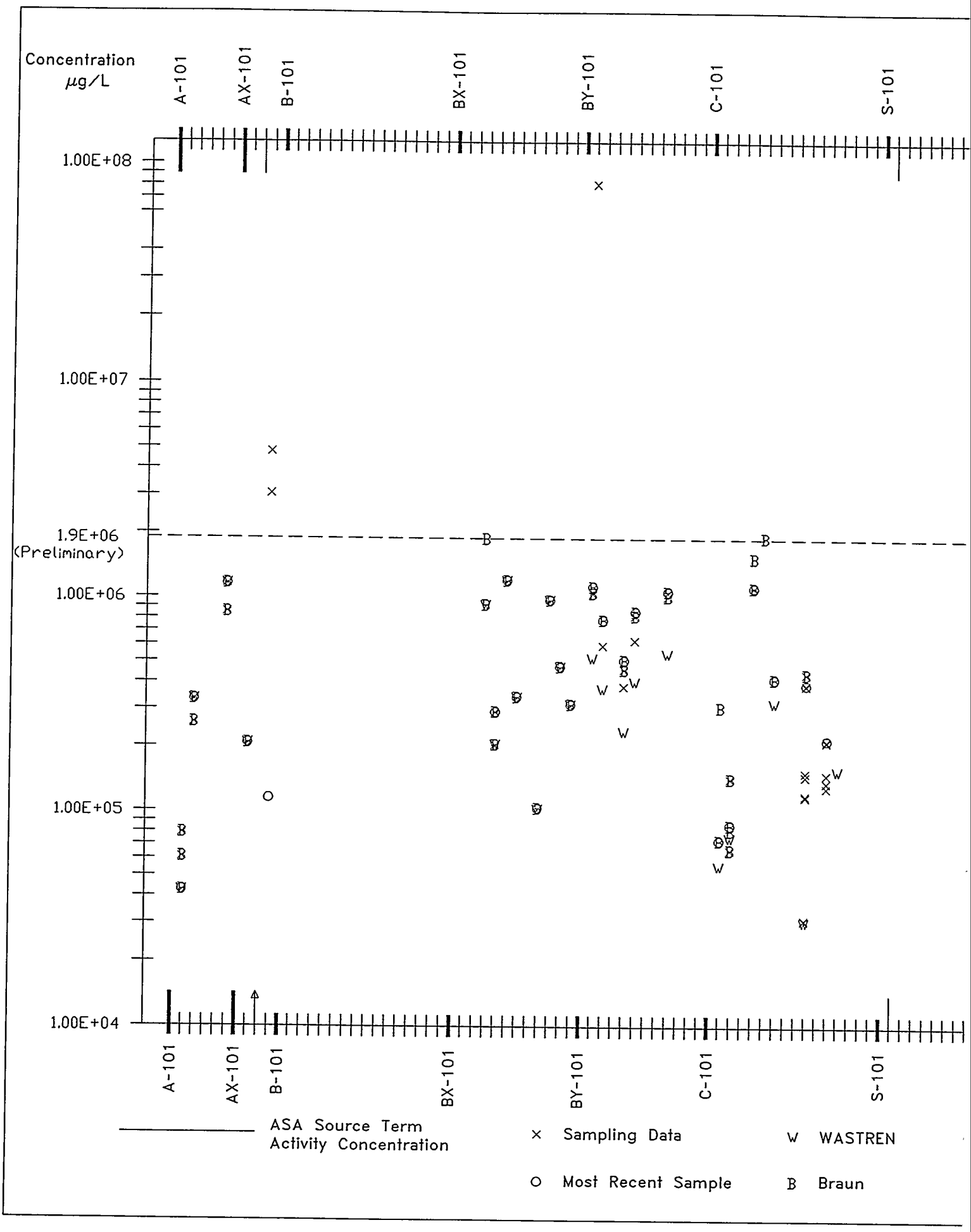
Extented tank lines represent Flamable Gas Watch List Tanks.

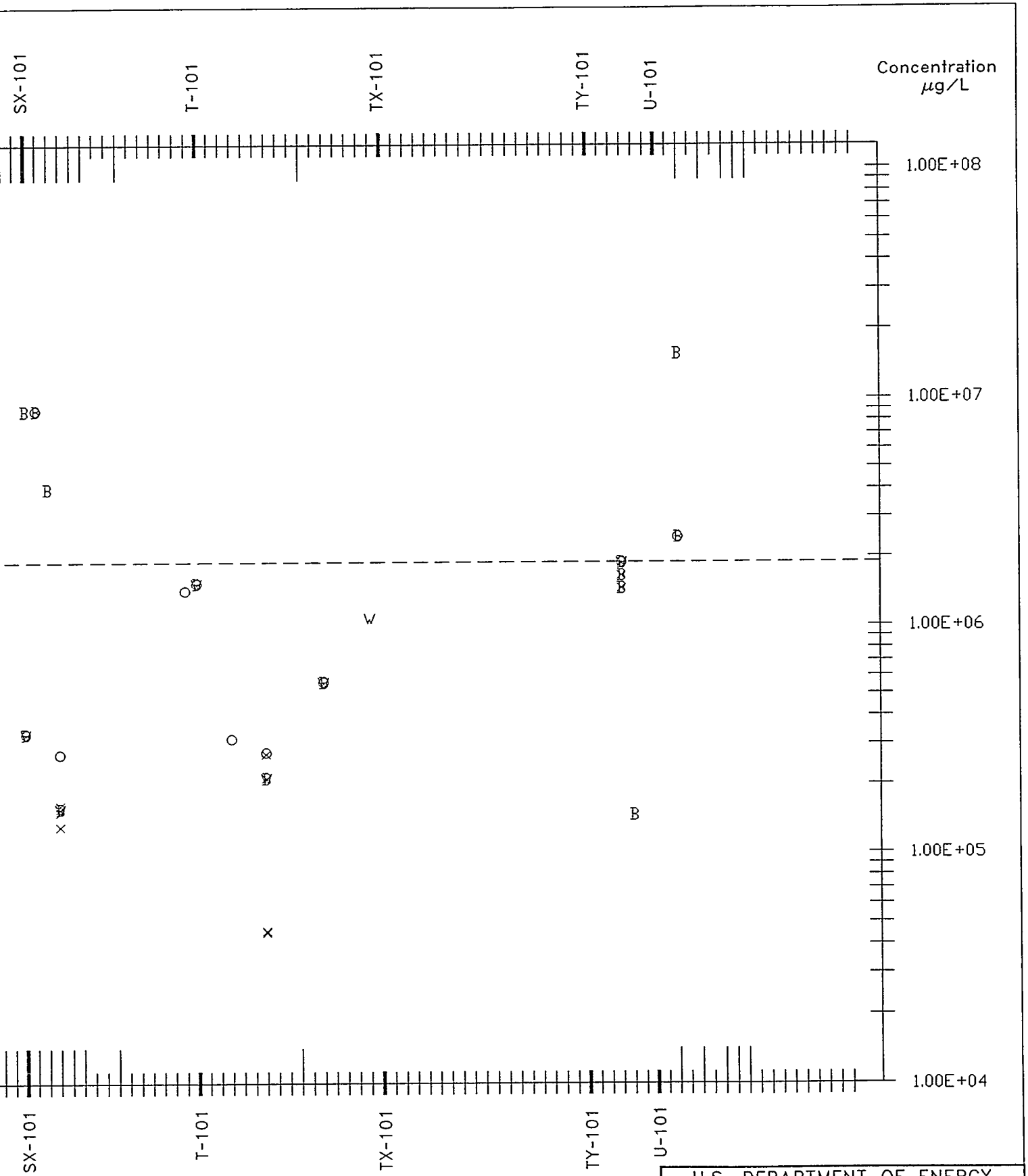
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Cr+3 - Chromium+3 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC18 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+08
1.00E+07
1.9E+06
(Preliminary)
1.00E+06
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

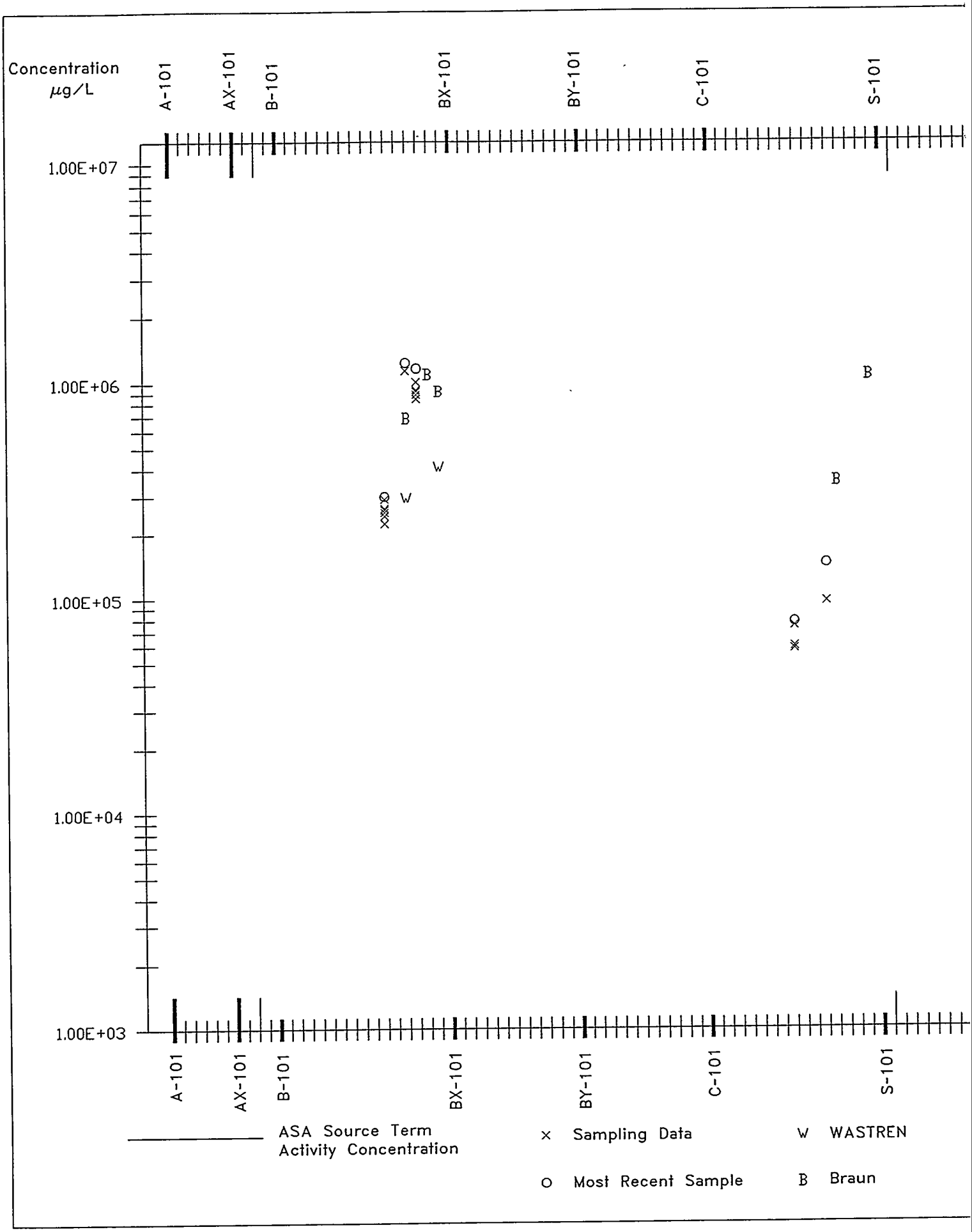
Extented tank lines represent Flamable Gas Watch List Tanks.

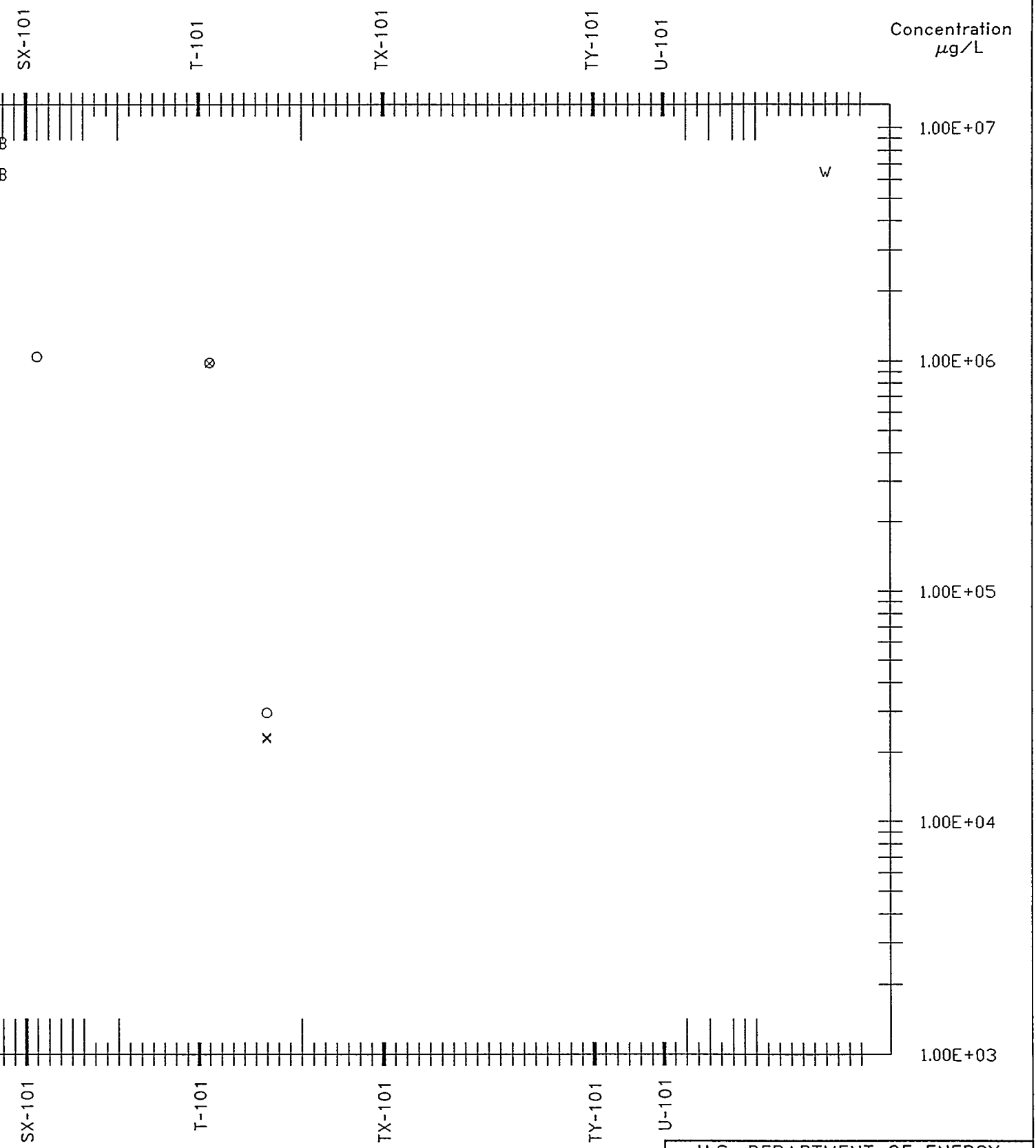
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Cr+6 - Chromium+6 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC19 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+07
1.00E+06
1.00E+05
1.00E+04
1.00E+03
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

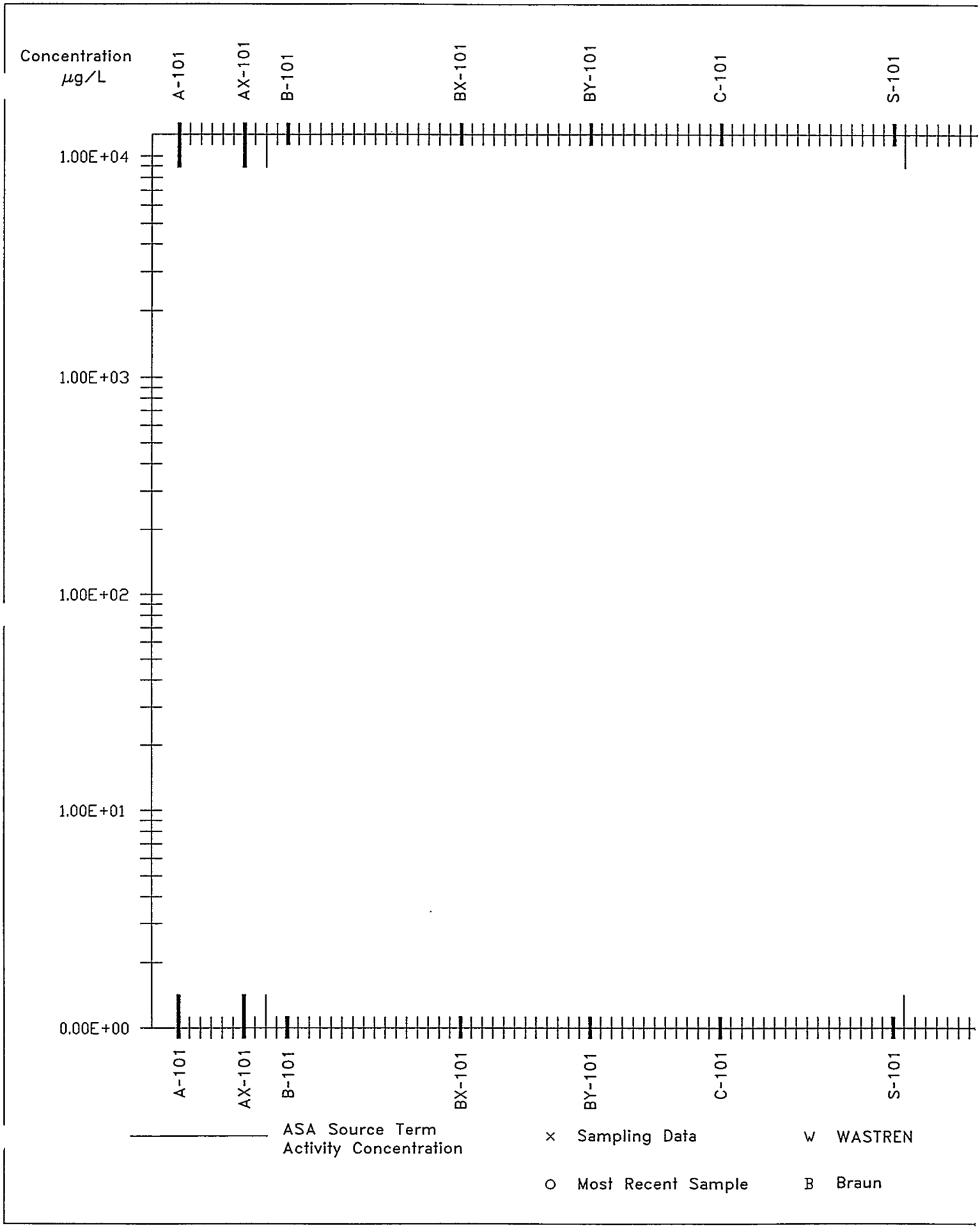
Extented tank lines represent Flamable Gas Watch List Tanks.

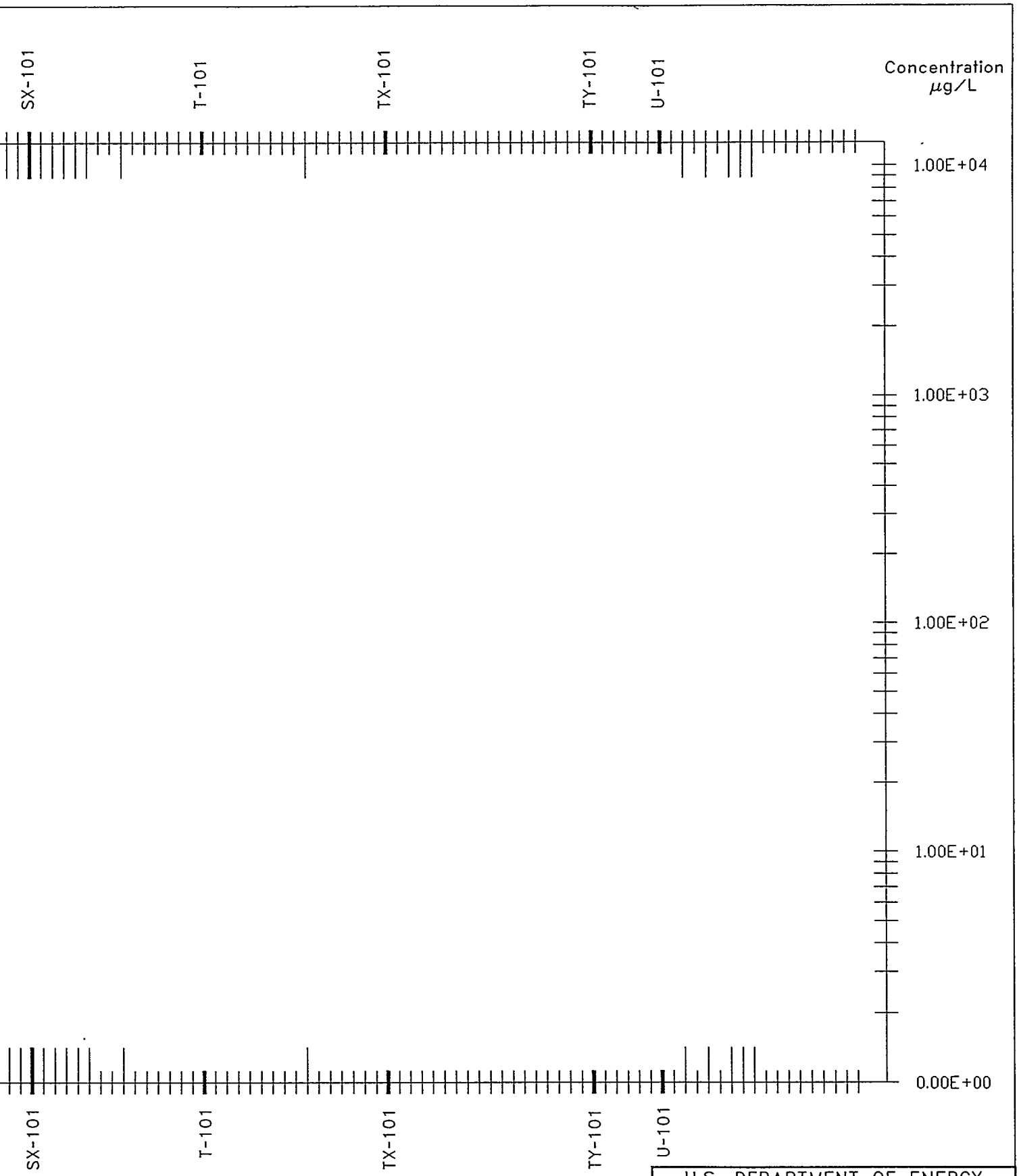
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Cr+6 - Chromium+6 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC20 | JOB NO. E01595 | Date 4/95


Concentration
μg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+04
1.00E+03
1.00E+02
1.00E+01
0.00E+00
ASA Source Term
Activity Concentration
× Sampling Data
O Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

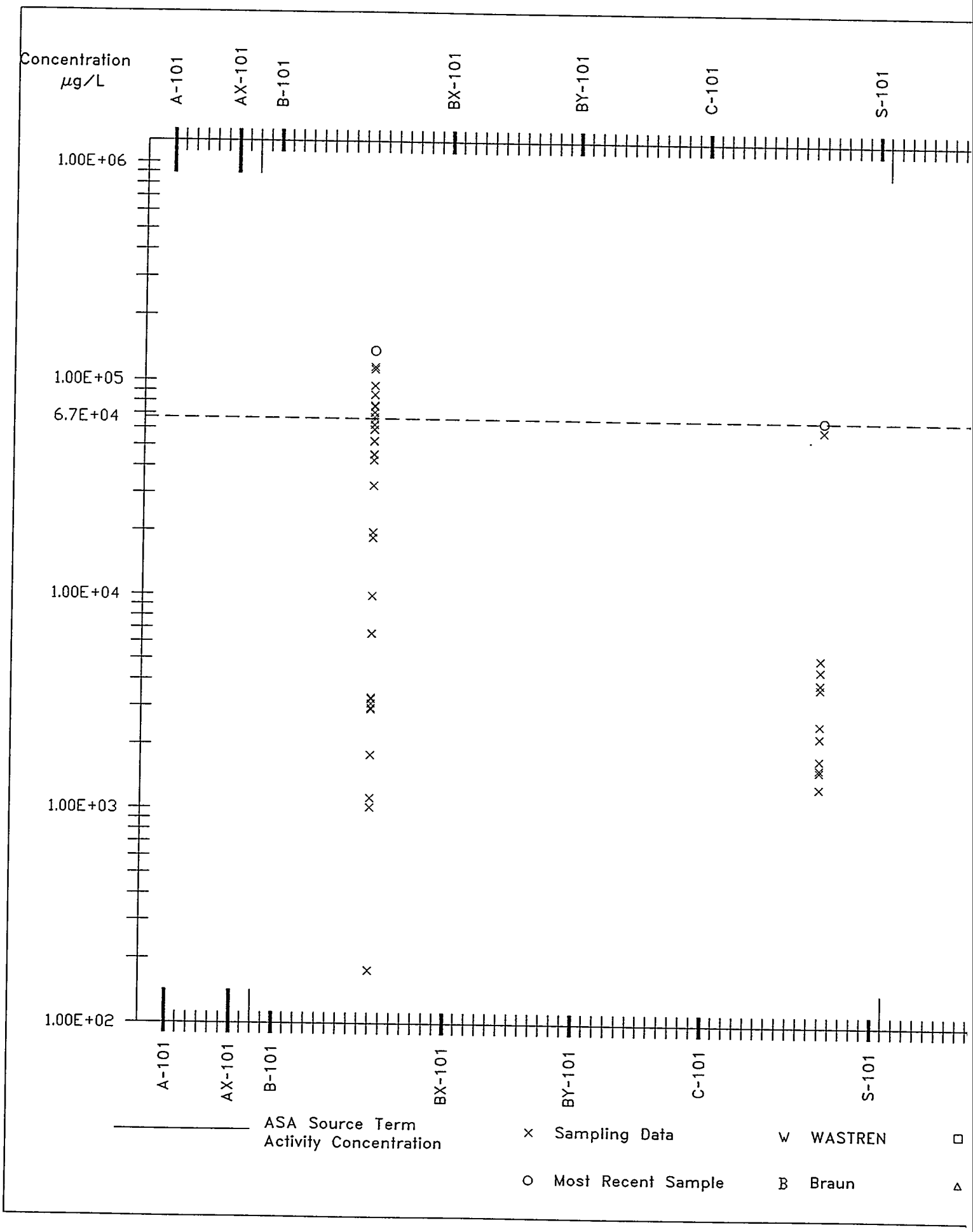
Extented tank lines represent Flamable Gas Watch List Tanks.

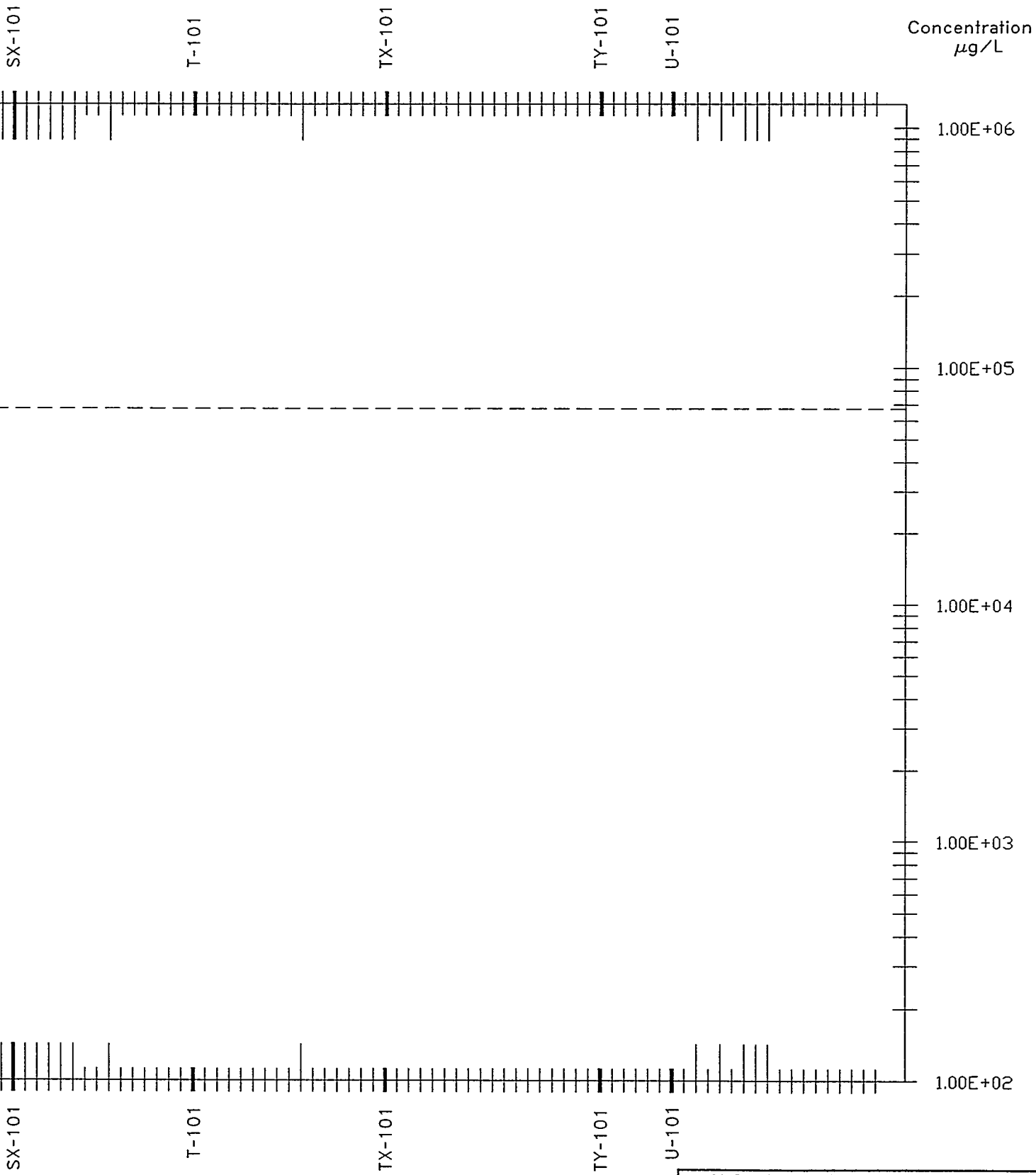
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Dy - Dysptosium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CC21 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+06
1.00E+05
6.7E+04
1.00E+04
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

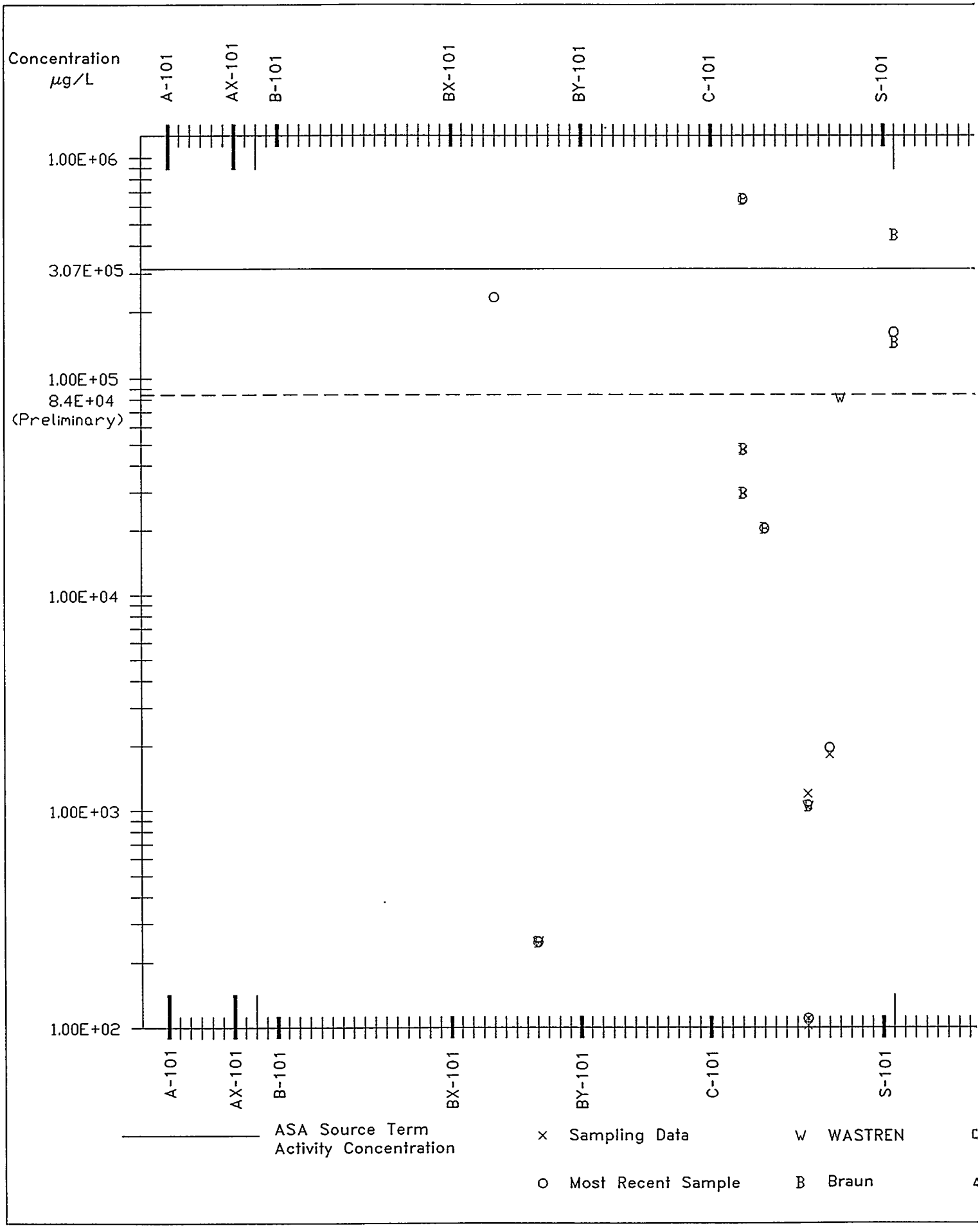
Extented tank lines represent Flamable Gas Watch List Tanks.

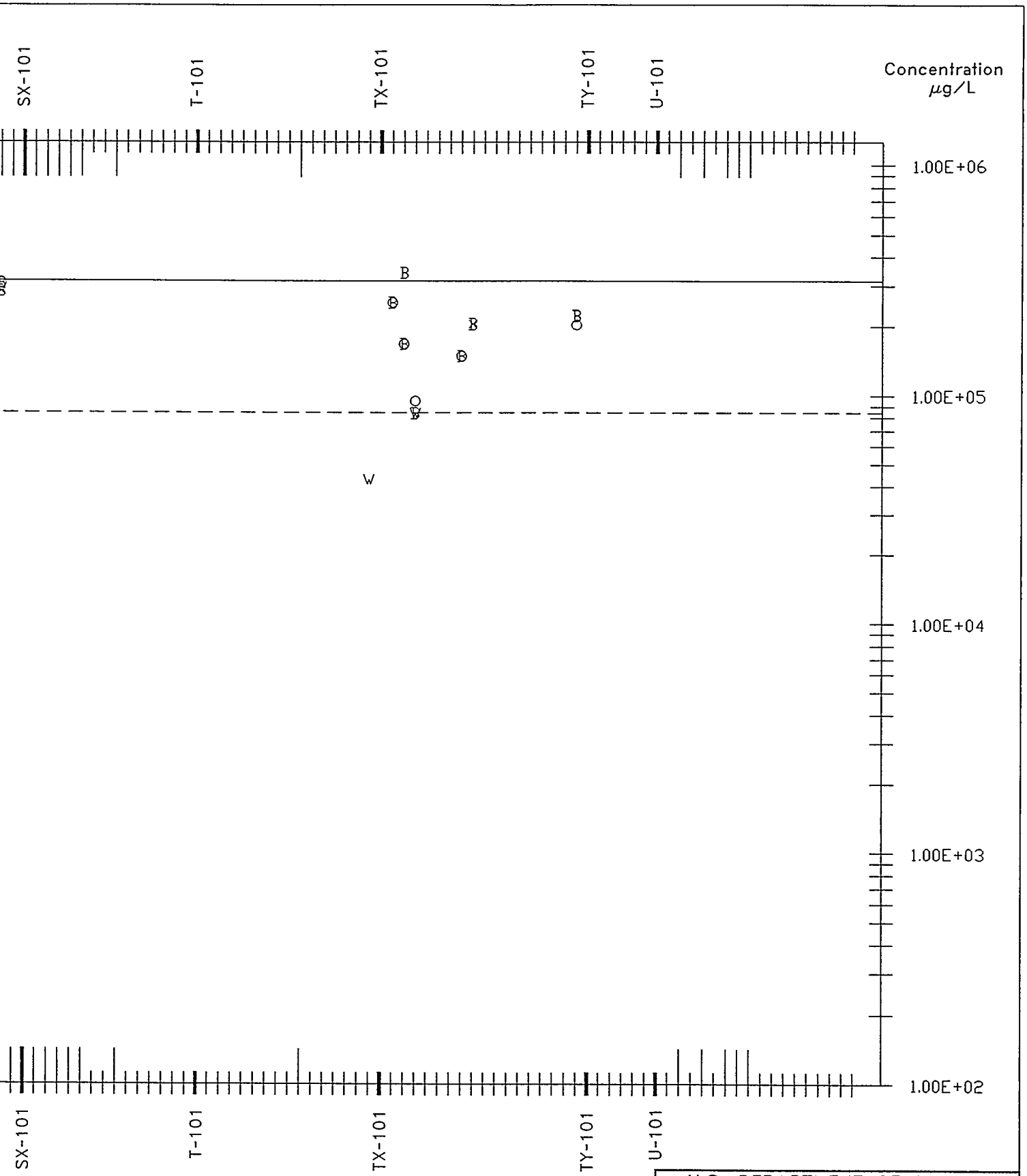
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Dy - Dysprosium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC22 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+06
3.07E+05
1.00E+05
8.4E+04
(Preliminary)
1.00E+04
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

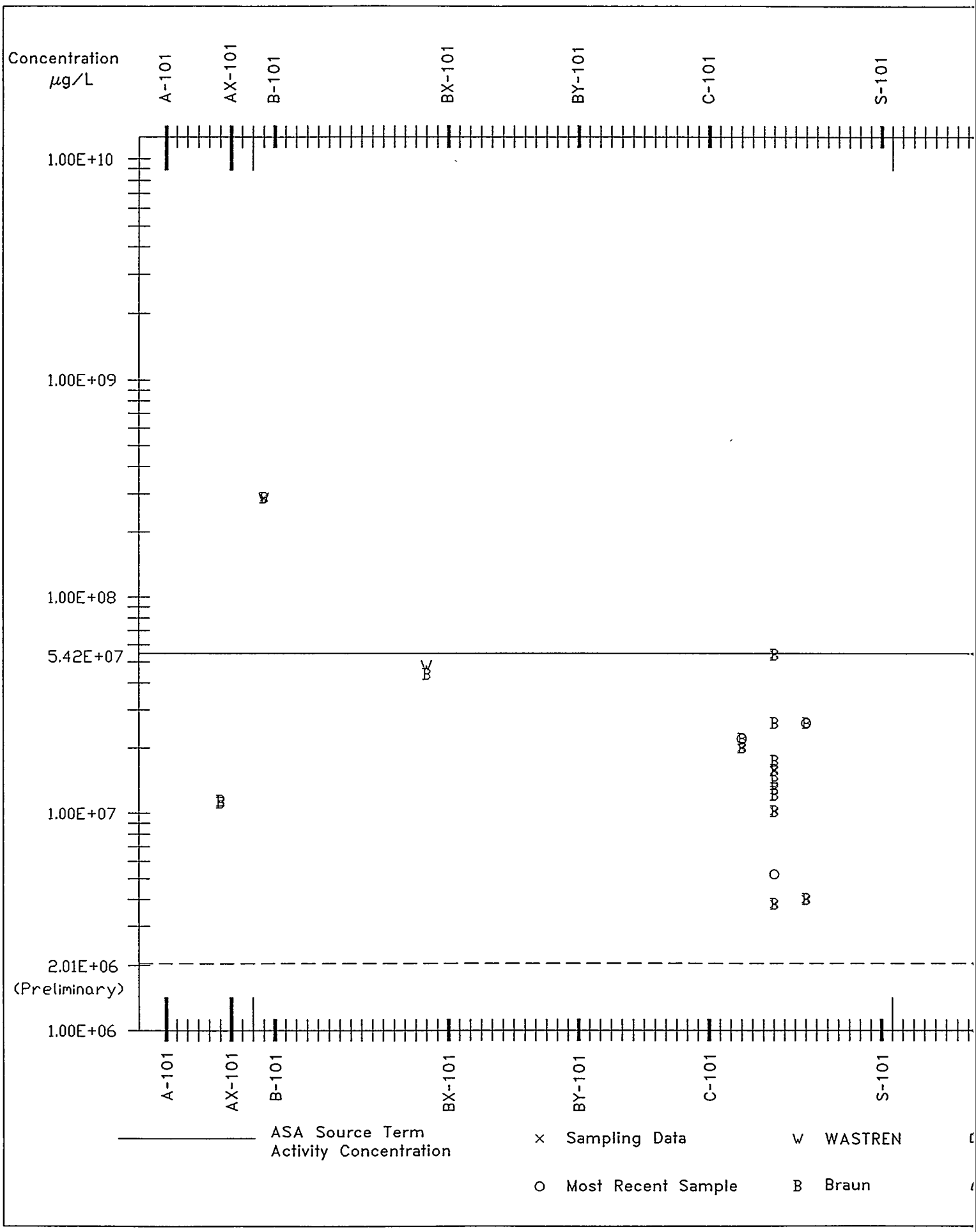
Extented tank lines represent Flamable Gas Watch List Tanks.

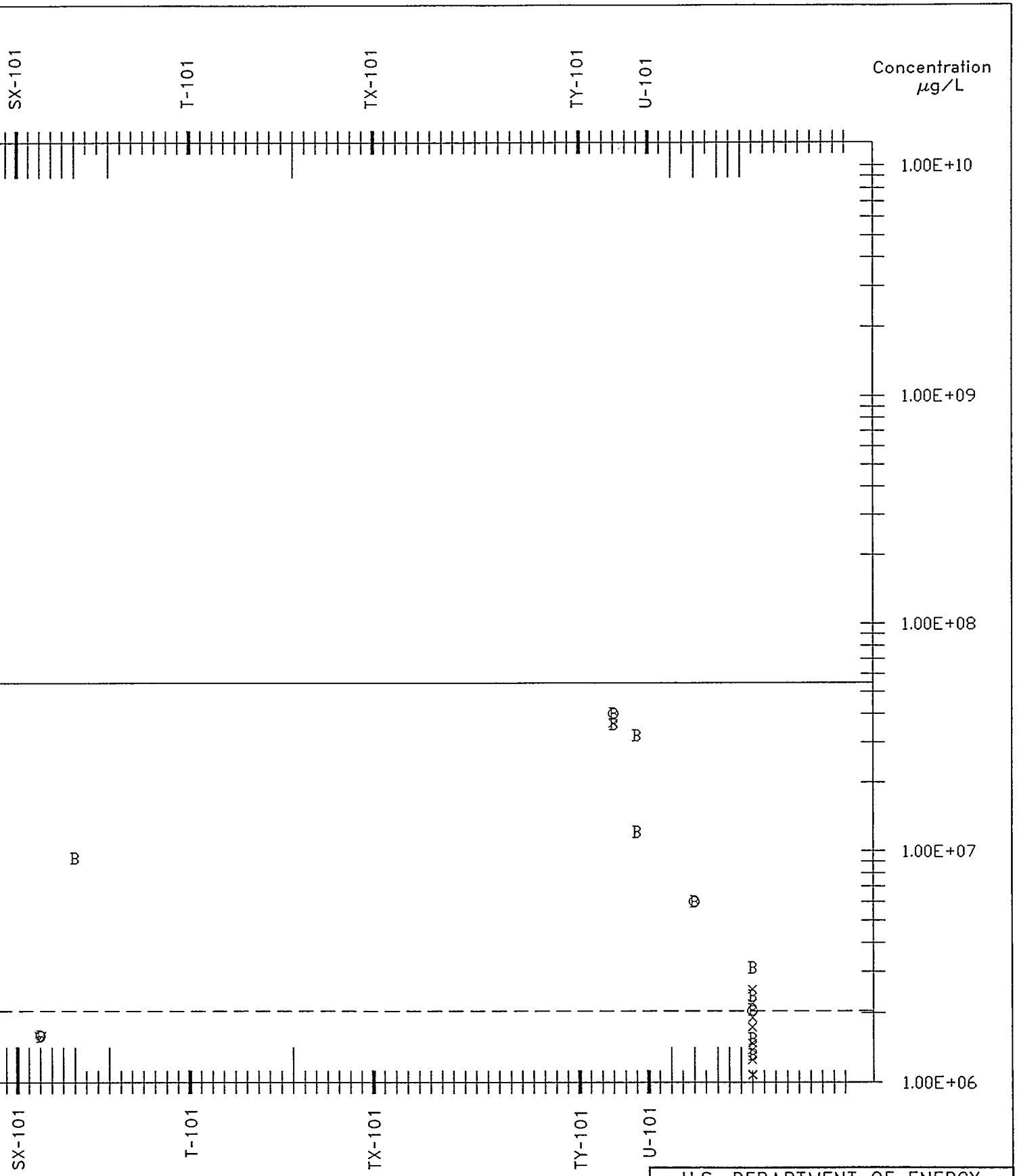
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Hg - Mercury Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC23 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+10
1.00E+09
1.00E+08
5.42E+07
1.00E+07
2.01E+06
(Preliminary)
1.00E+06
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
O Most Recent Sample
B Braun



HTCE Inventory

TRAC

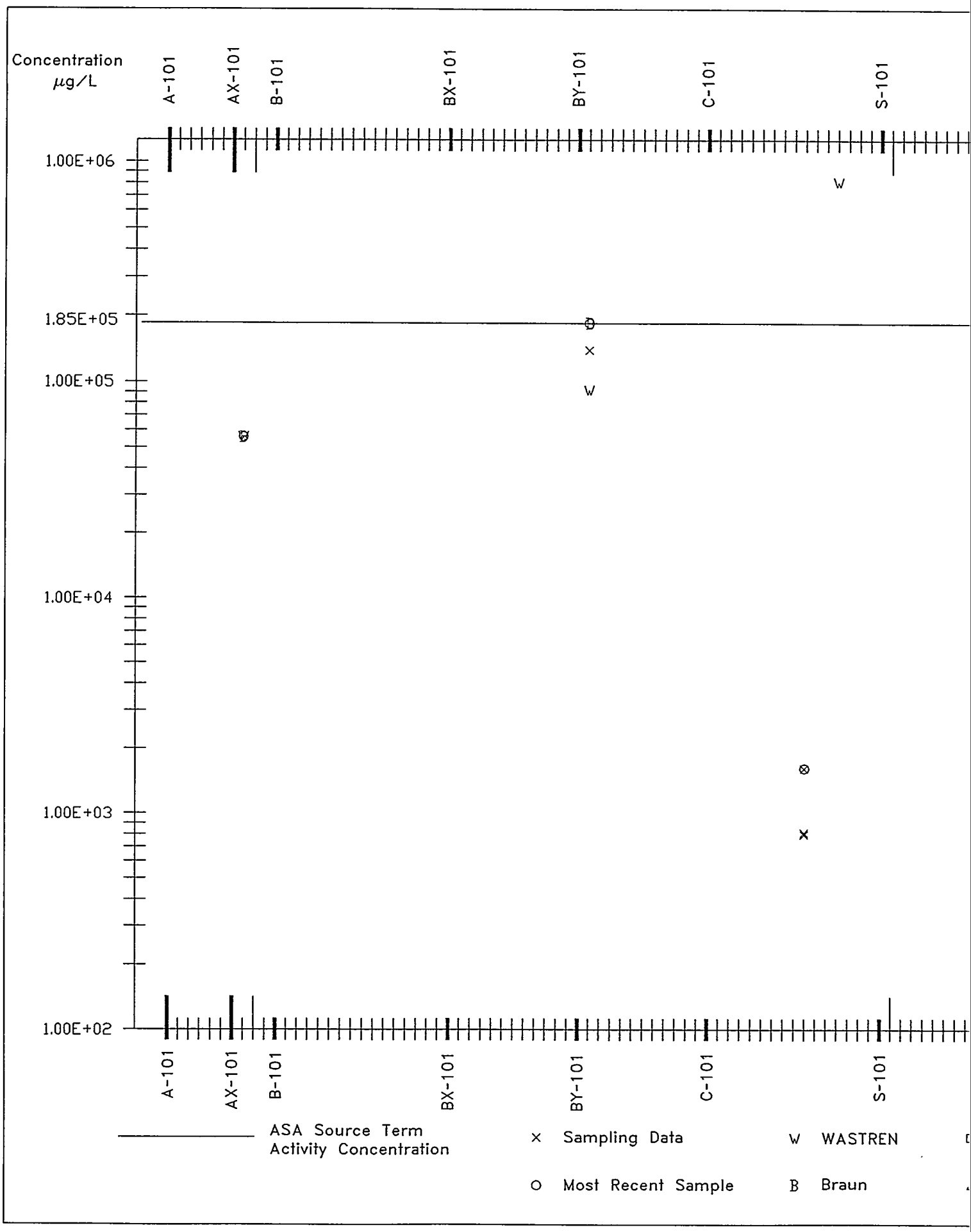
Extented tank lines represent Flamable Gas Watch List Tanks.

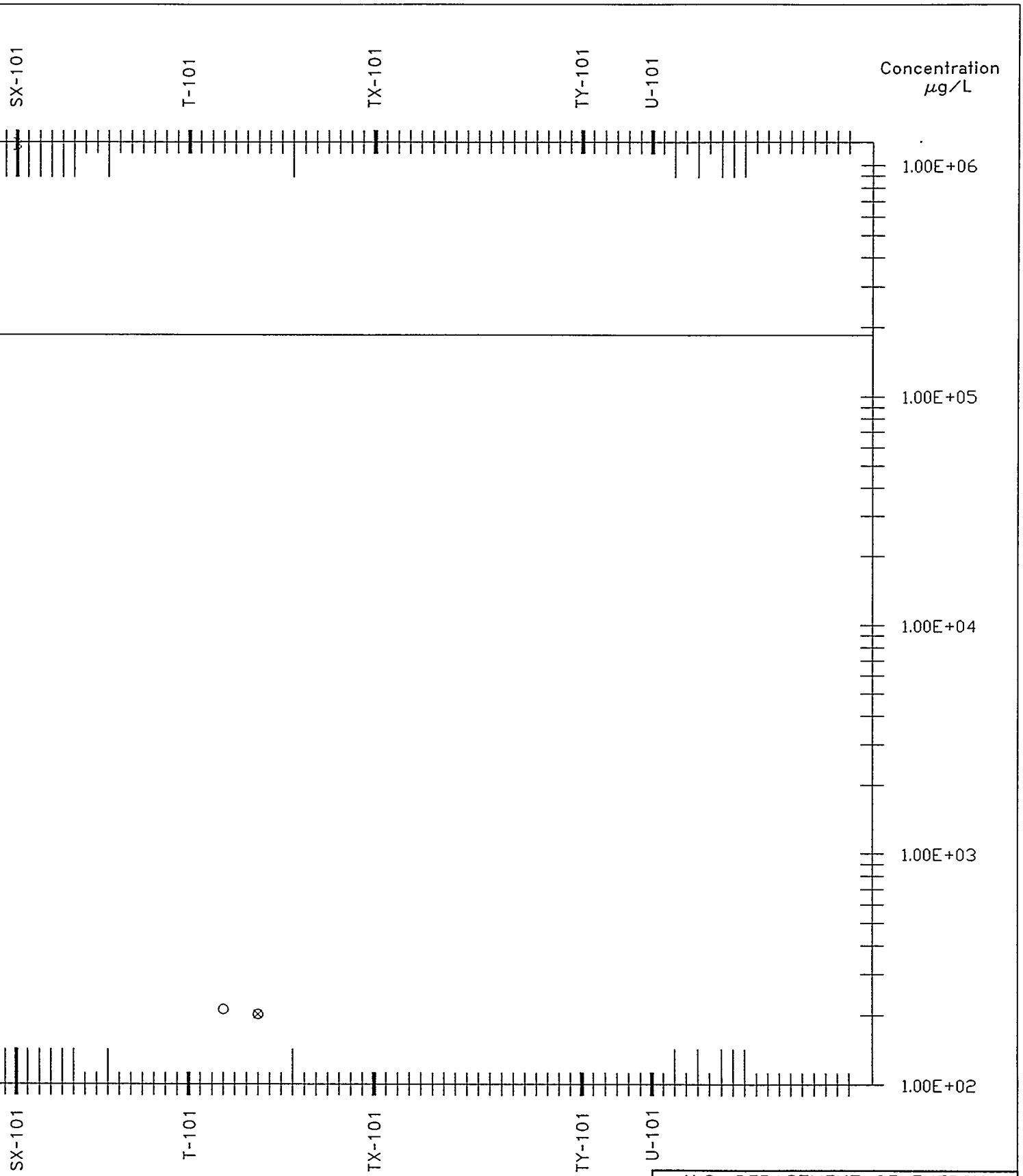
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Hg - Mercury Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC24 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+06
1.85E+05
1.00E+05
1.00E+04
1.00E+03
1.00E+02
W
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

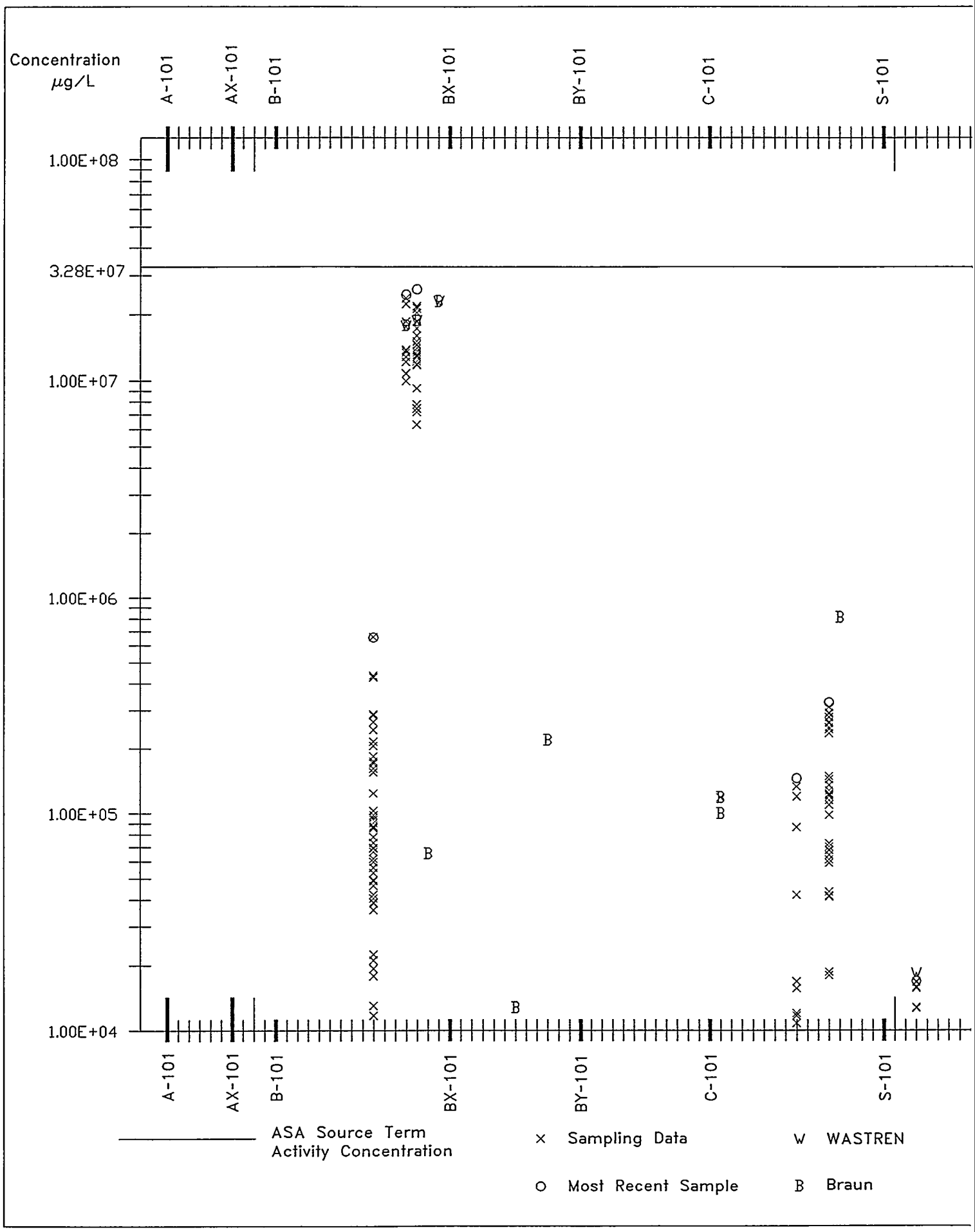
Extented tank lines represent Flamable Gas Watch List Tanks.

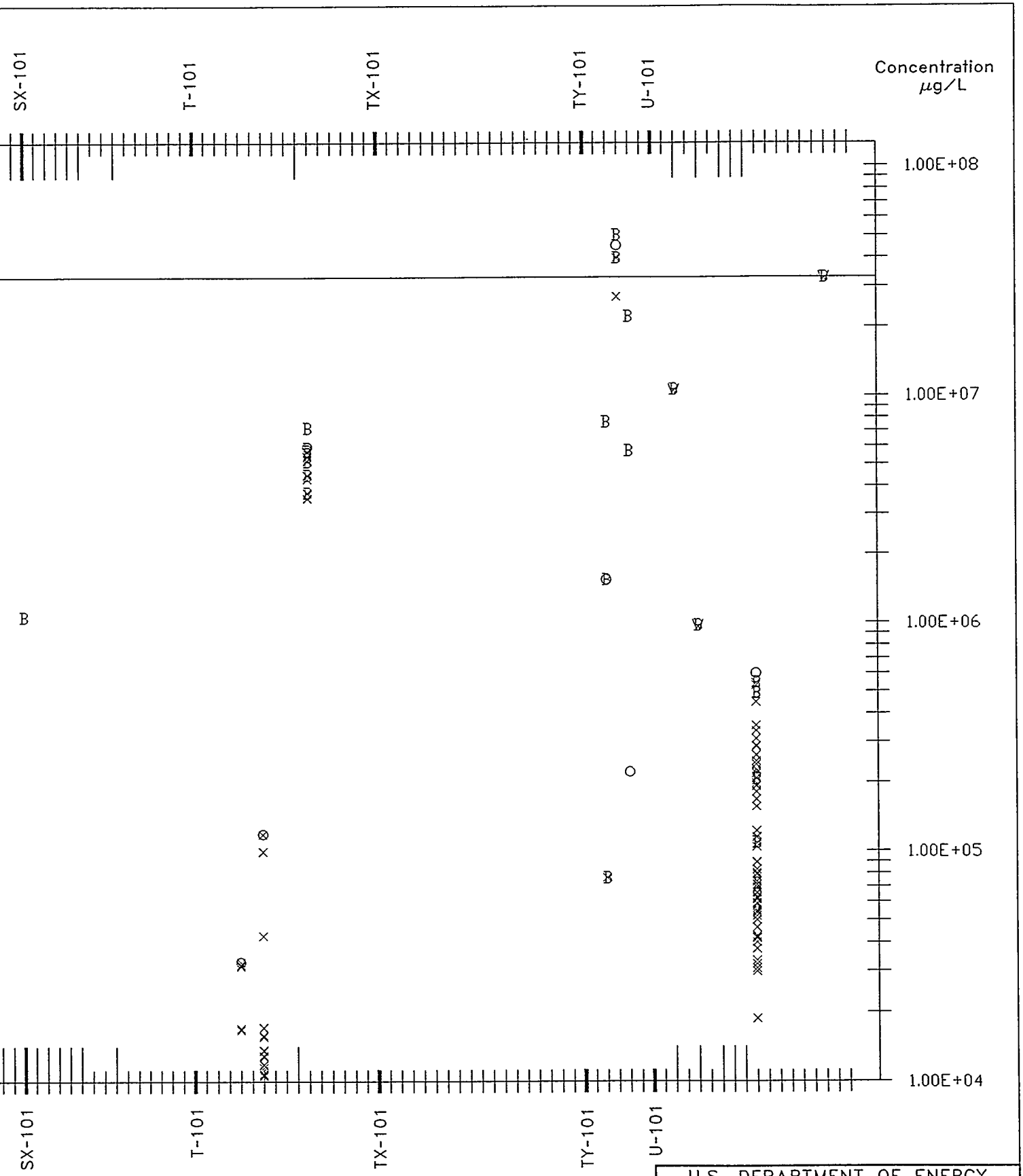
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
La - Lanthanum Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC25 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+08
3.28E+07
1.00E+07
1.00E+06
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

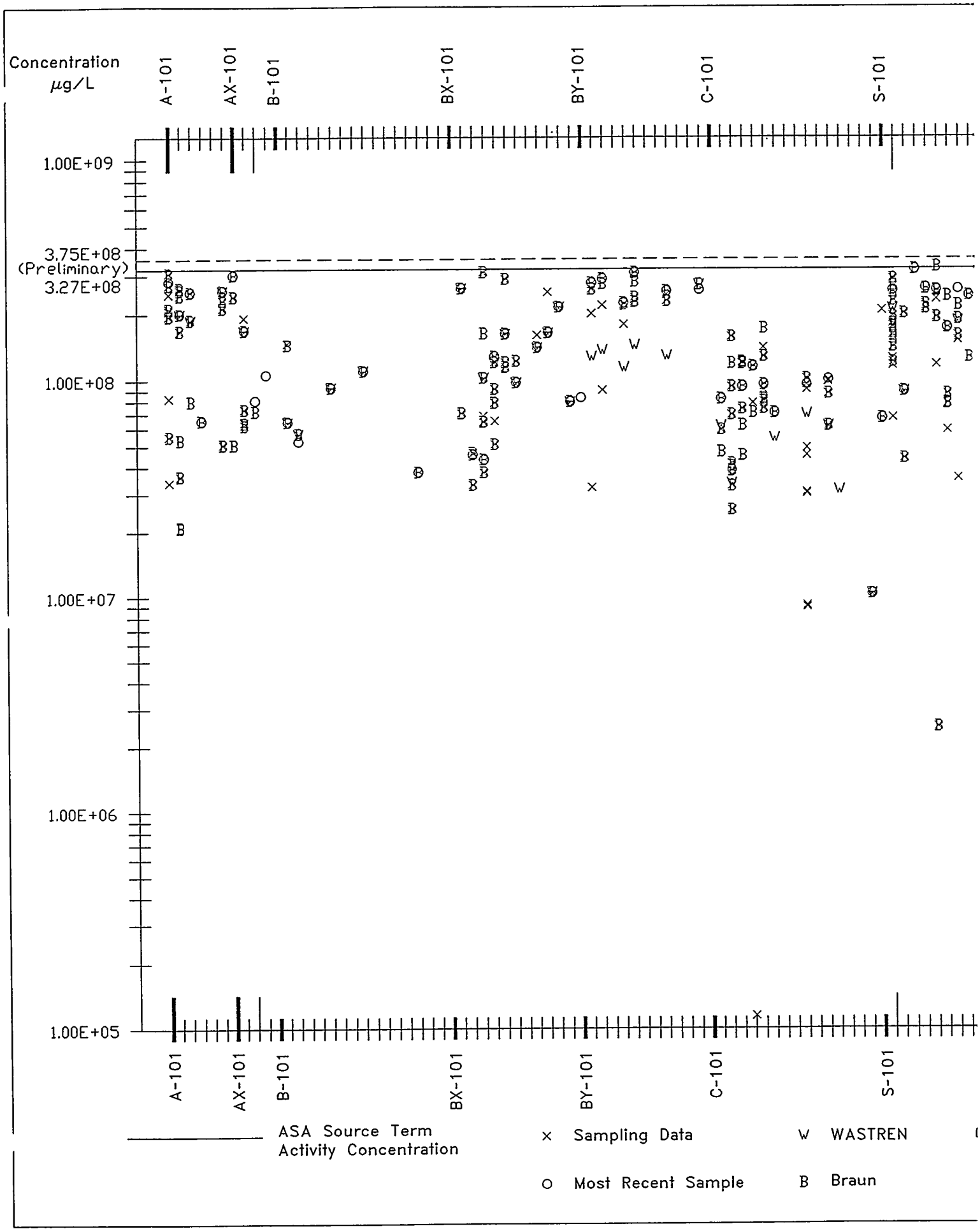
Extented tank lines represent Flamable Gas Watch List Tanks.

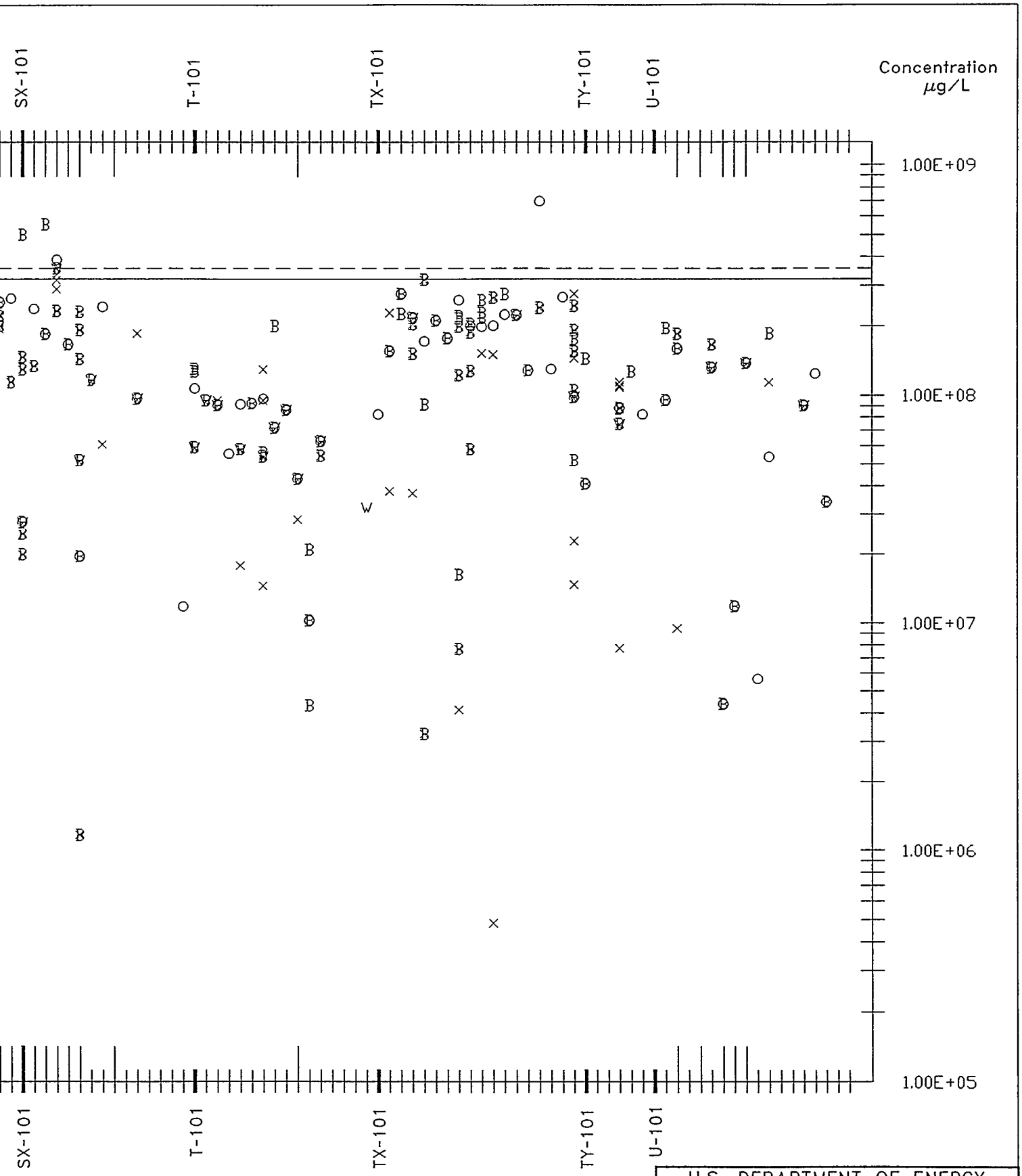
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
La - Lanthanum Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC26 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+09
3.75E+08
(Preliminary)
3.27E+08
1.00E+08
1.00E+07
1.00E+06
1.00E+05
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
O Most Recent Sample
B Braun



HTCE Inventory

TRAC

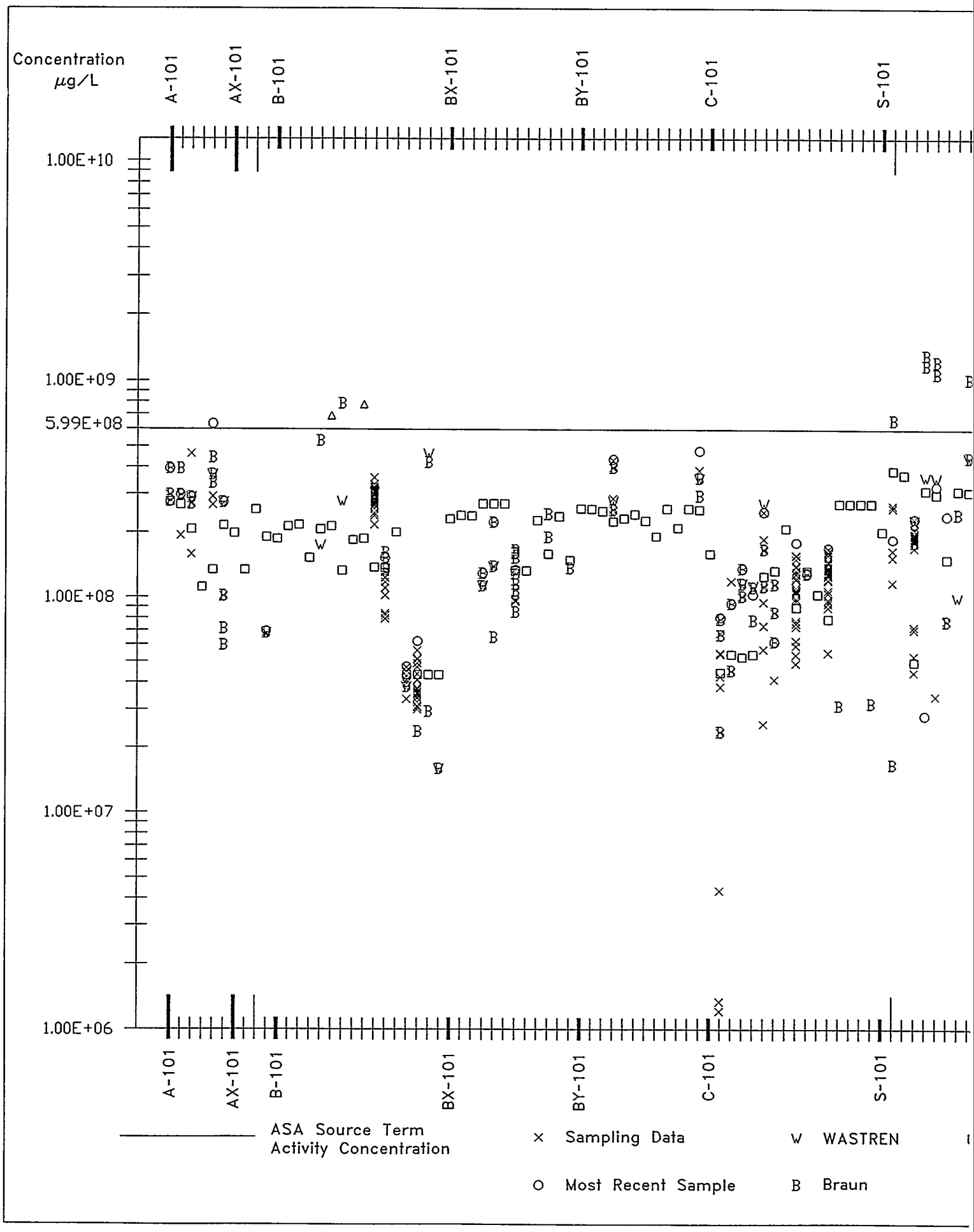
Extented tank lines represent Flamable Gas Watch List Tanks.

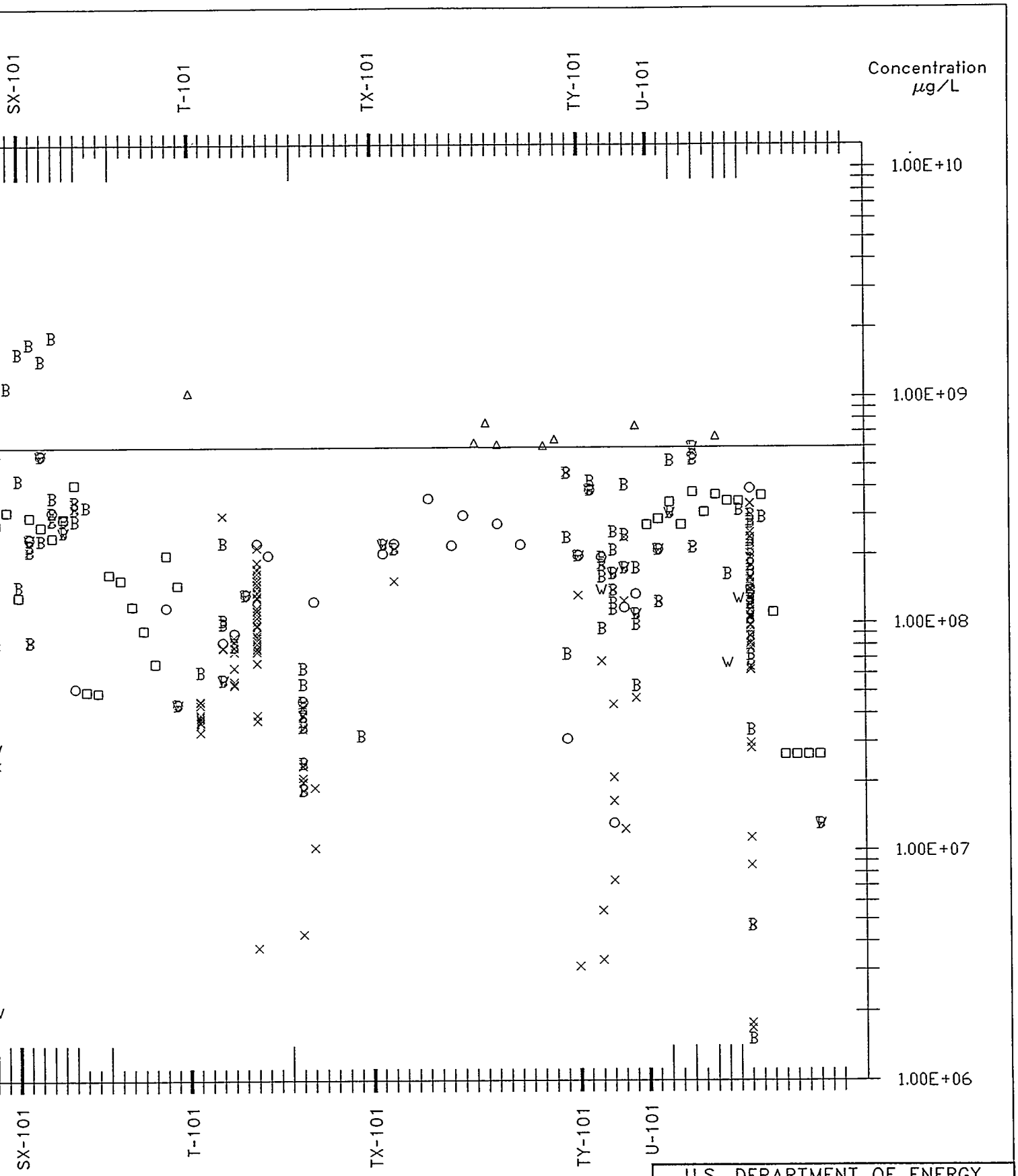
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Na - Sodium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CC27 | JOB NO E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+10
1.00E+09
5.99E+08
1.00E+08
1.00E+07
1.00E+06
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

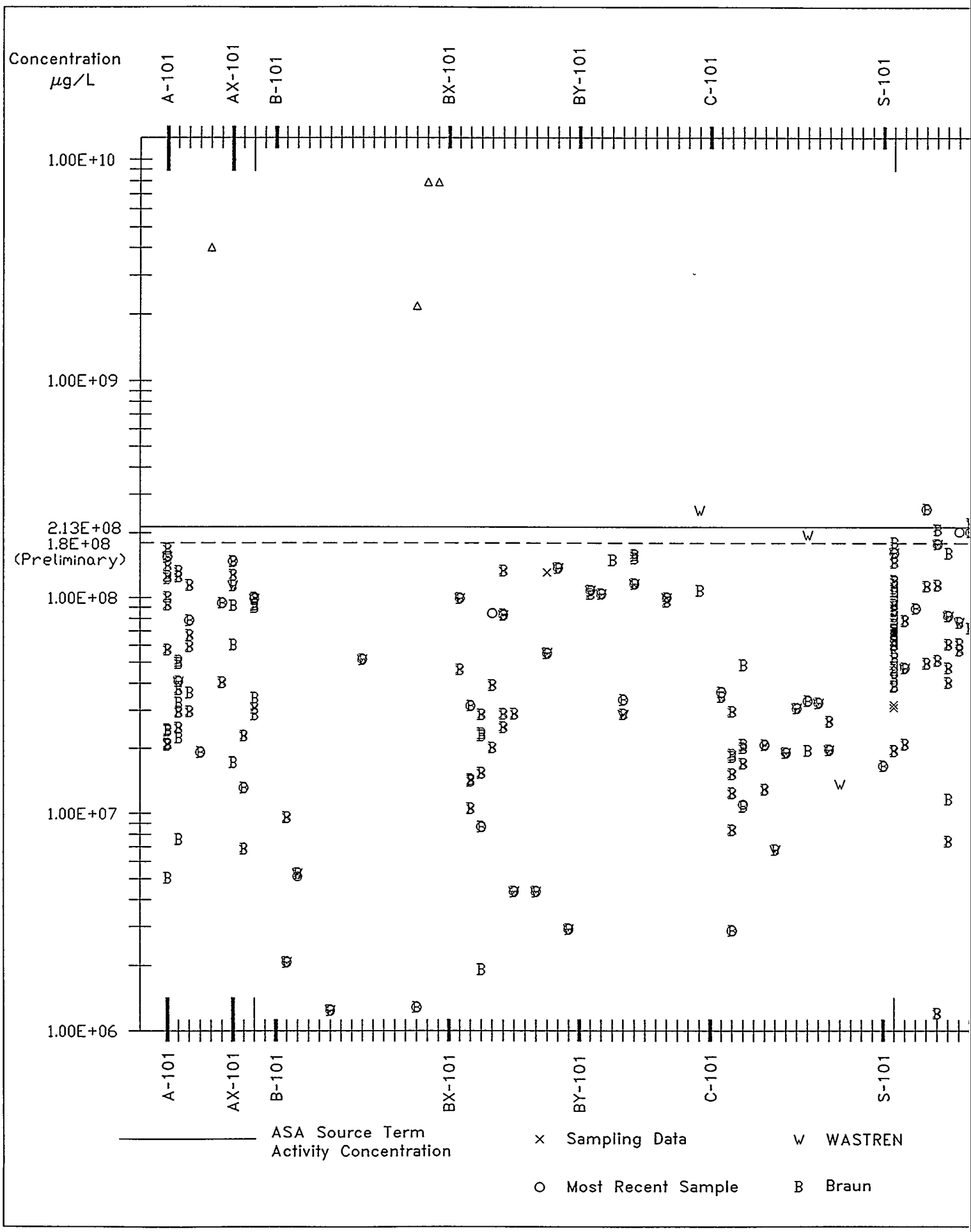
Extented tank lines represent Flamable Gas Watch List Tanks.

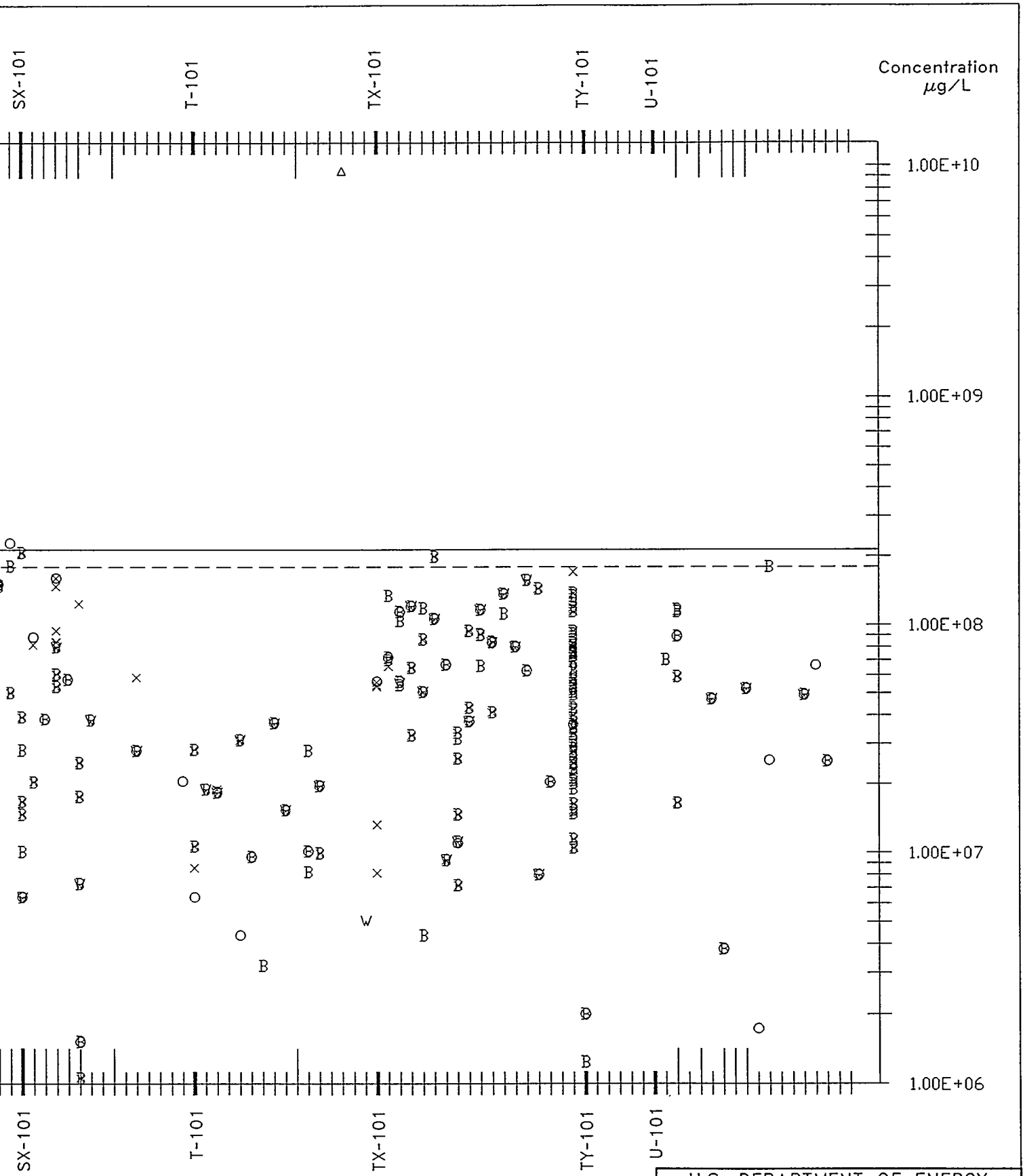
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Na - Sodium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CC28 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+10
1.00E+09
2.13E+08
1.8E+08
(Preliminary)
1.00E+08
1.00E+07
1.00E+06
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



HTCE Inventory

TRAC

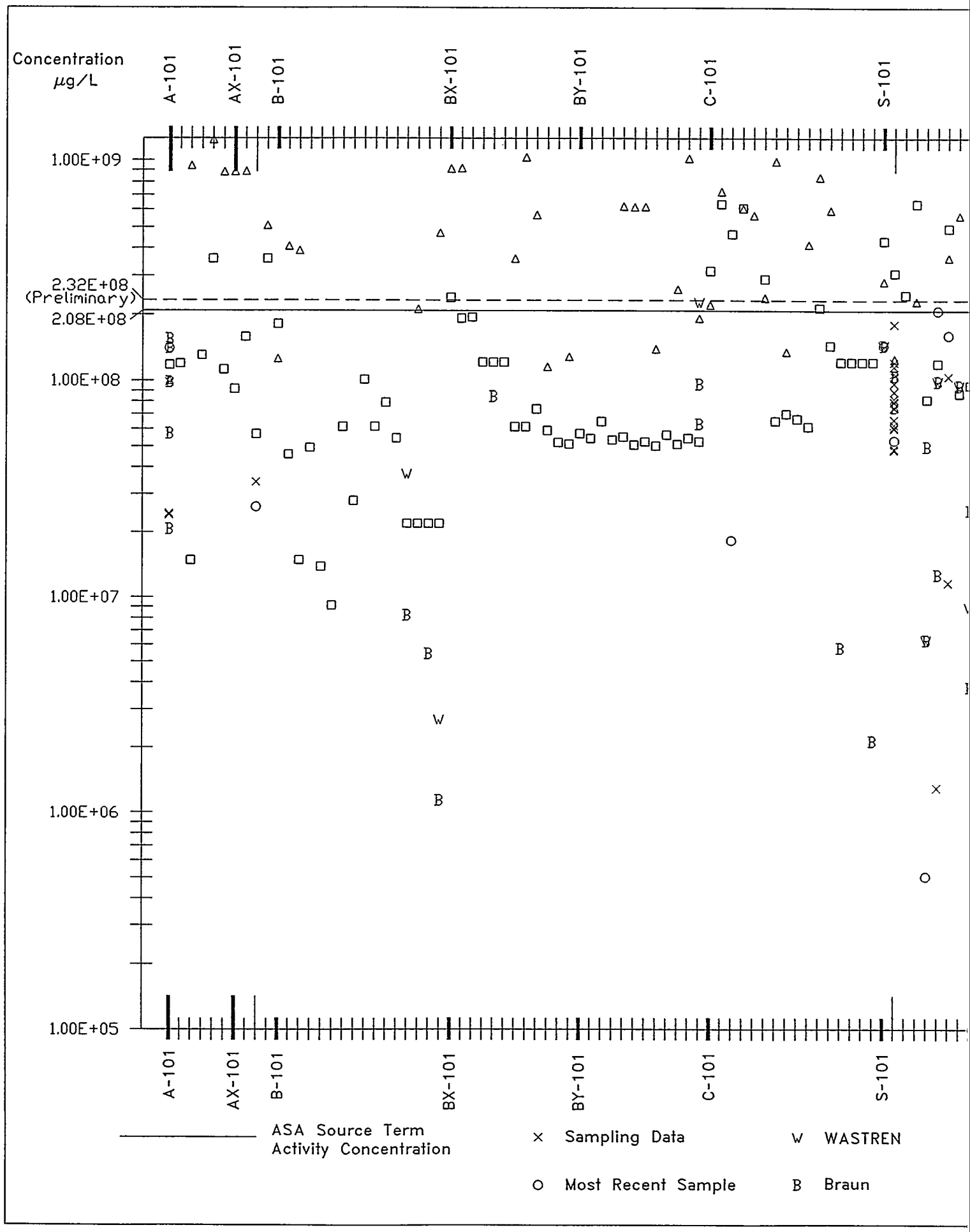
Extented tank lines represent Flamable Gas Watch List Tanks.

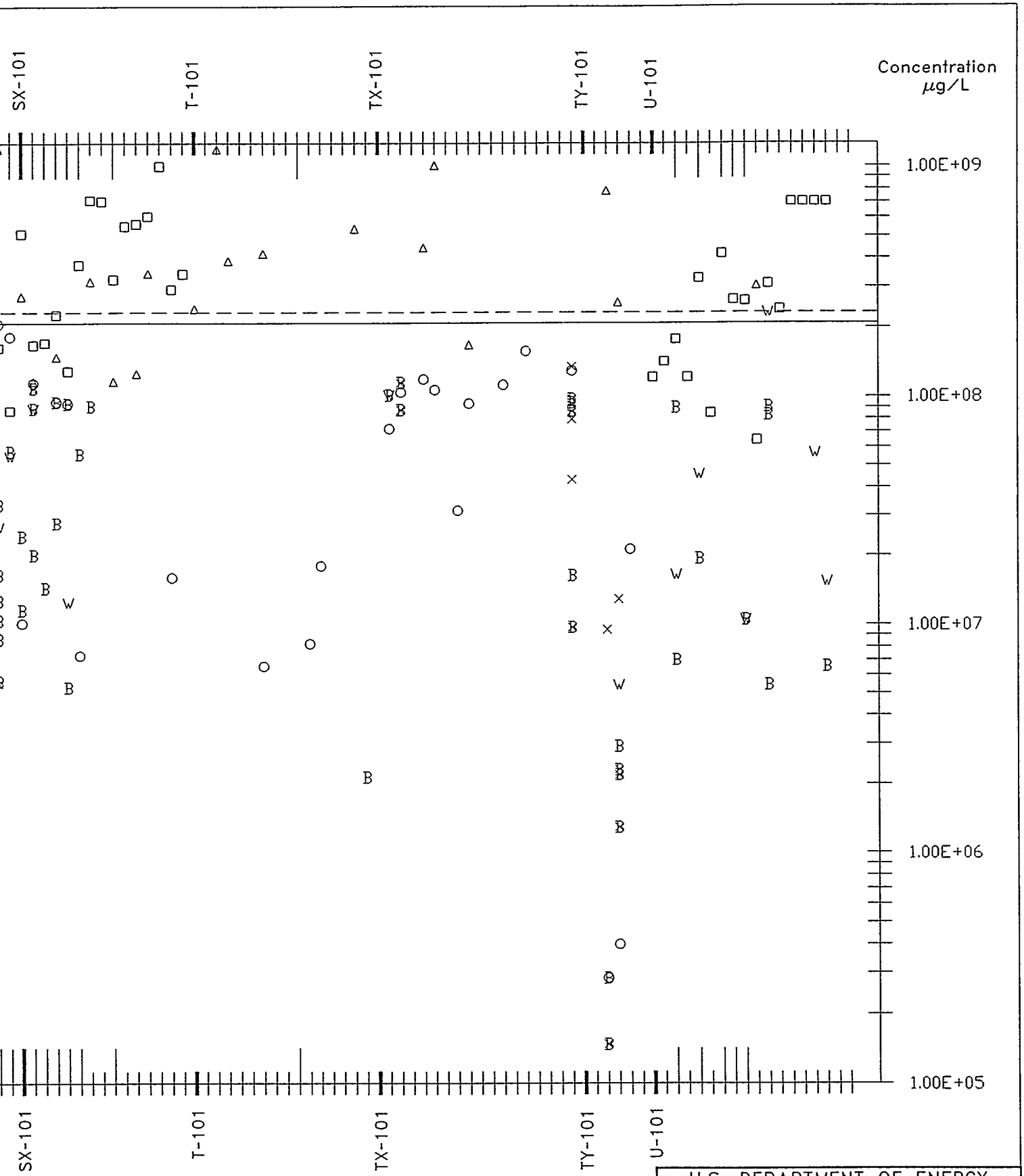
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
NaOH-Sodium Hydroxide Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC29 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+09
2.32E+08
(Preliminary)
2.08E+08
1.00E+08
1.00E+07
1.00E+06
1.00E+05
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

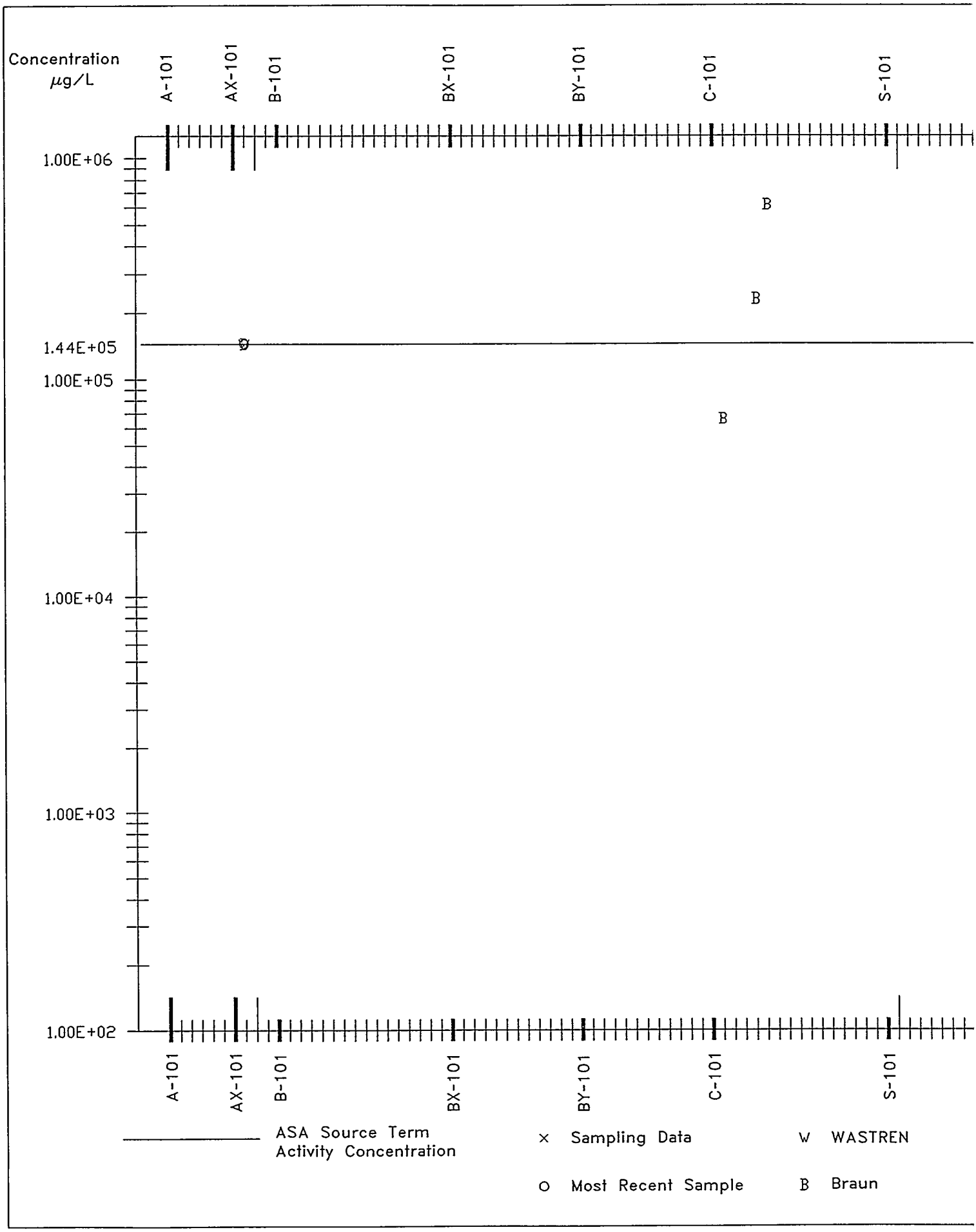
Extented tank lines represent Flamable Gas Watch List Tanks.

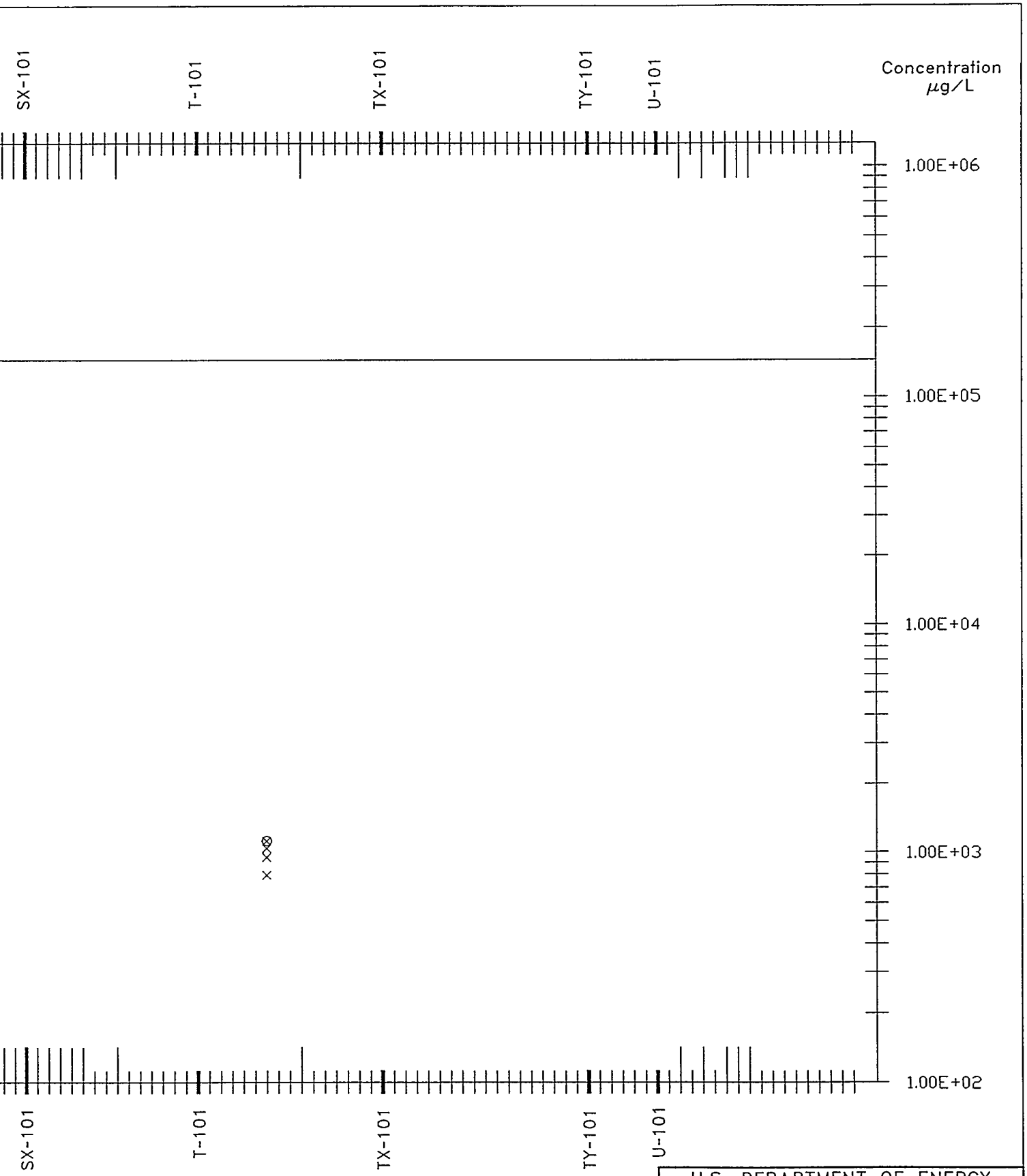
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
NaOH-Sodium Hydroxide Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC30 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+06
1.44E+05
1.00E+05
1.00E+04
1.00E+03
1.00E+02
B
B
B
ASA Source Term
Activity Concentration
× Sampling Data
O Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

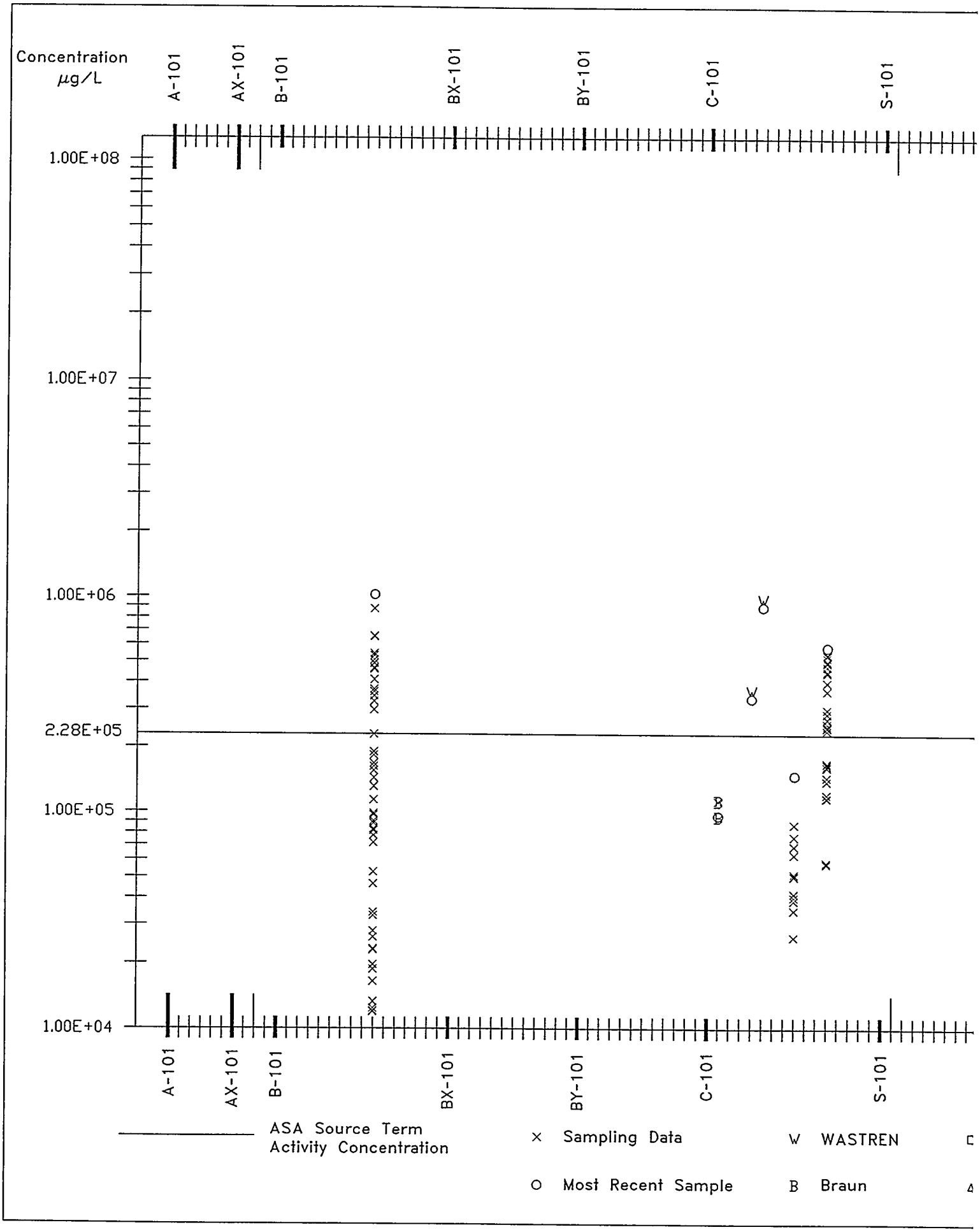
Extented tank lines represent Flamable Gas Watch List Tanks.

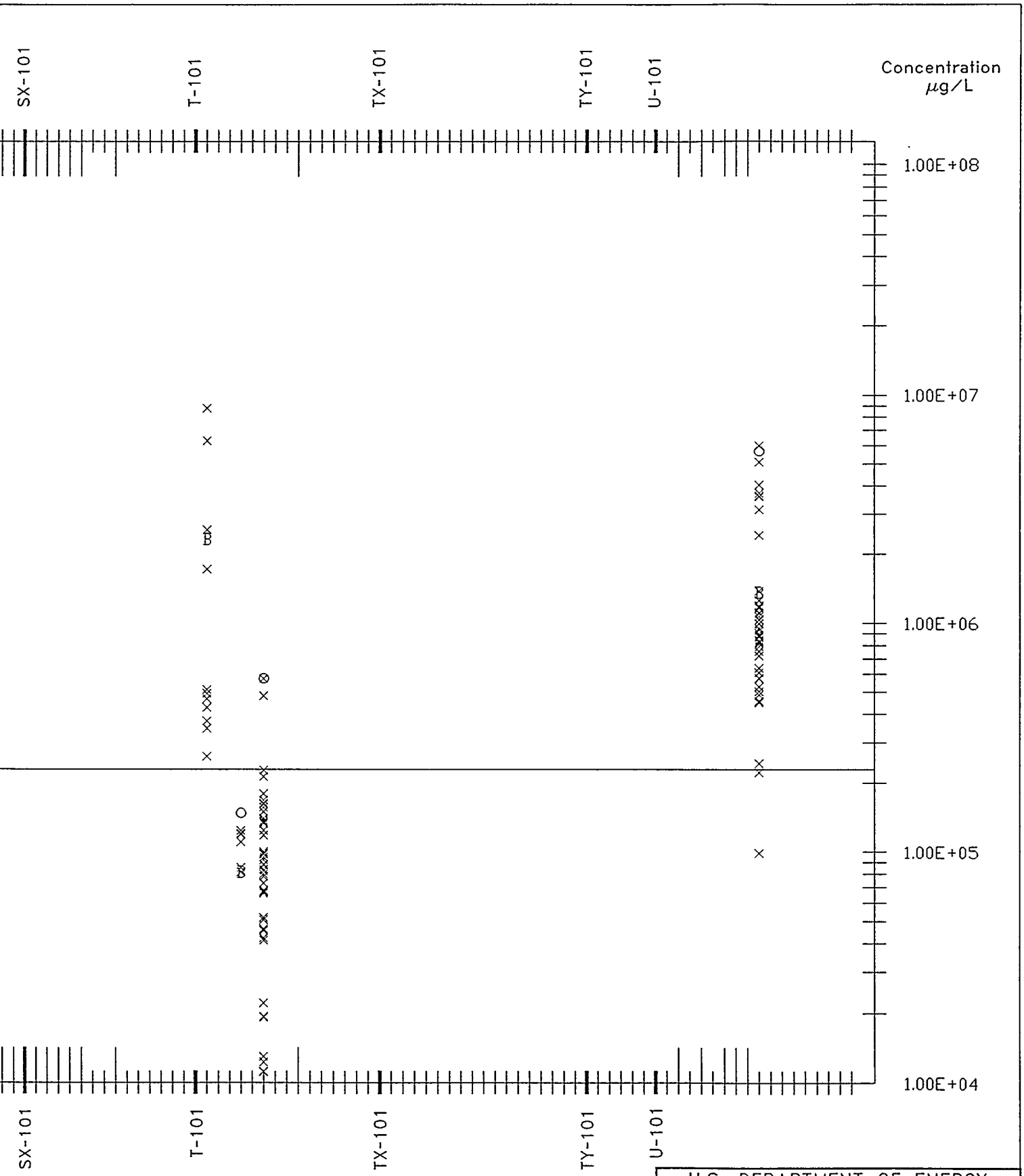
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Nd - Neodymium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC31 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+08
1.00E+07
1.00E+06
2.28E+05
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

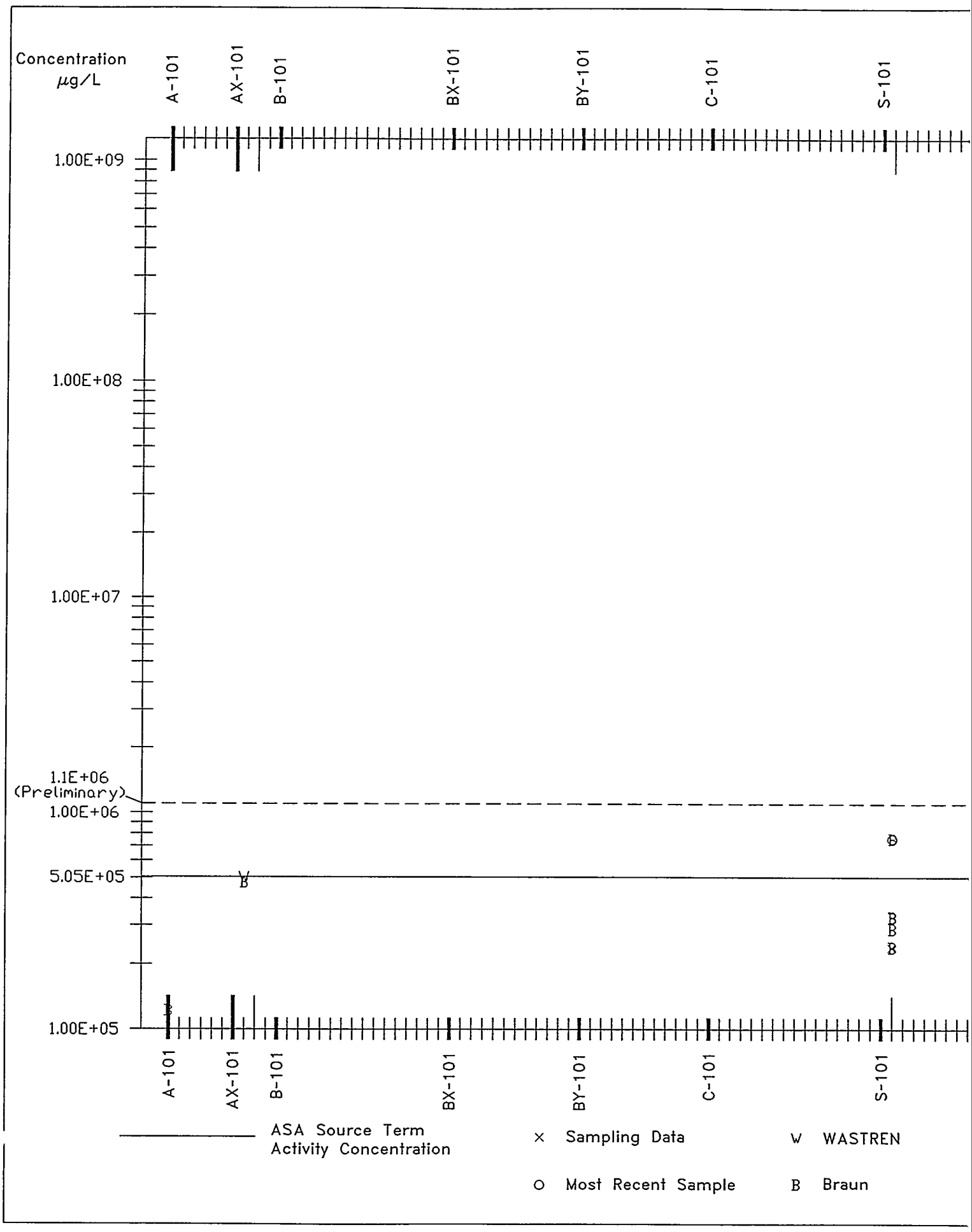
Extented tank lines represent Flamable Gas Watch List Tanks.

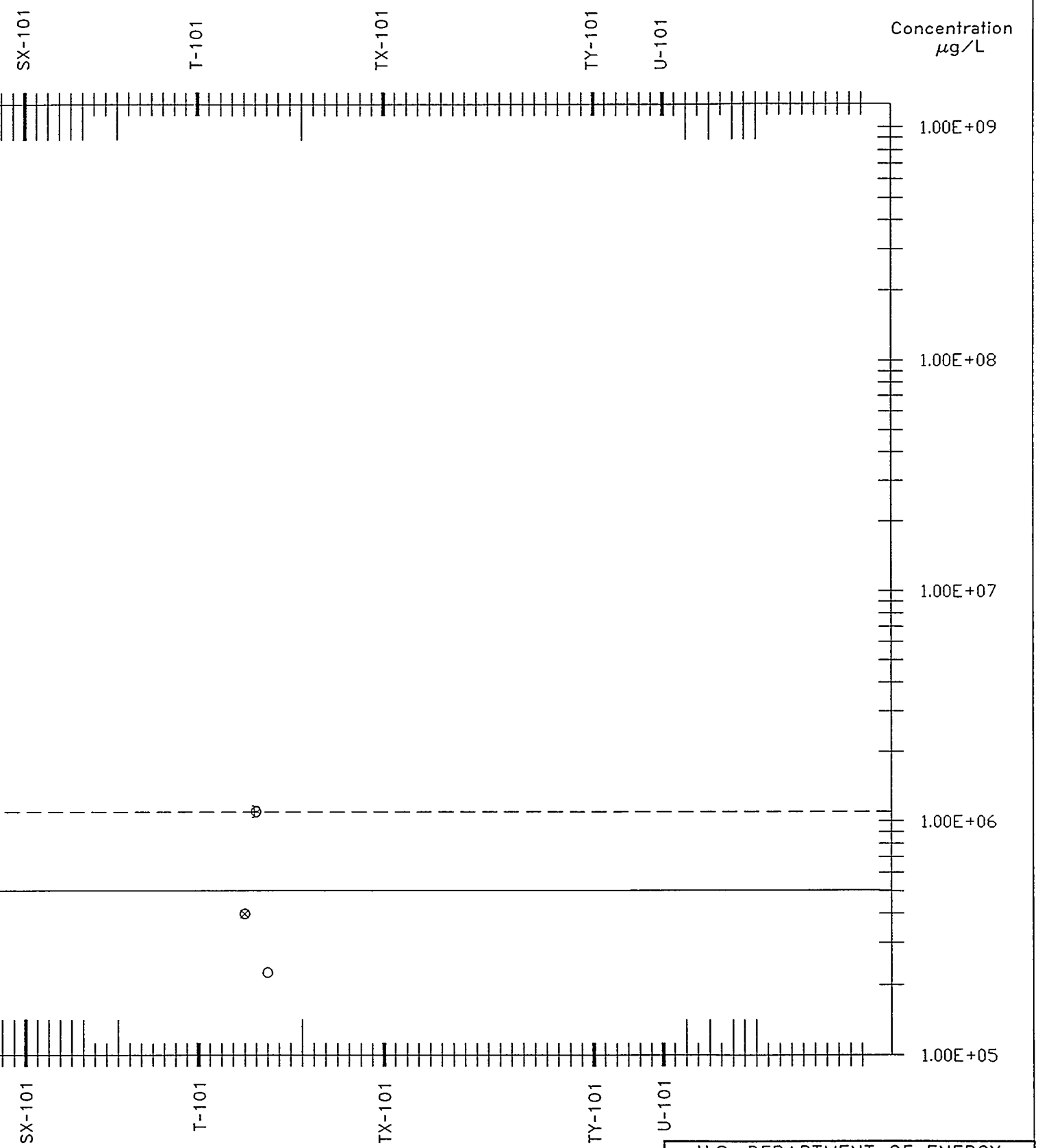
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Nd - Neodymium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC32 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+09
1.00E+08
1.00E+07
1.1E+06
(Preliminary)
1.00E+06
5.05E+05
1.00E+05
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



HTCE Inventory

TRAC

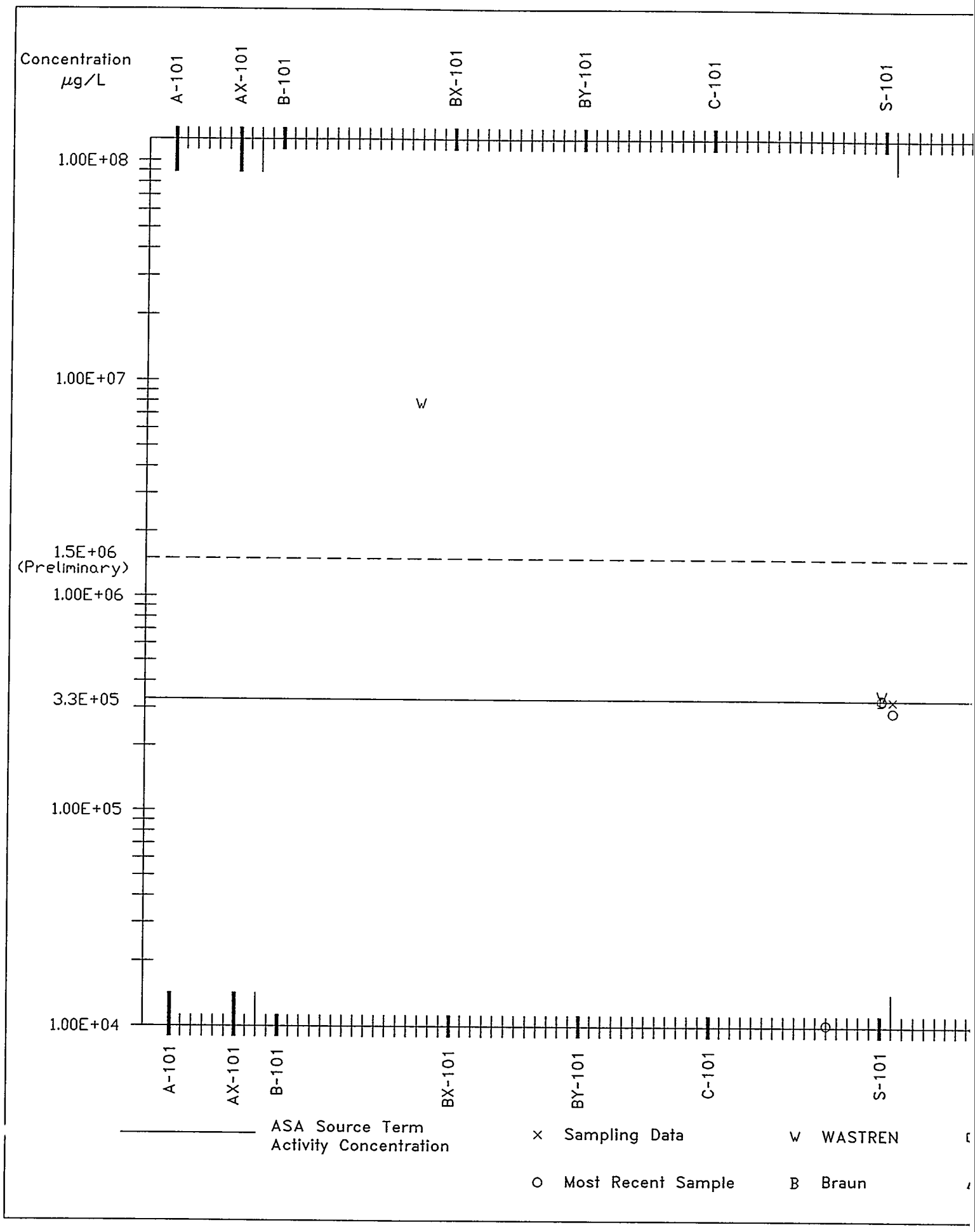
Extented tank lines represent Flamable Gas Watch List Tanks.

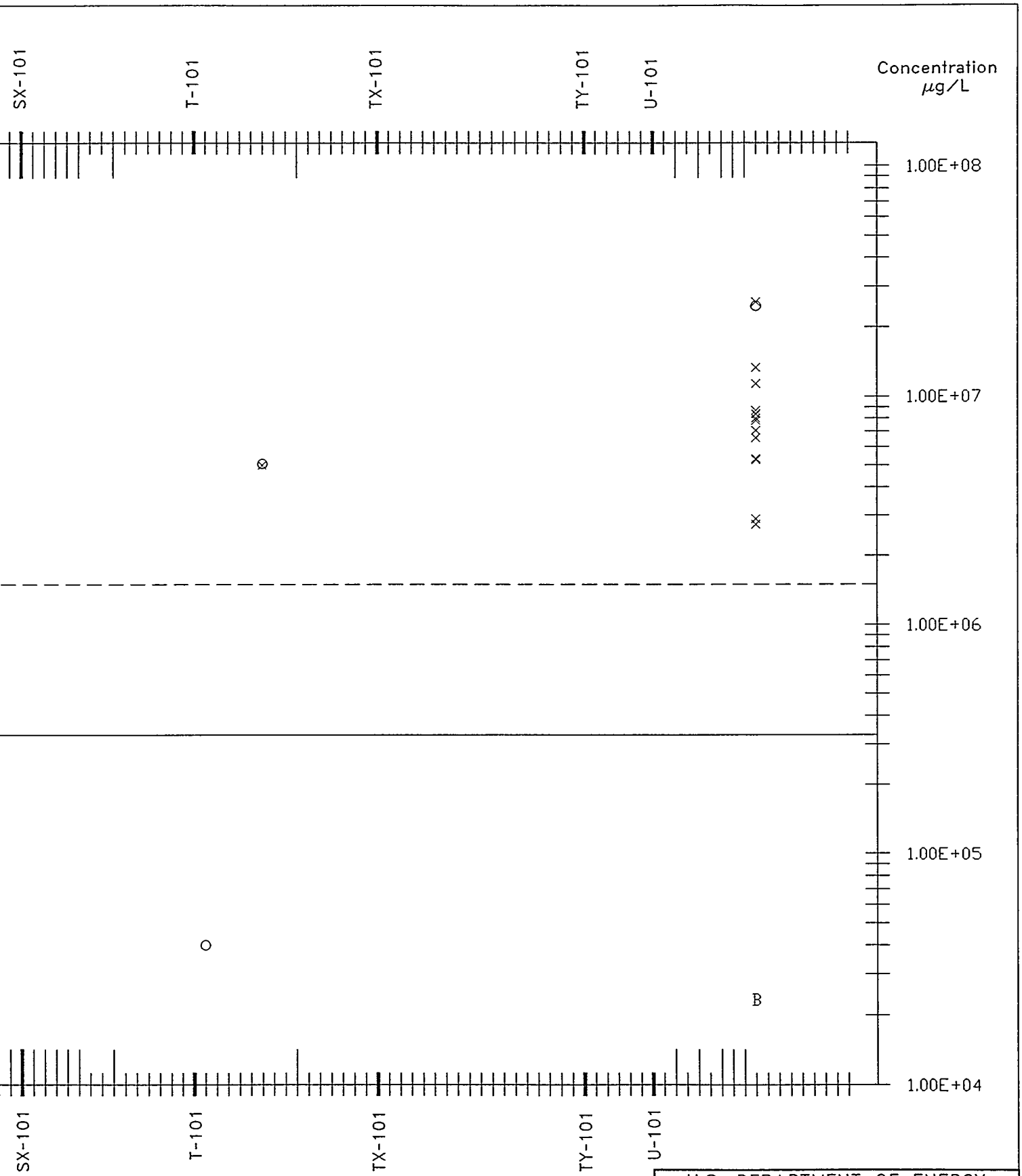
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
NH3 - Ammonia Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC33 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+08
1.00E+07
1.5E+06
(Preliminary)
1.00E+06
3.3E+05
1.00E+05
1.00E+04
W
ASA Source Term
Activity Concentration
× Sampling Data
O Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

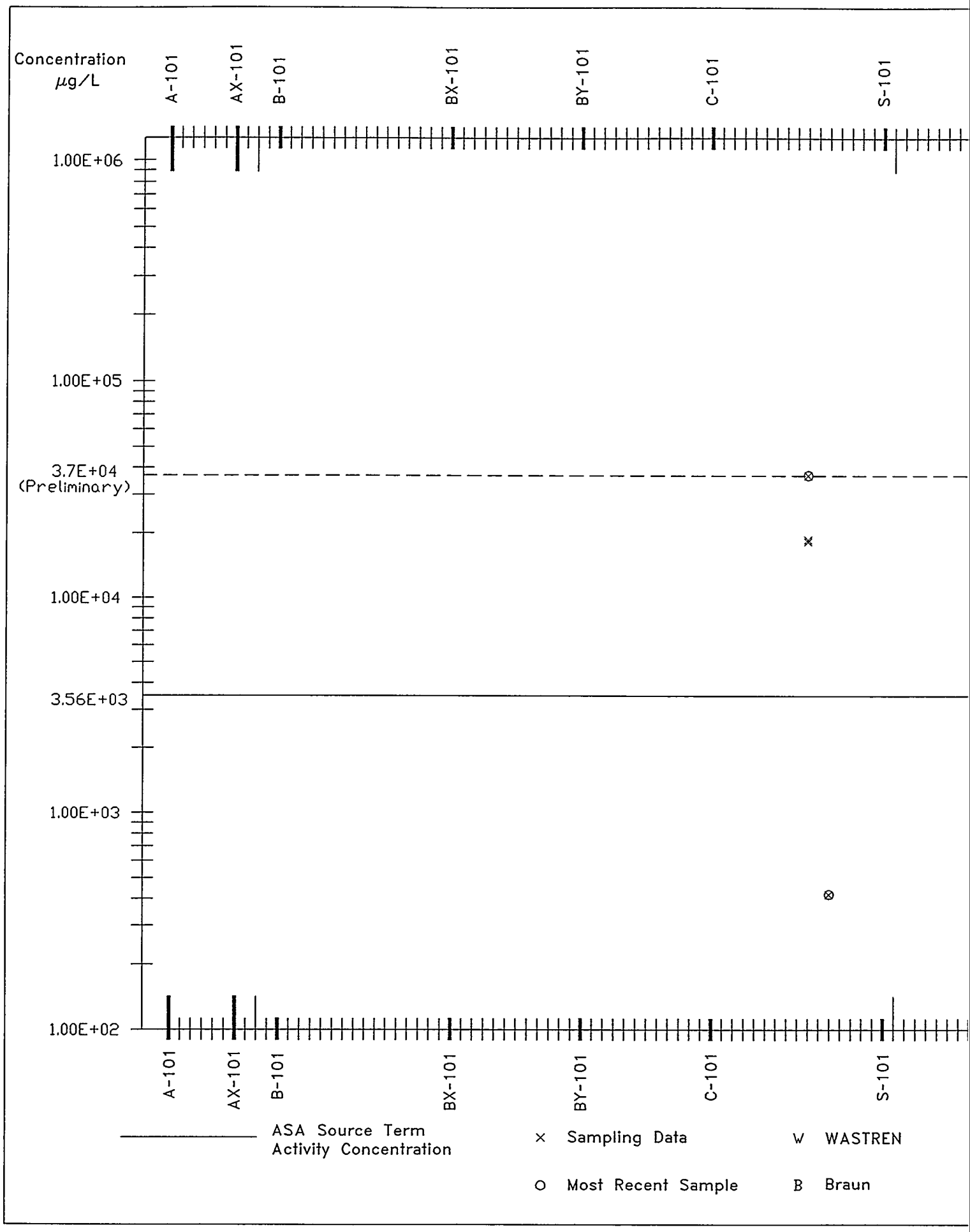
Extented tank lines represent Flamable Gas Watch List Tanks.

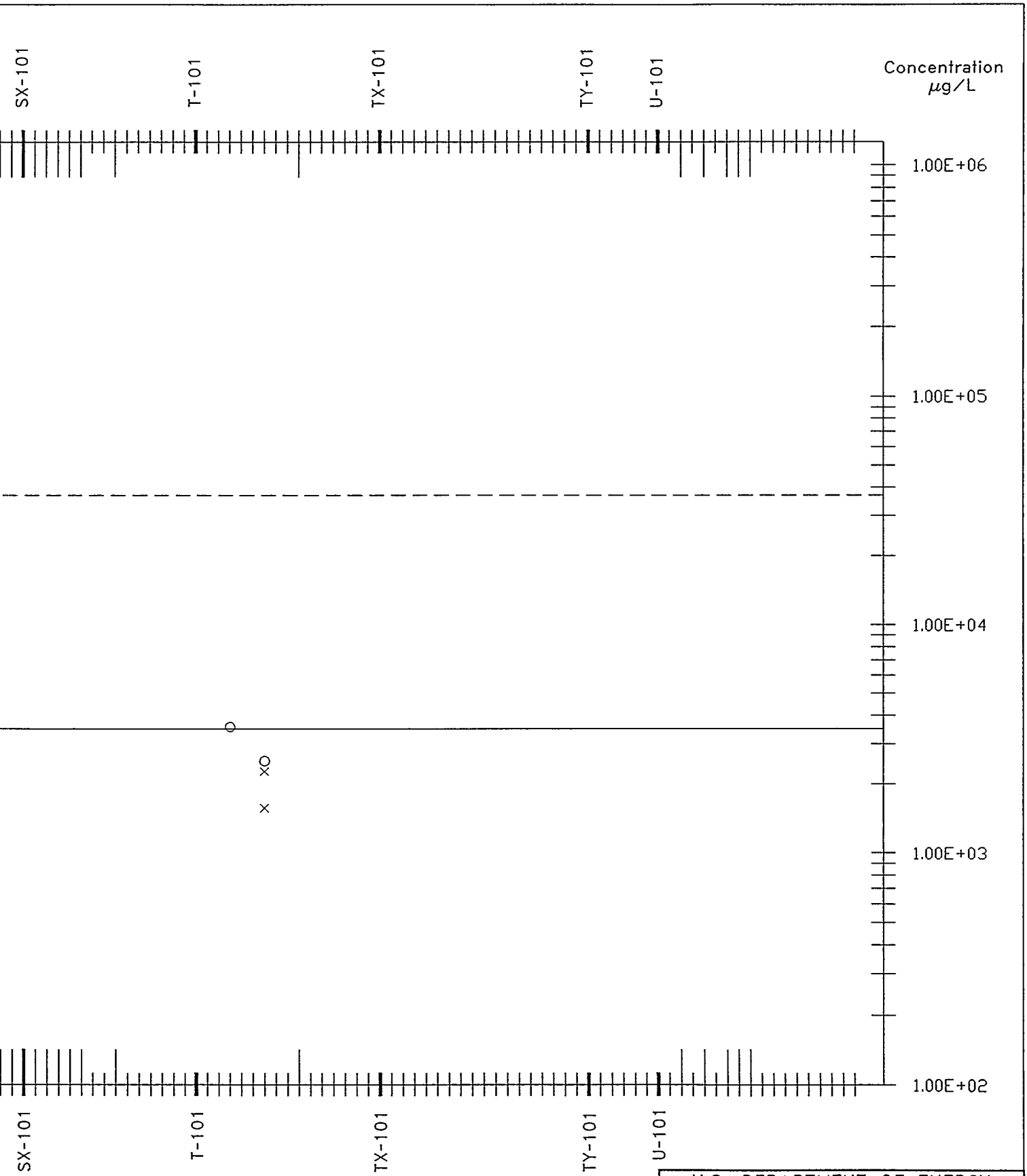
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
NH3 - Ammonia Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC34 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+06
1.00E+05
3.7E+04
(Preliminary)
1.00E+04
3.56E+03
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
× Sampling Data
O Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

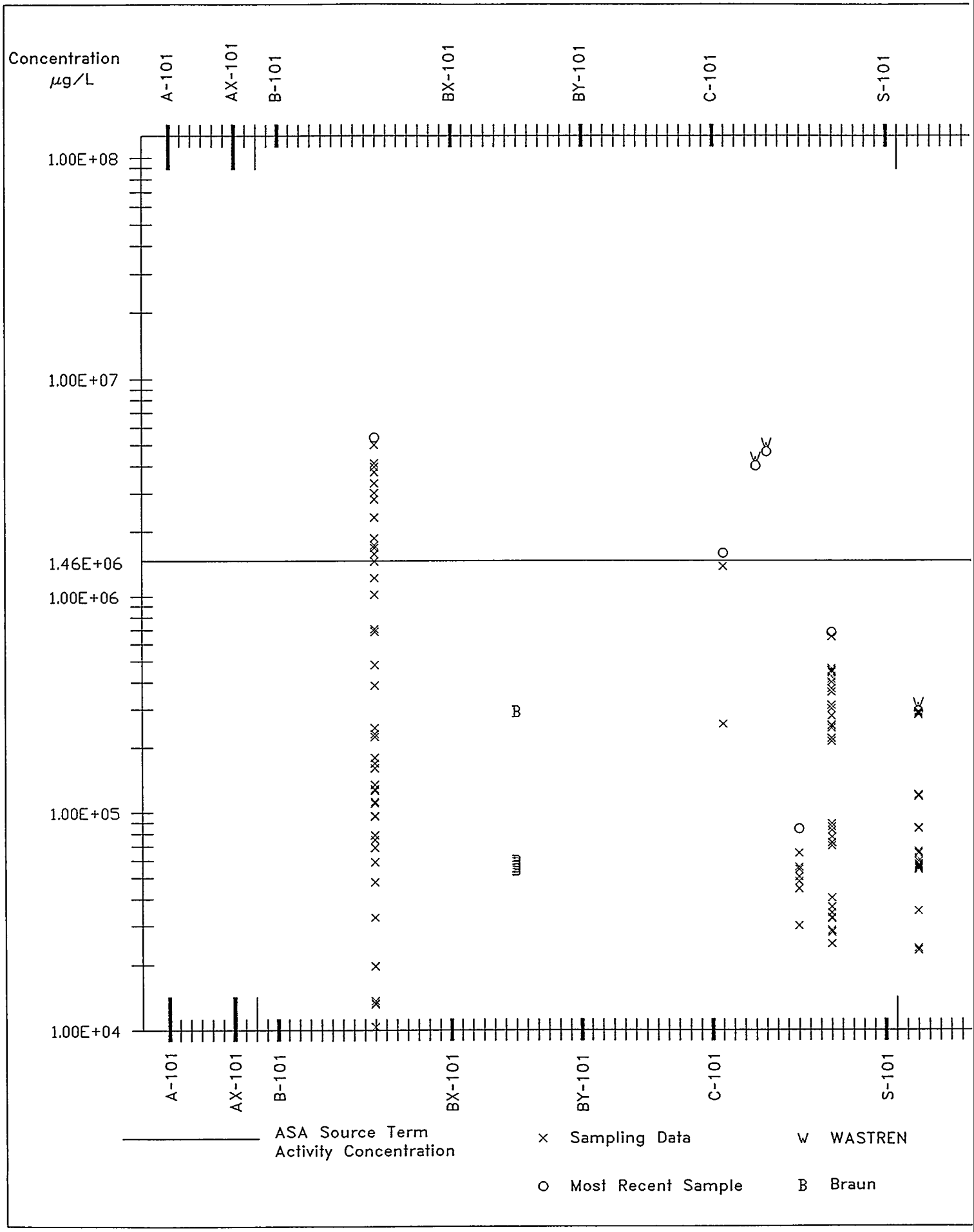
Extented tank lines represent Flamable Gas Watch List Tanks.

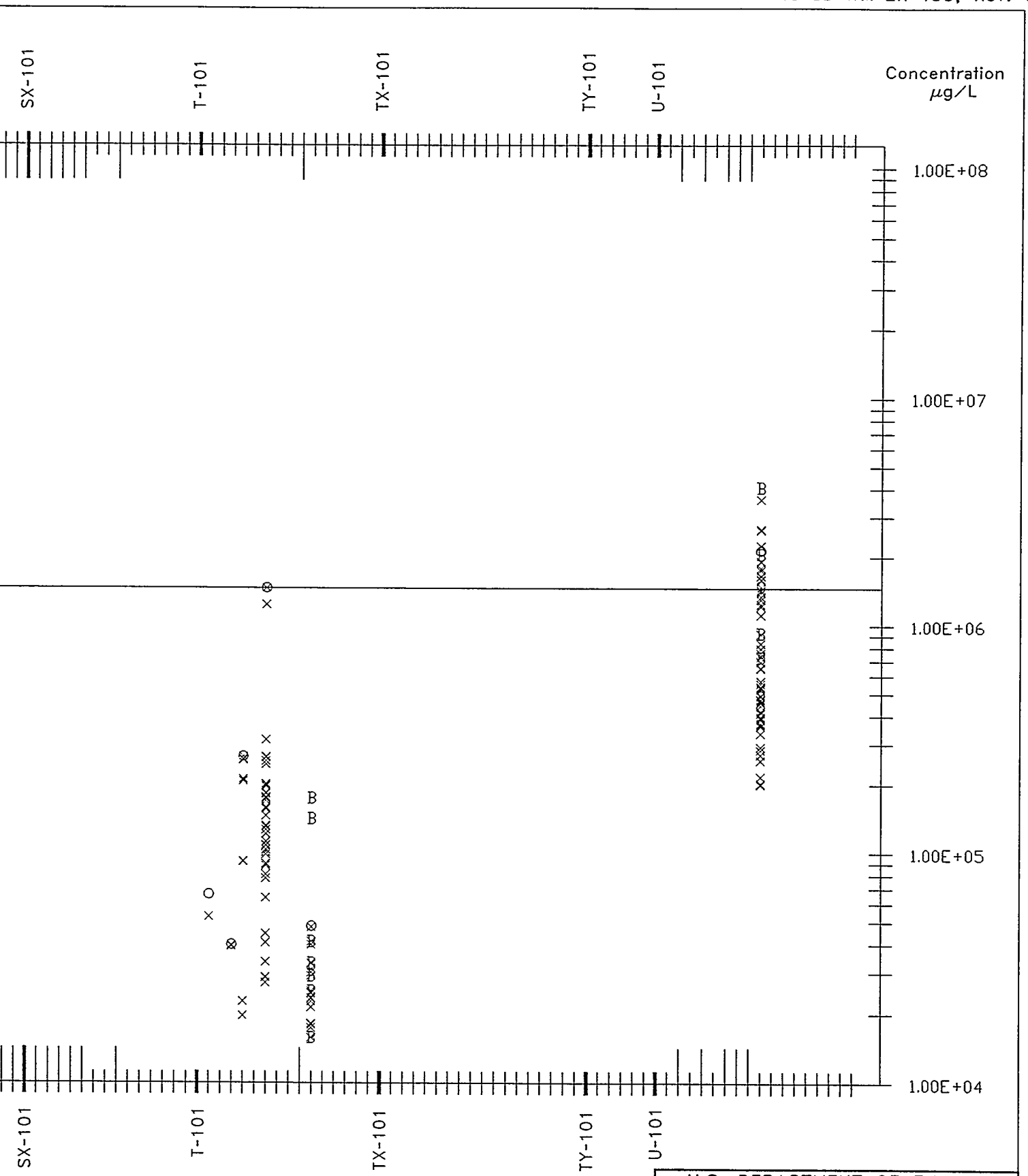
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Sb - Antimony Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC35 | JOB NO E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+08
1.00E+07
1.46E+06
1.00E+06
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

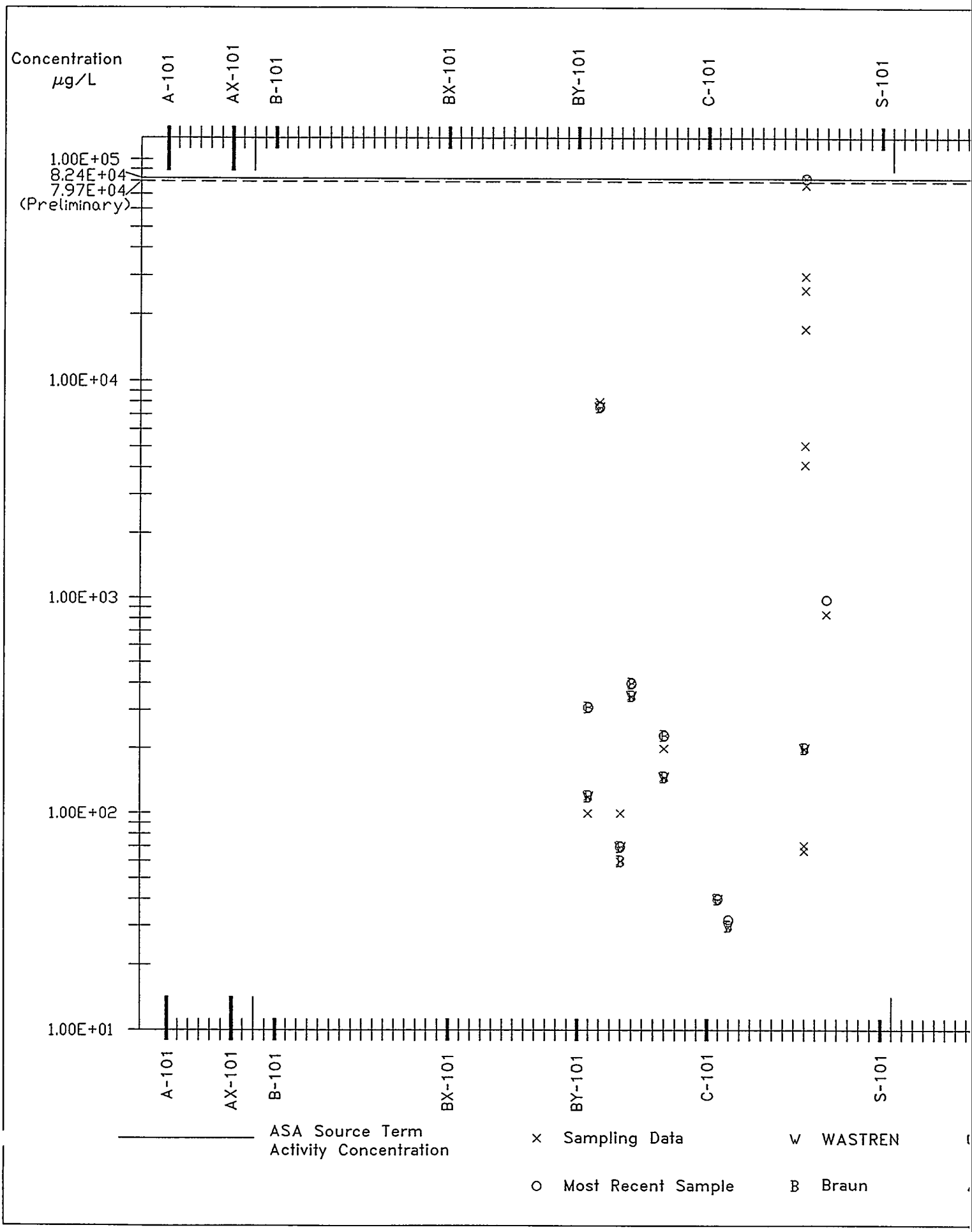
Extented tank lines represent Flamable Gas Watch List Tanks.

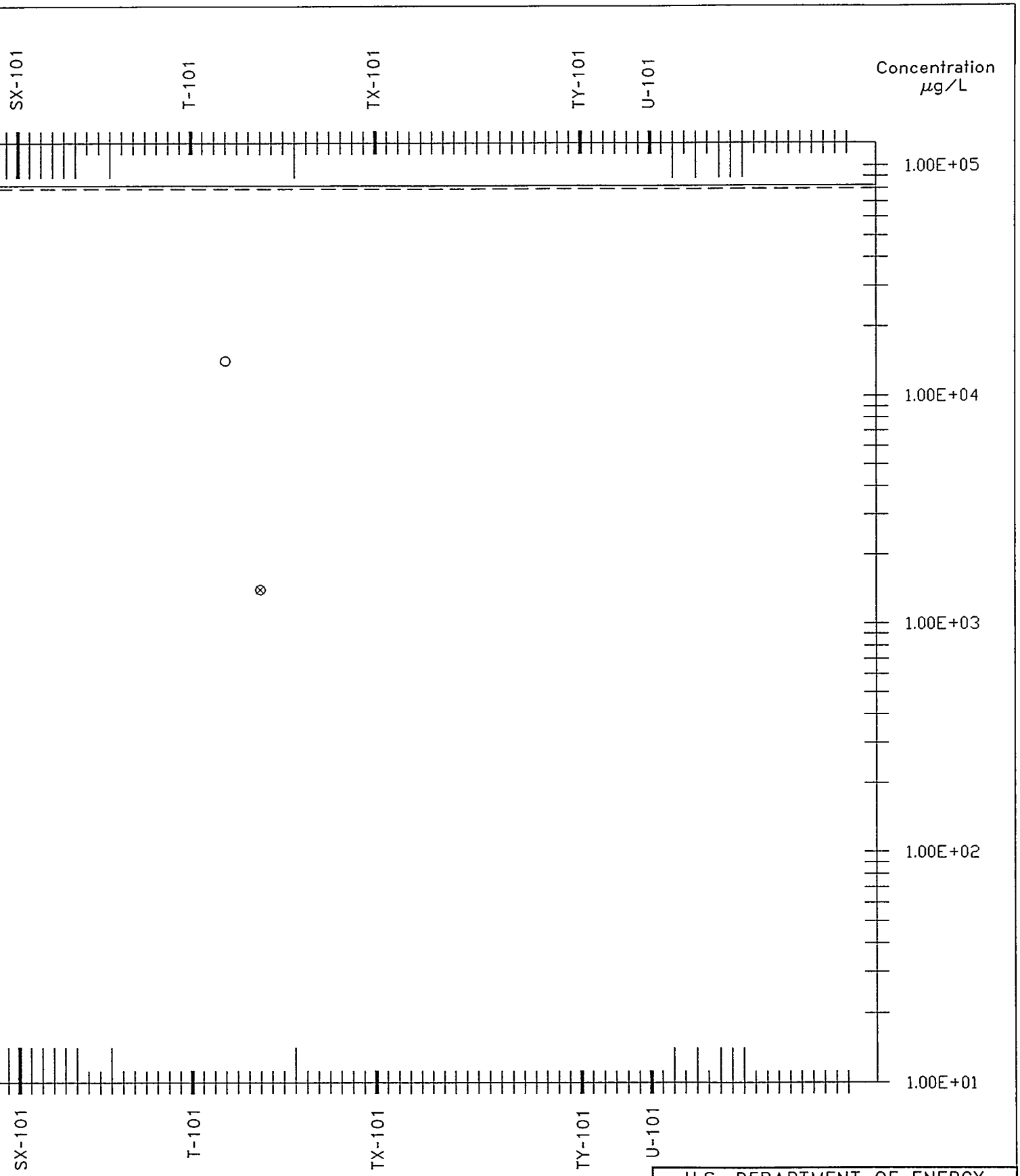
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Sb - Antimony Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC36 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+05
8.24E+04
7.97E+04
(Preliminary)
1.00E+04
1.00E+03
1.00E+02
1.00E+01
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
O Most Recent Sample
B Braun



HTCE Inventory

TRAC

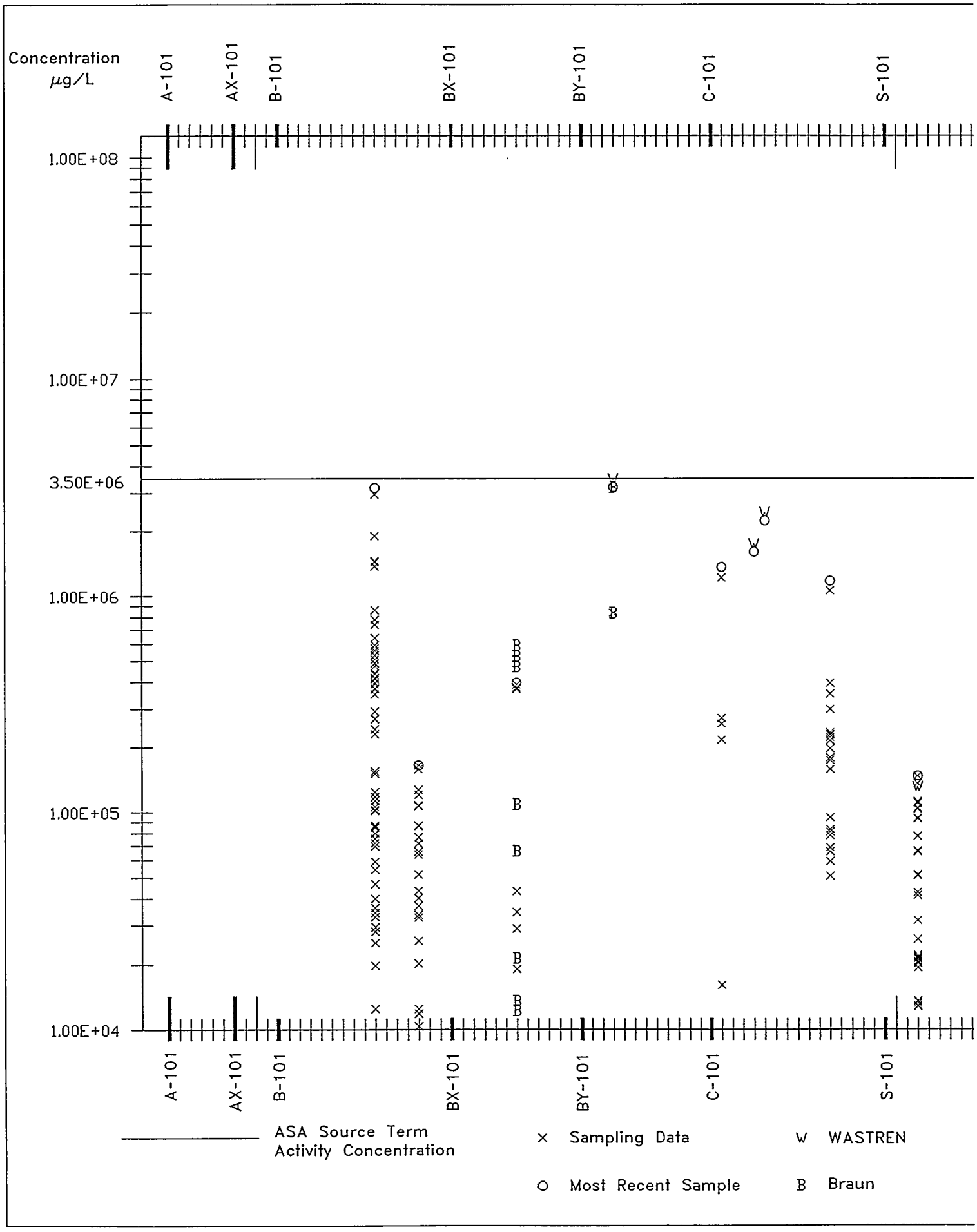
Extented tank lines represent Flamable Gas Watch List Tanks.

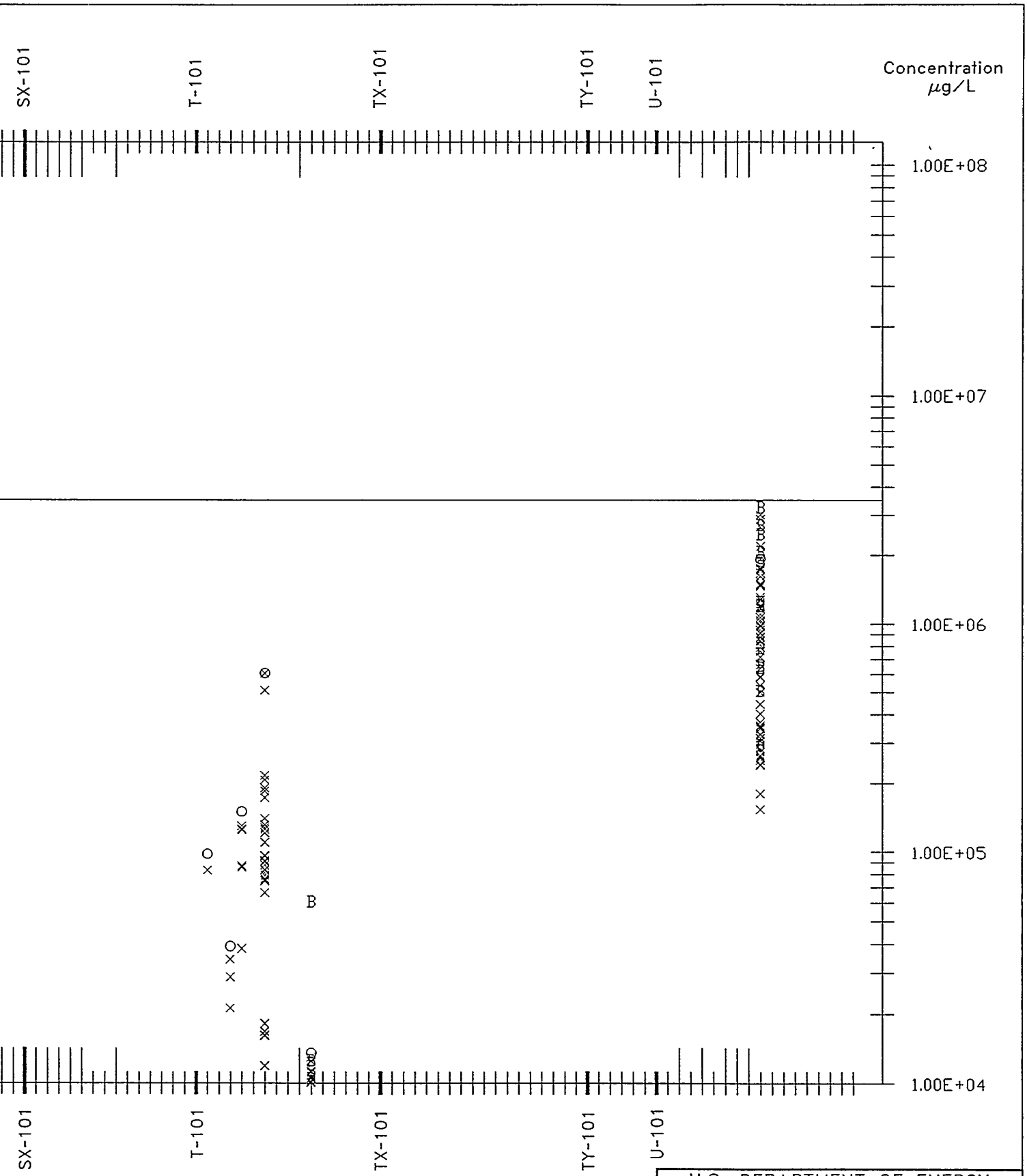
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Se - Selenium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC37 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+08
1.00E+07
3.50E+06
1.00E+06
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

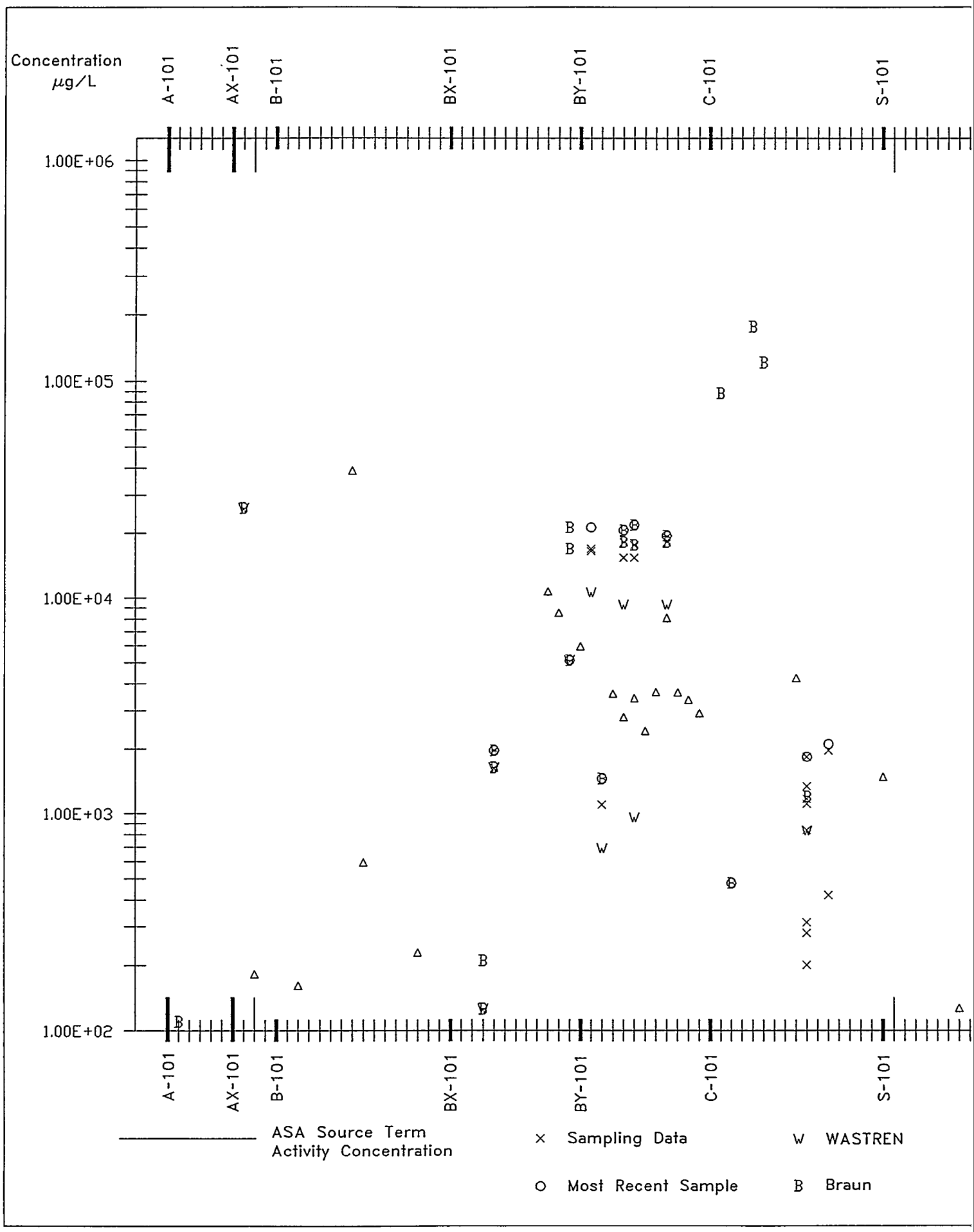
Extented tank lines represent Flamable Gas Watch List Tanks.

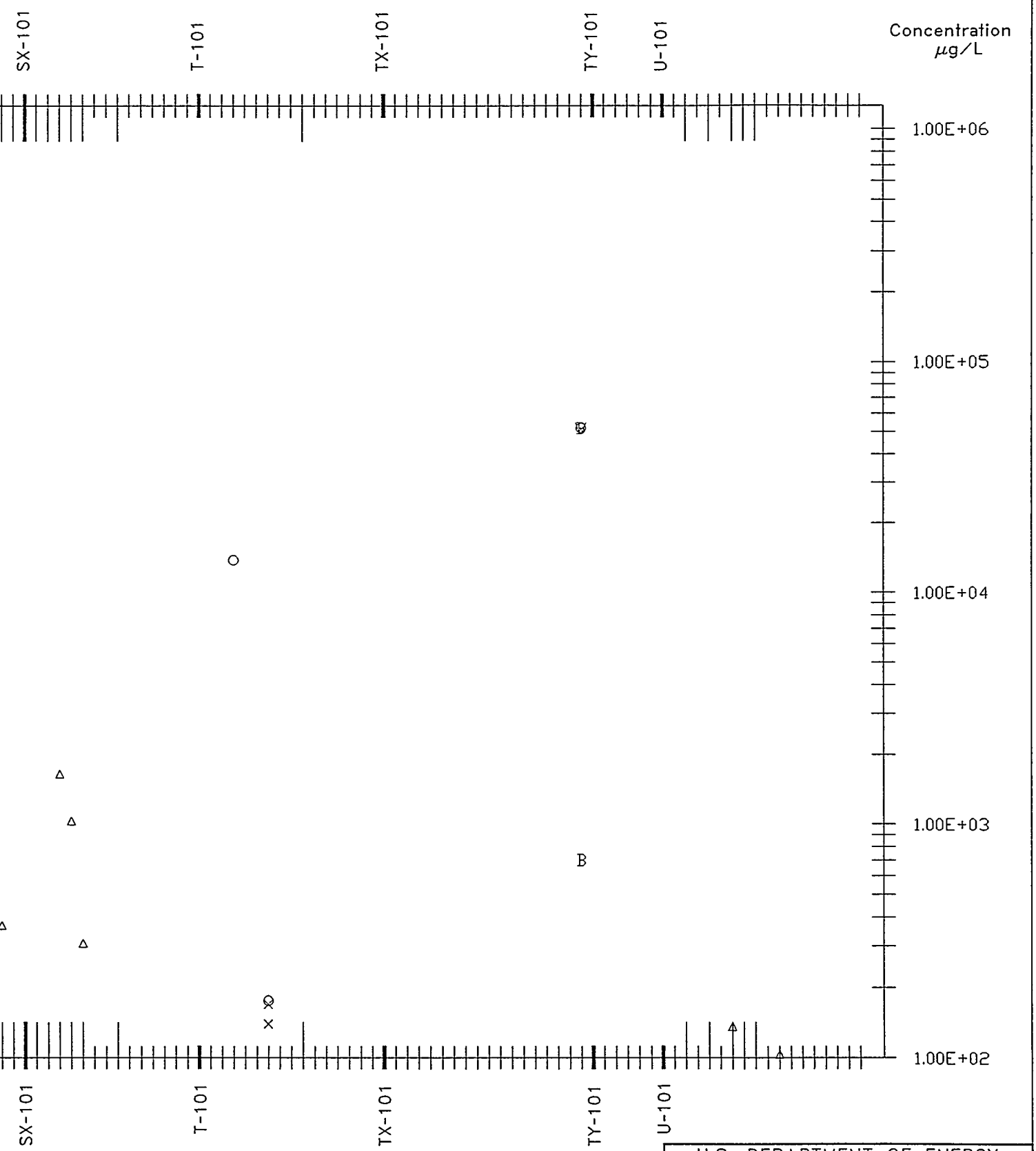
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Se - Selenium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC38 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+06
1.00E+05
1.00E+04
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

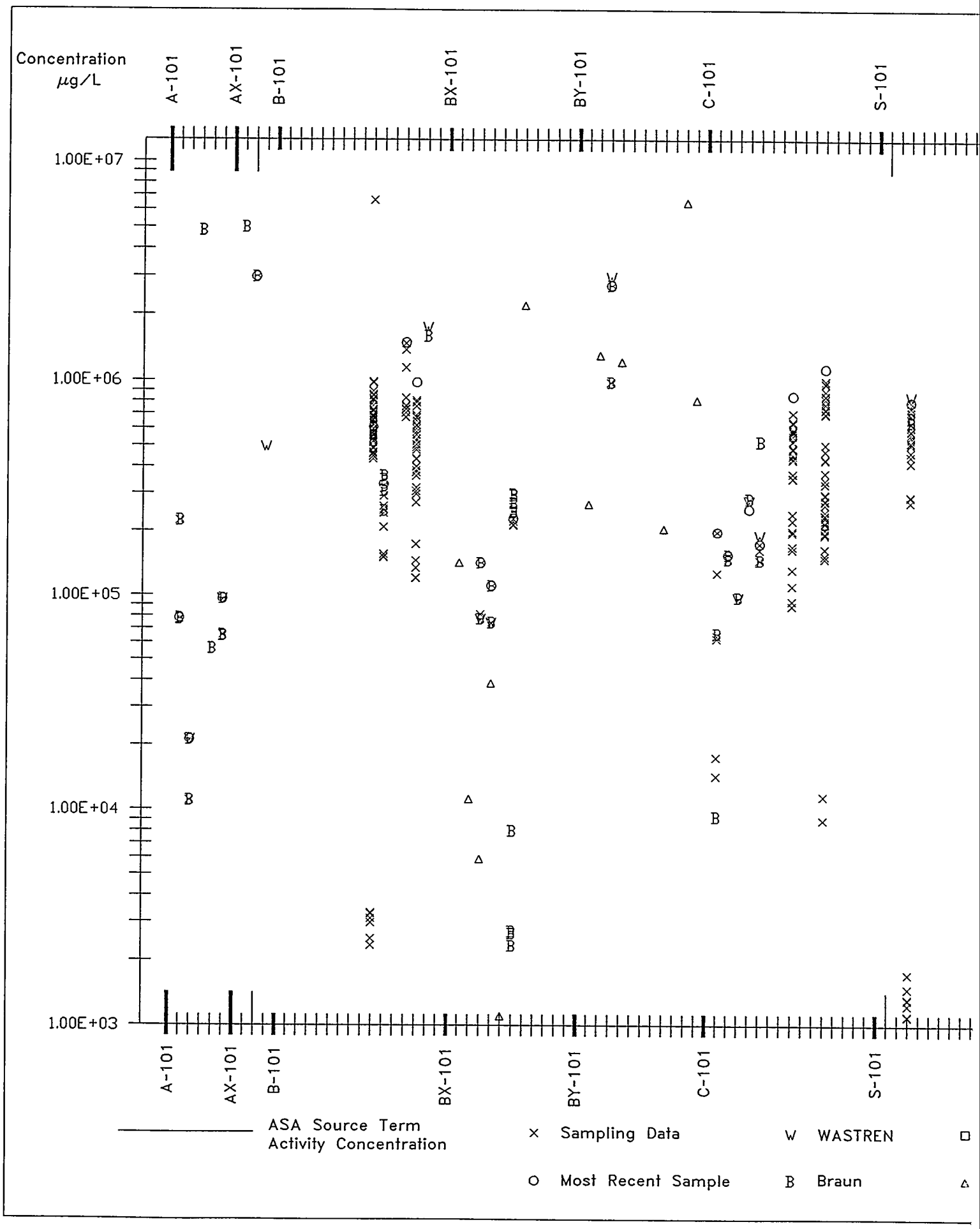
Extented tank lines represent Flamable Gas Watch List Tanks.

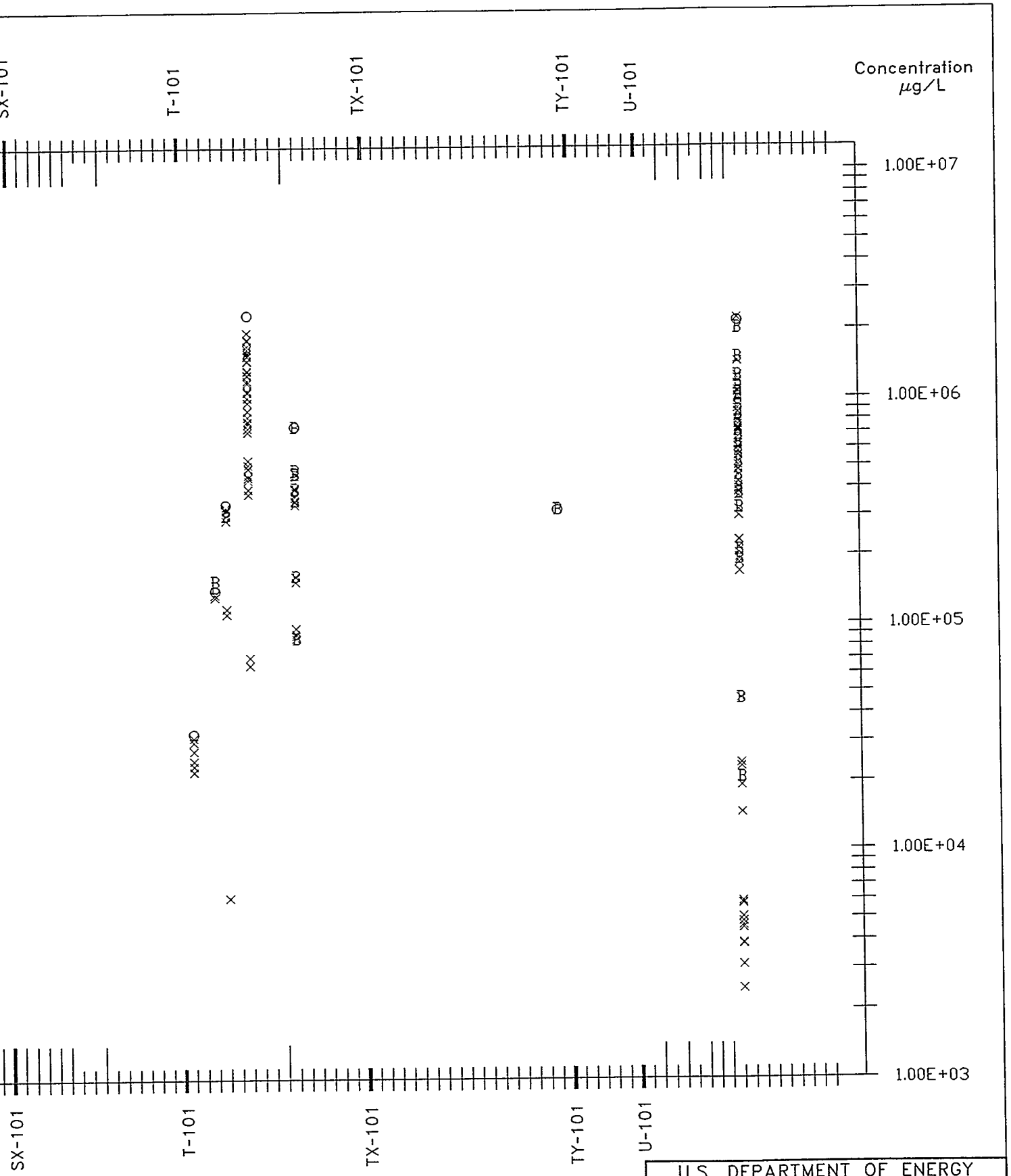
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Sr - Strontium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC39 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+07
1.00E+06
1.00E+05
1.00E+04
1.00E+03
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

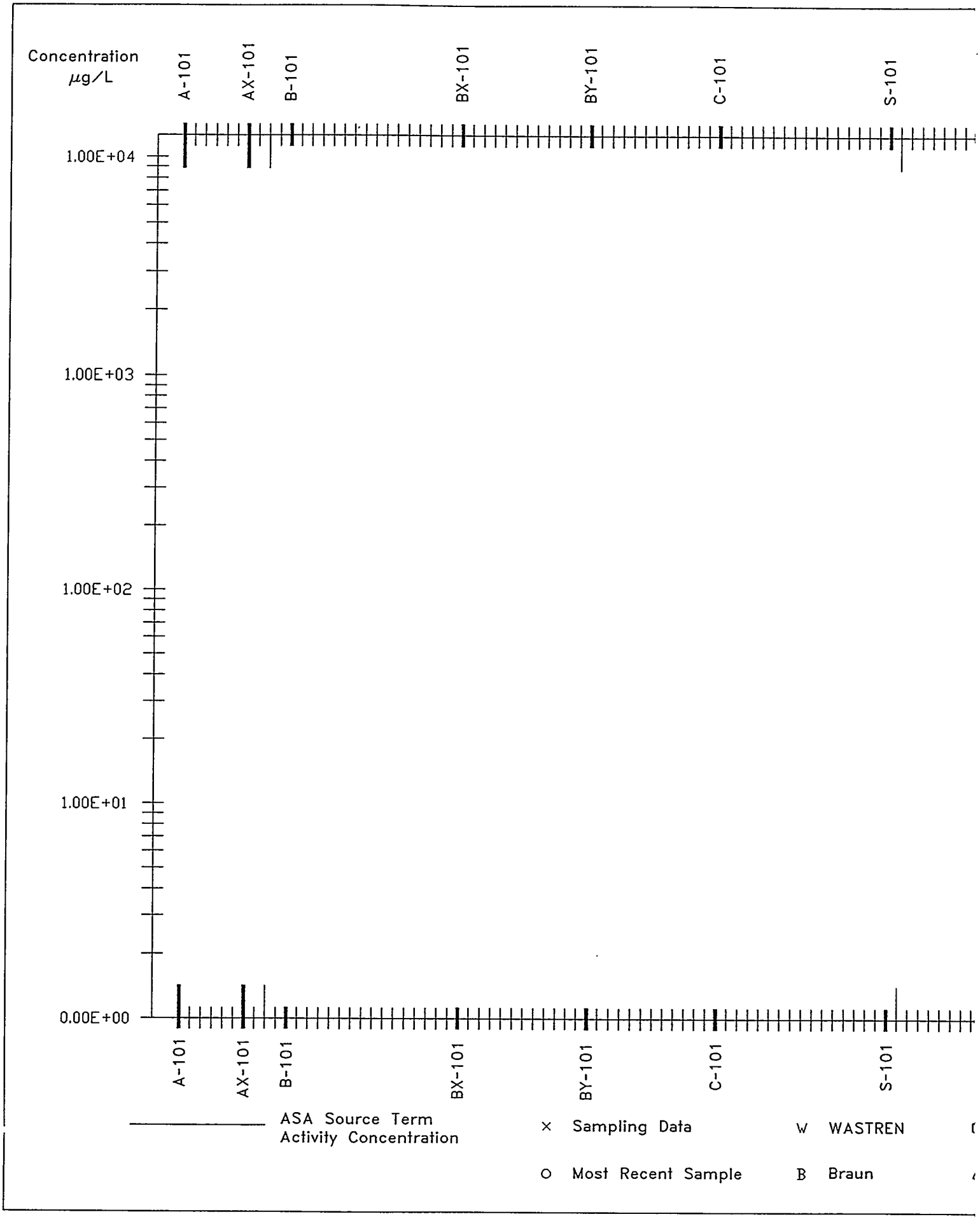
Extented tank lines represent Flamable Gas Watch List Tanks.

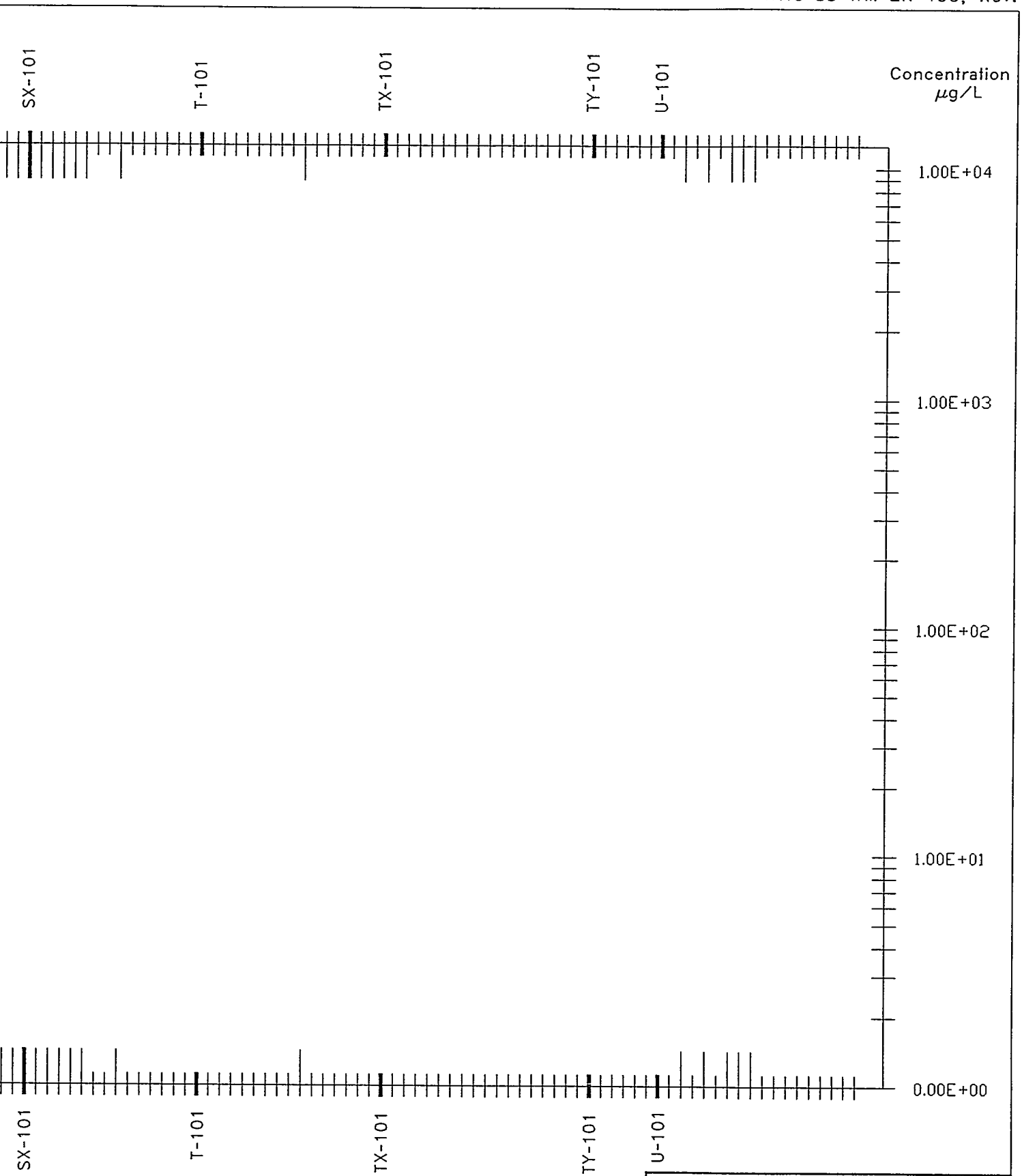
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Sr - Strontium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC40 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+04
1.00E+03
1.00E+02
1.00E+01
0.00E+00
ASA Source Term
Activity Concentration
× Sampling Data
O Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

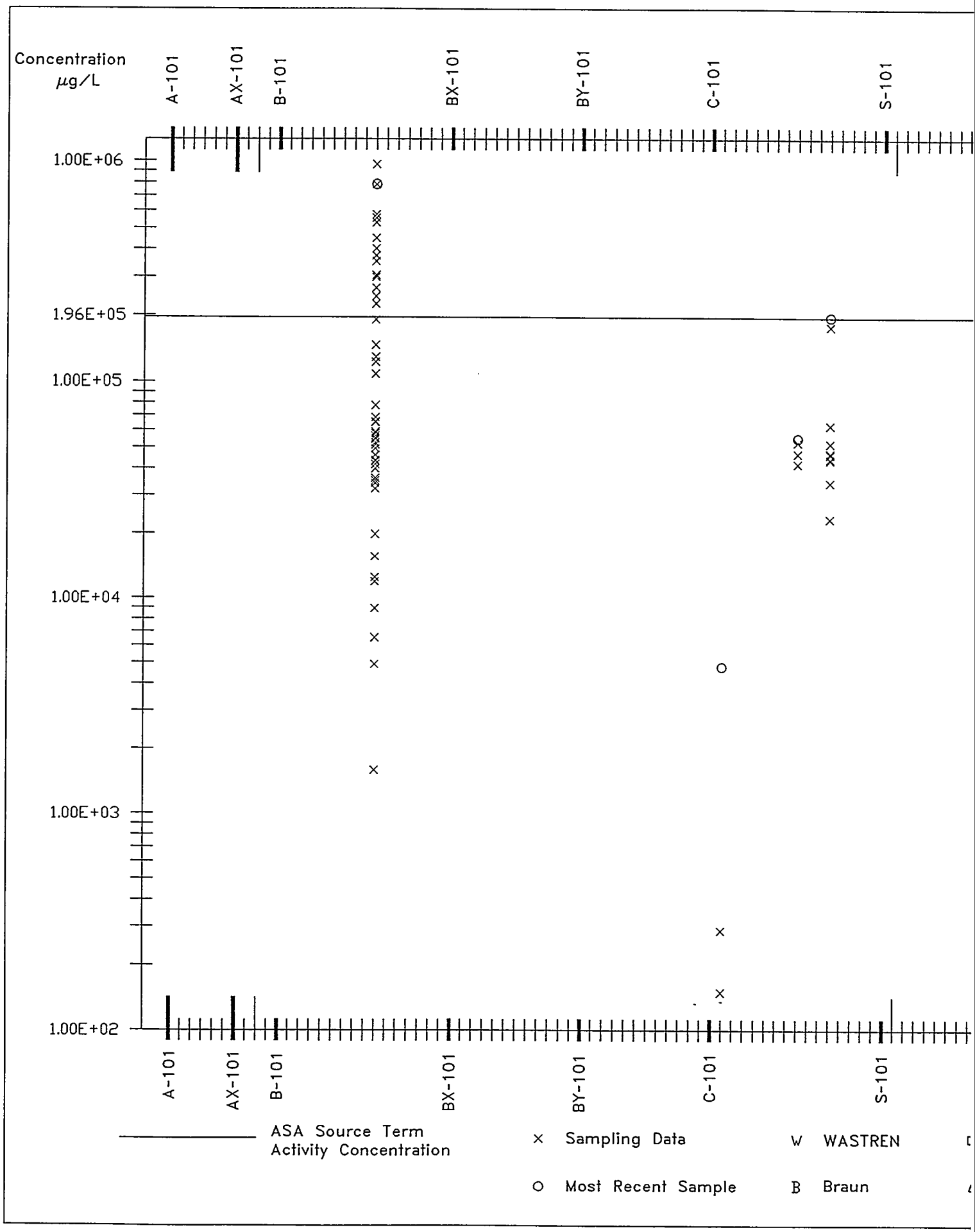
Extented tank lines represent Flamable Gas Watch List Tanks.

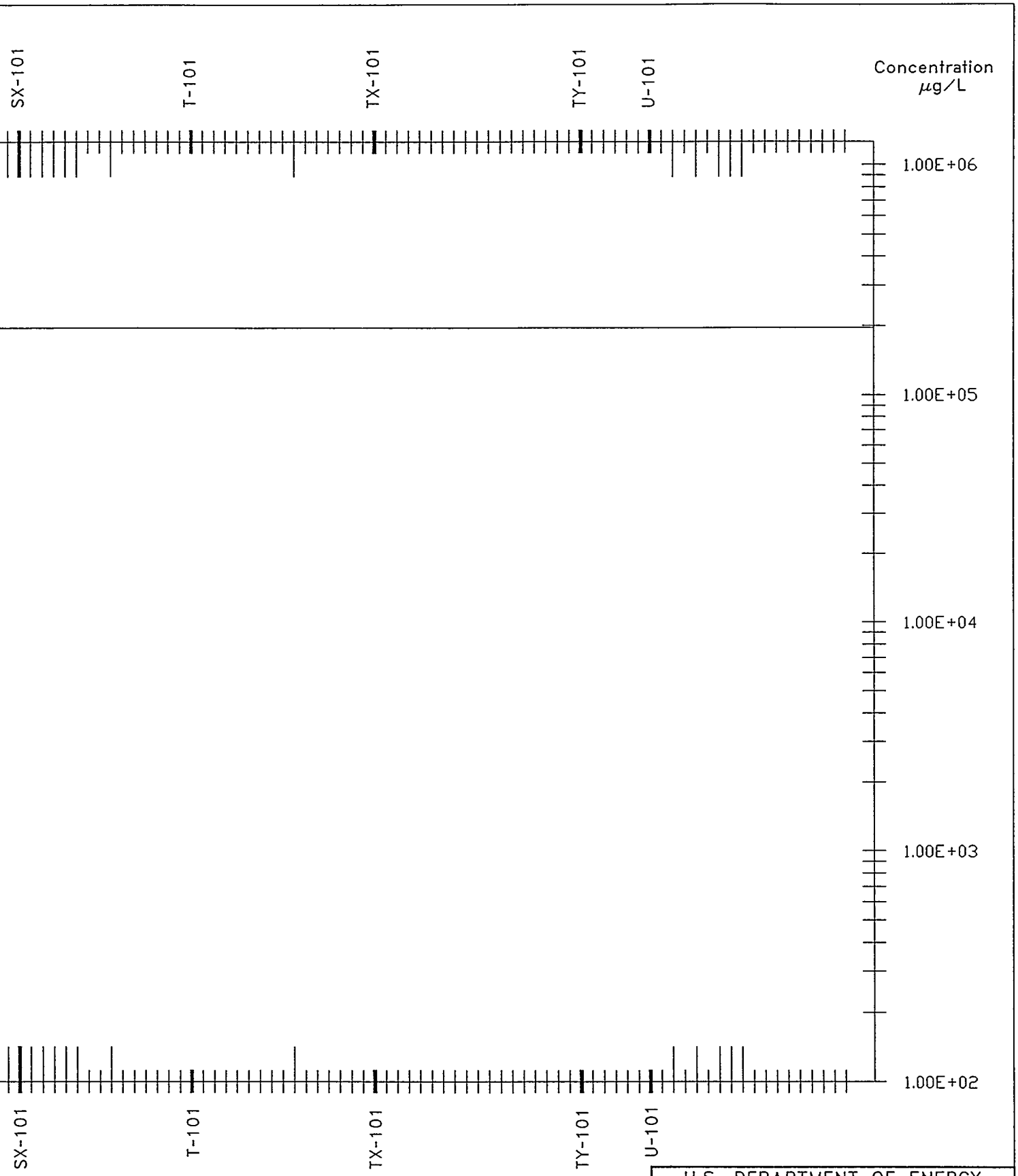
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Te - Tellurium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC41 | JOB NO E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+06
1.96E+05
1.00E+05
1.00E+04
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

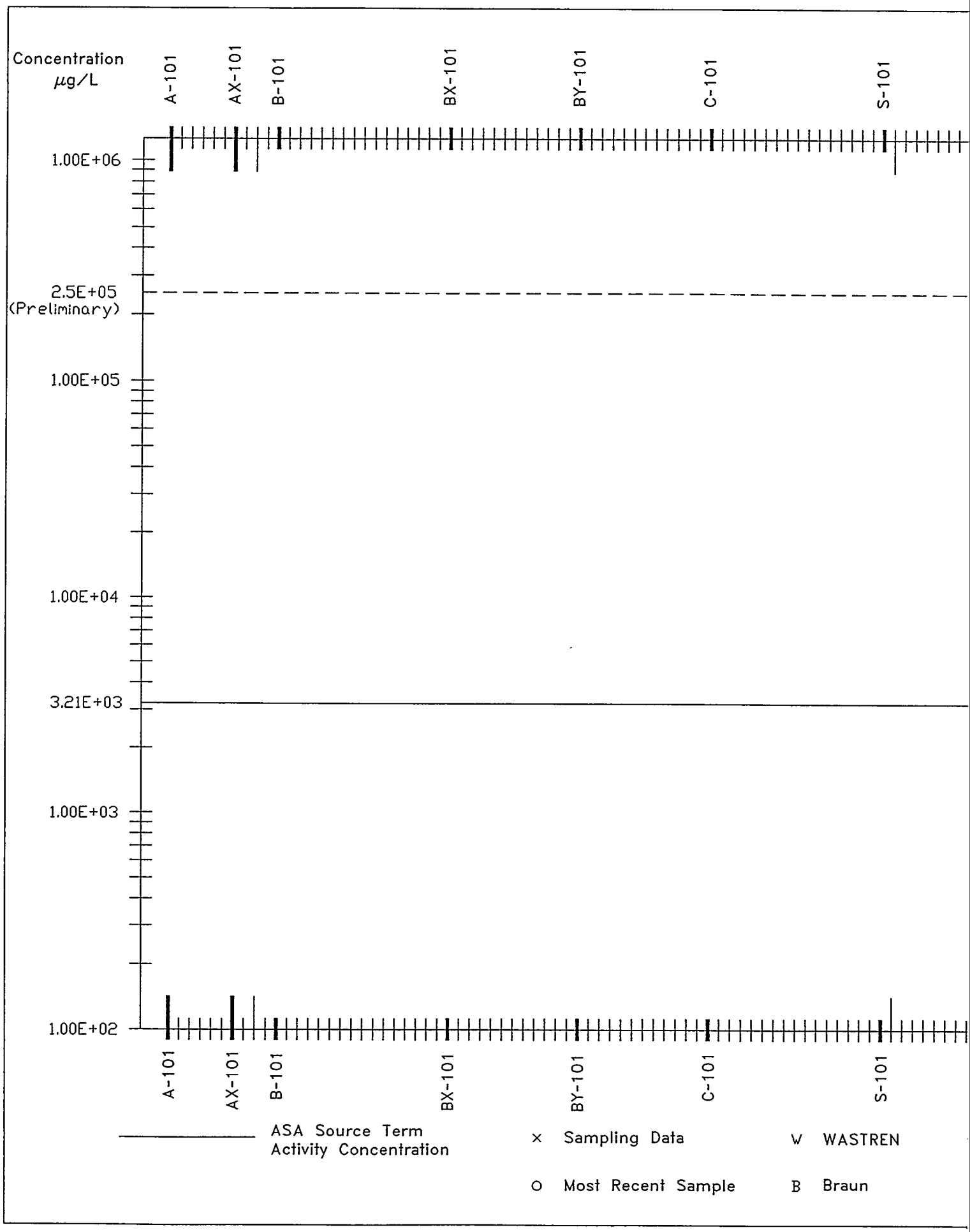
Extented tank lines represent Flamable Gas Watch List Tanks.

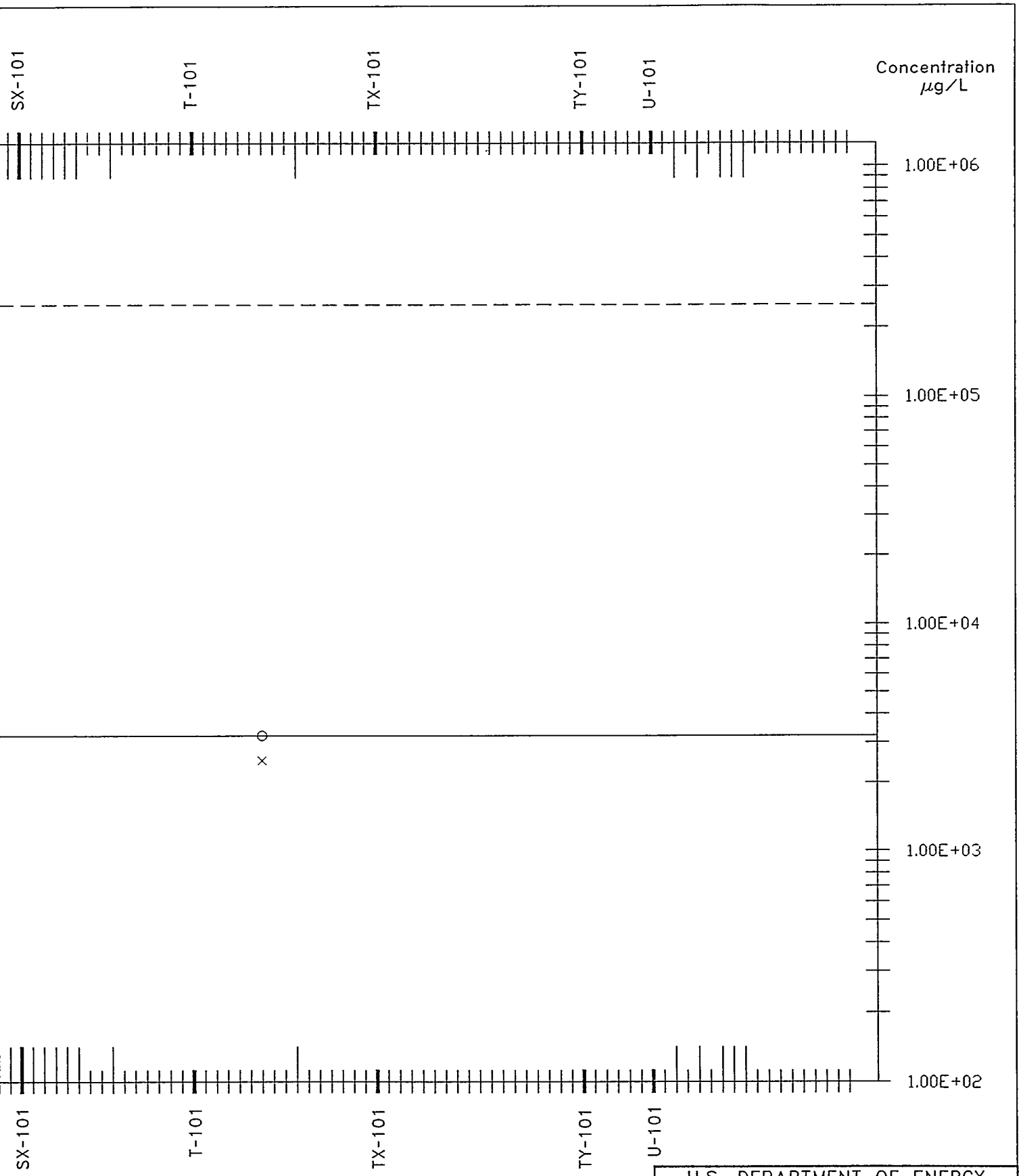
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Te - Tellurium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC42 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+06
2.5E+05
(Preliminary)
1.00E+05
1.00E+04
3.21E+03
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
× Sampling Data
O Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

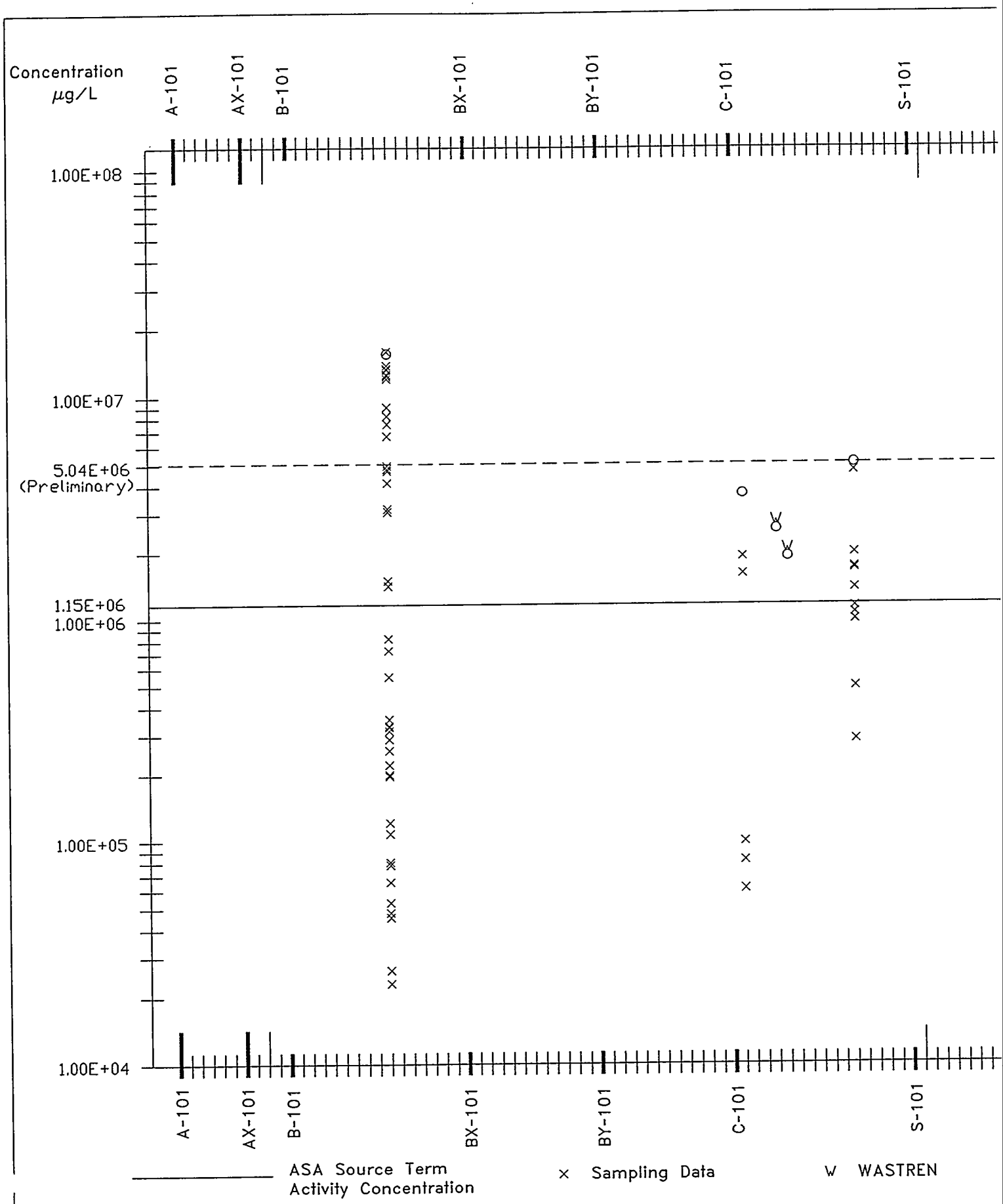
Extented tank lines represent Flamable Gas Watch List Tanks.

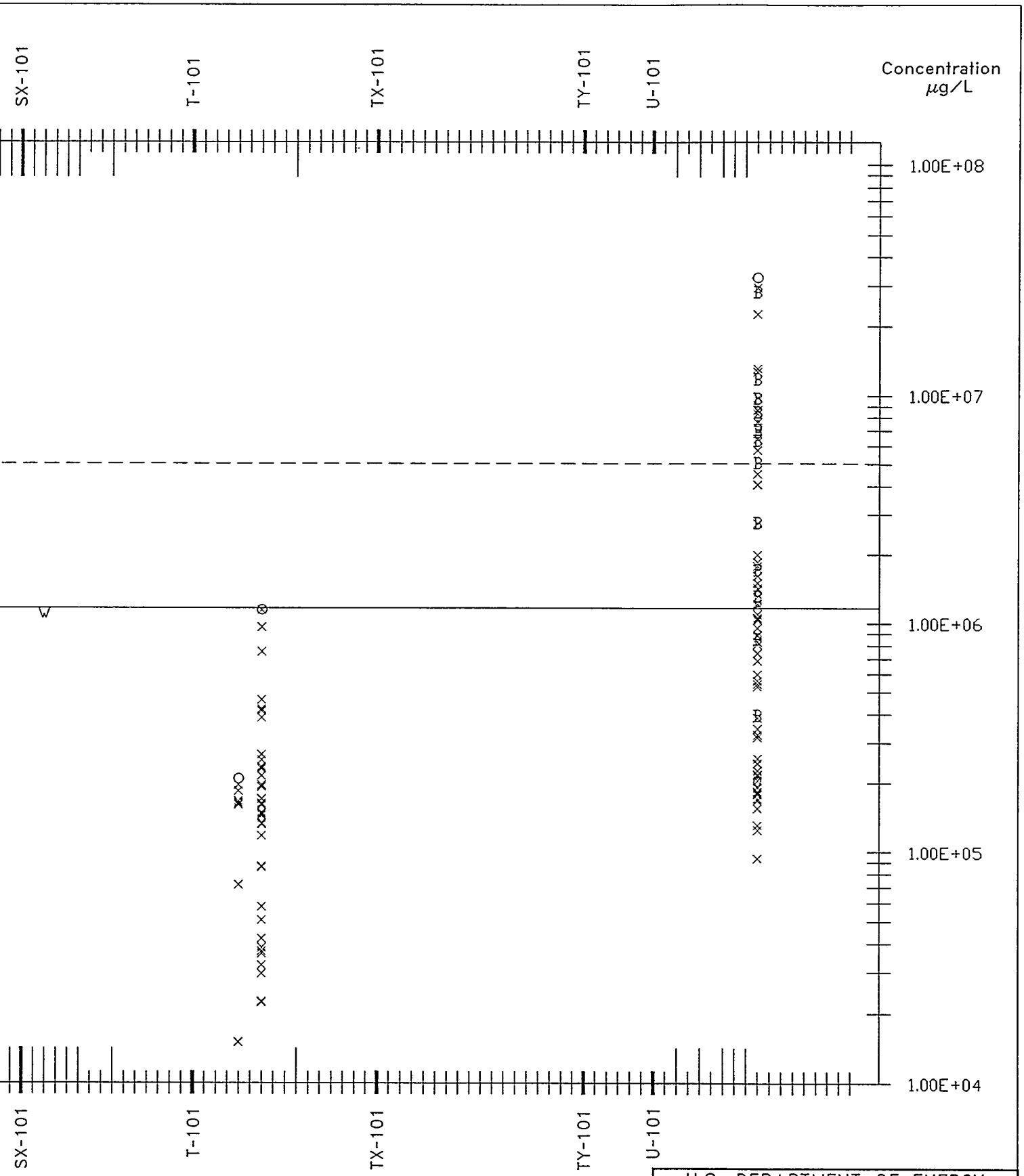
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Tl - Thallium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CC43 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+08
1.00E+07
5.04E+06
(Preliminary)
1.15E+06
1.00E+06
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

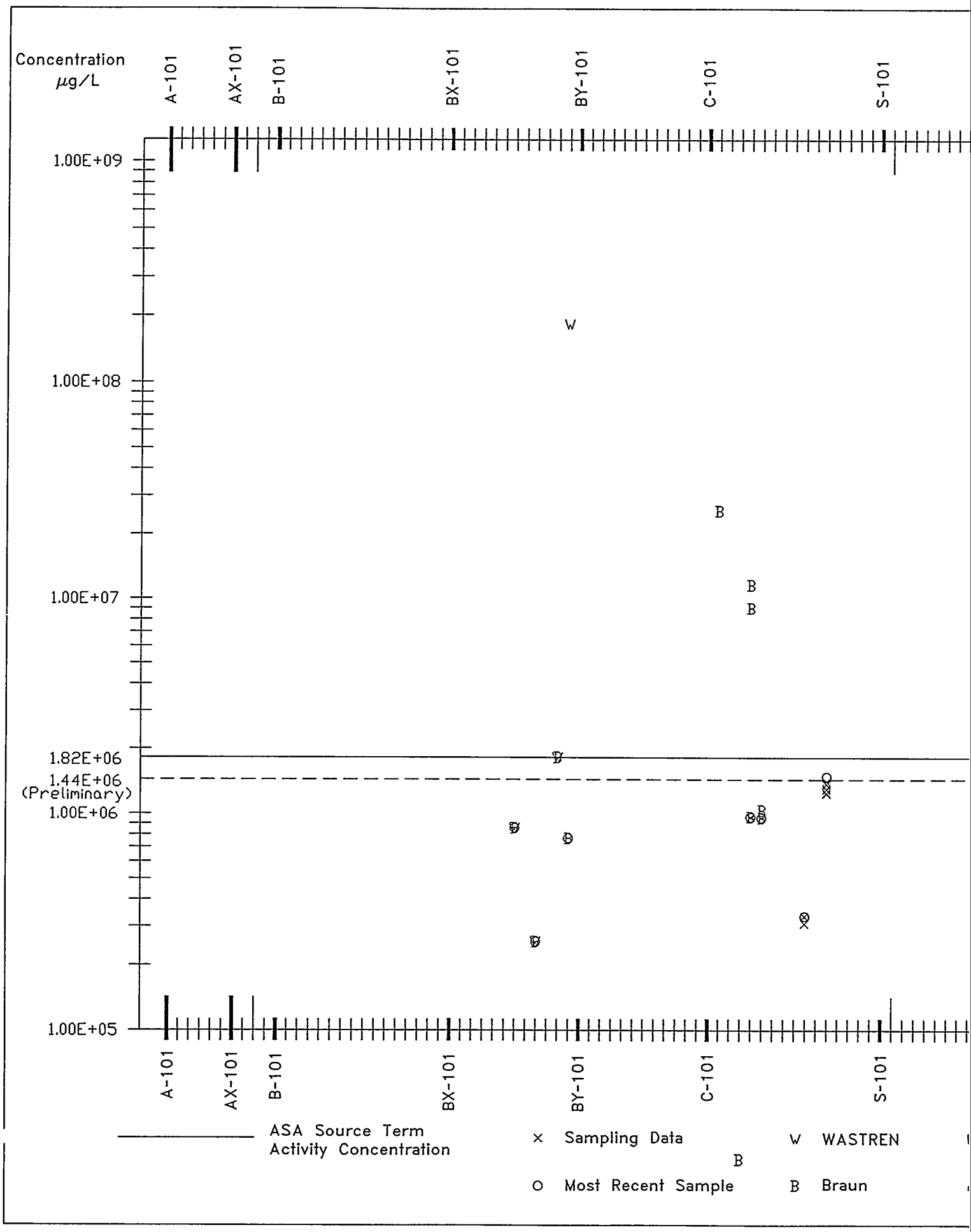
Extented tank lines represent Flamable Gas Watch List Tanks.

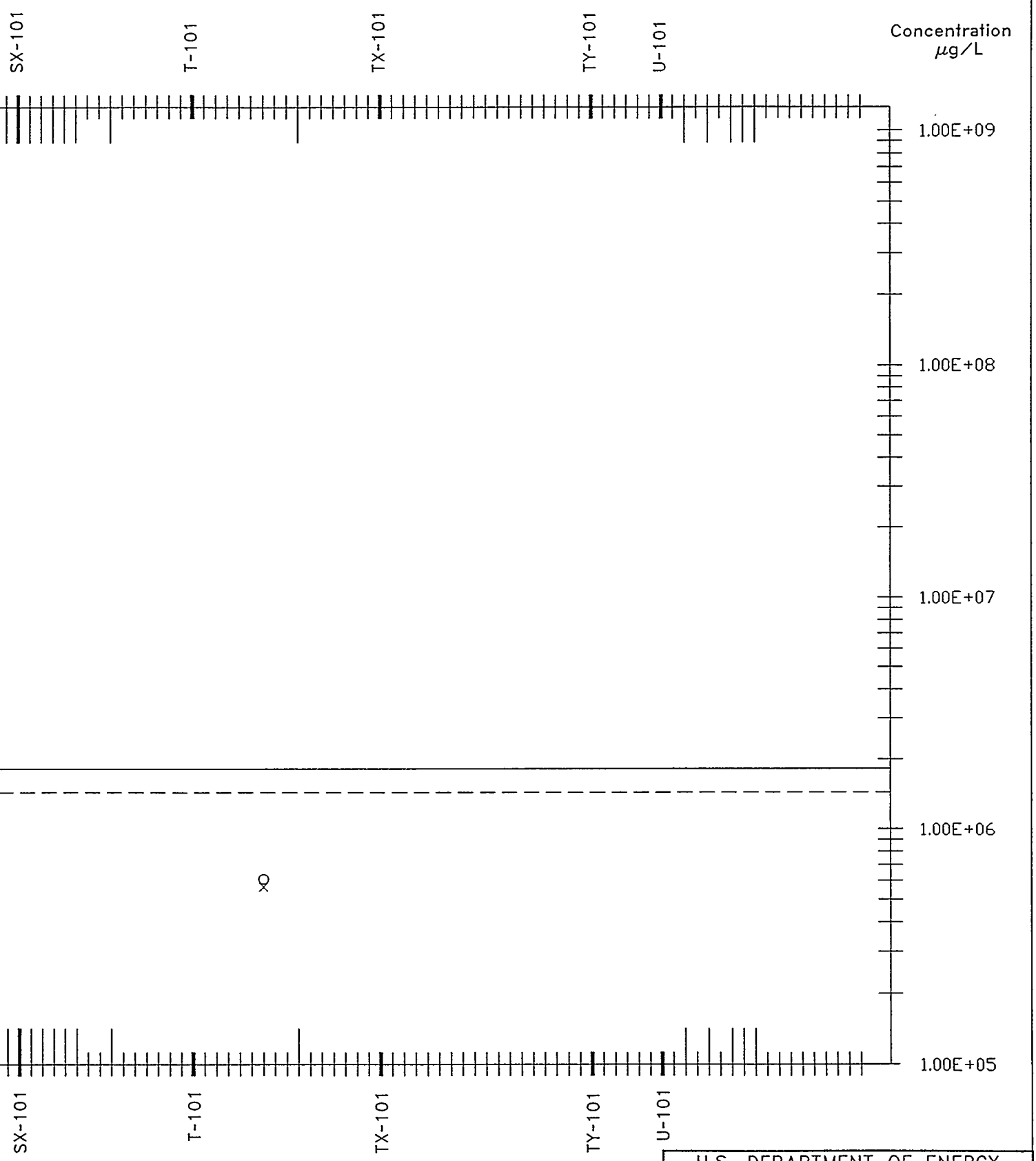
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
Tl - Thallium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC44 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+09
1.00E+08
1.00E+07
1.82E+06
1.44E+06
(Preliminary)
1.00E+06
1.00E+05
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



HTCE Inventory

TRAC

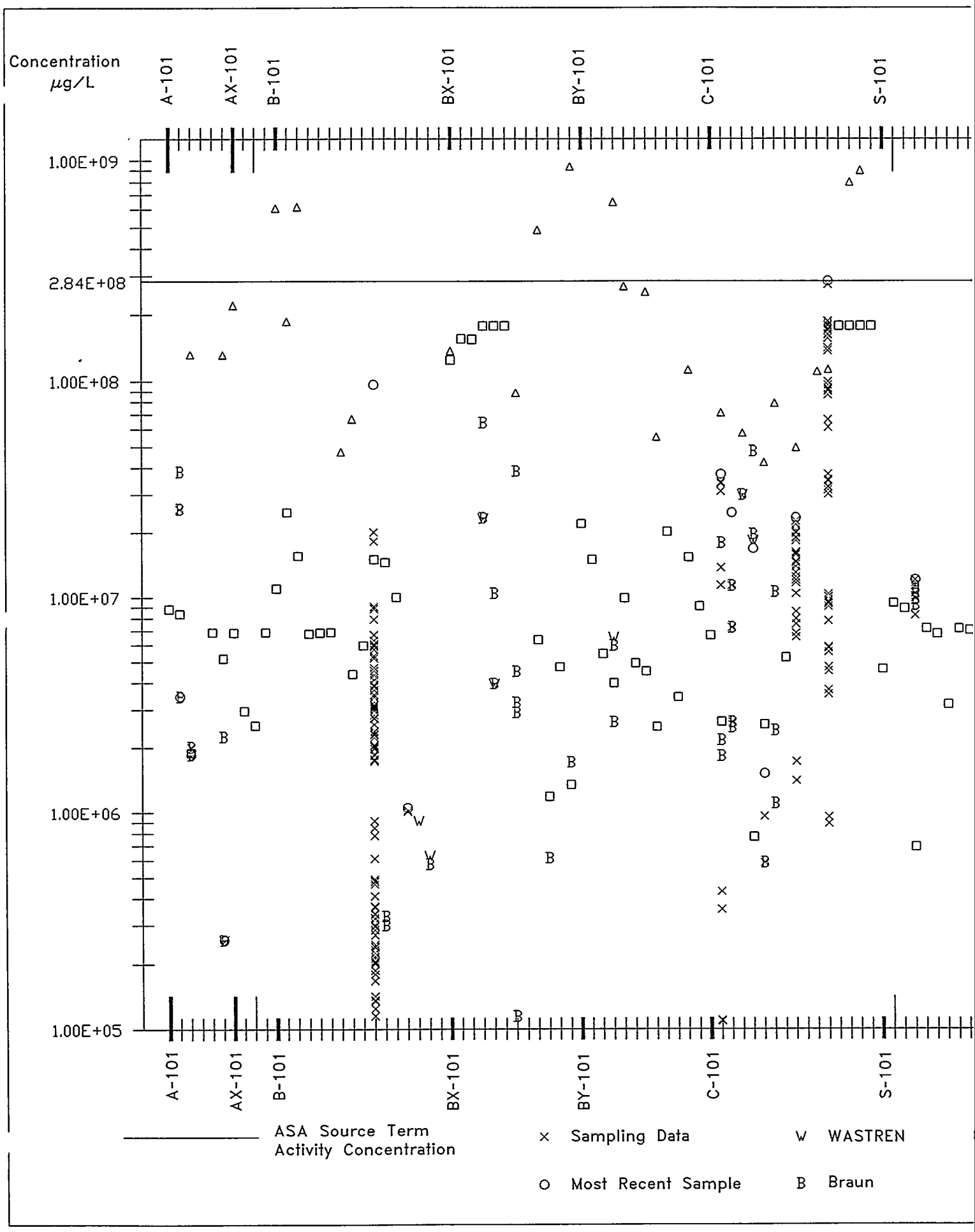
Extented tank lines represent Flamable Gas Watch List Tanks.

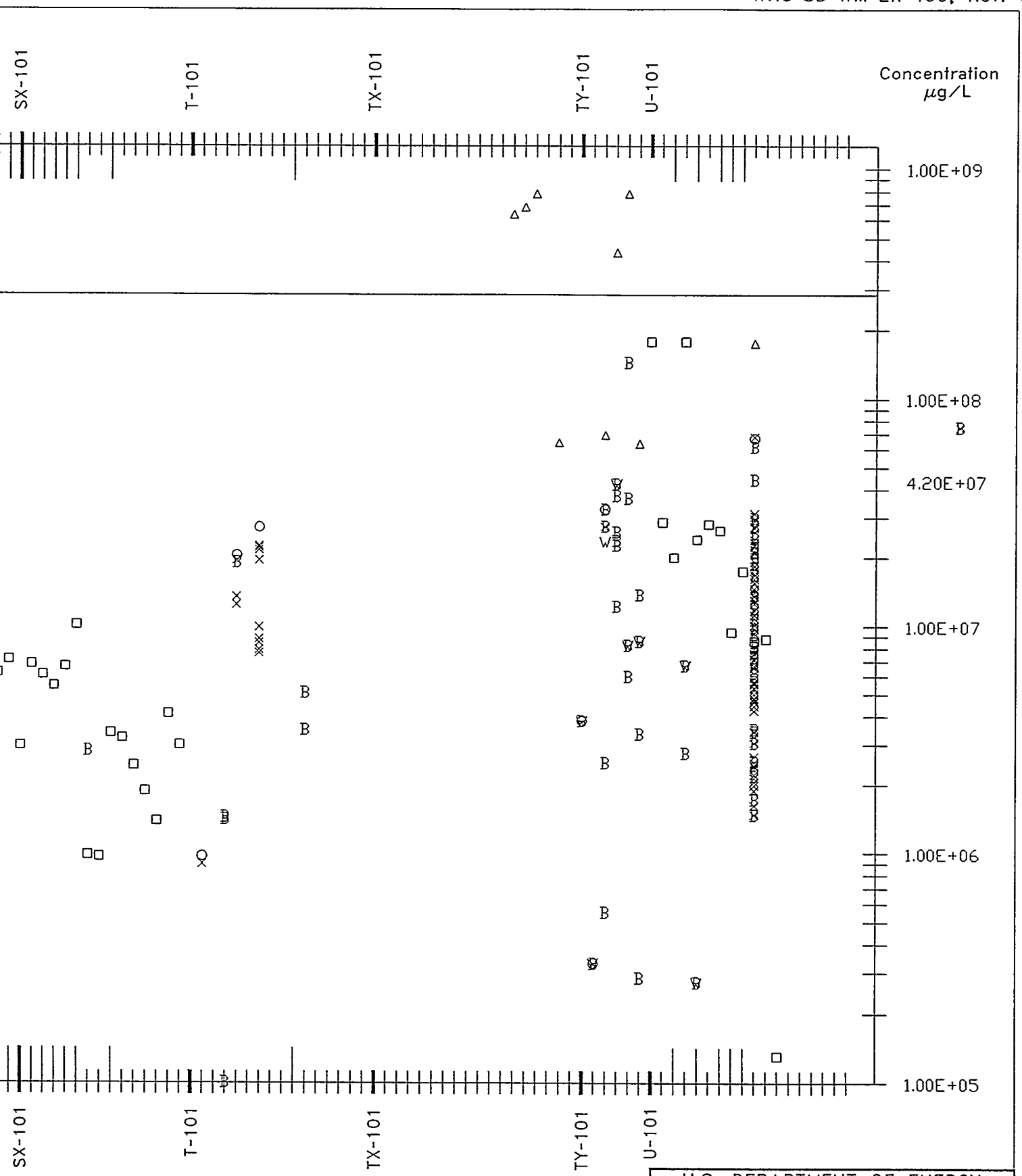
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
U - Uranium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC45 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+09
2.84E+08
1.00E+08
1.00E+07
1.00E+06
1.00E+05
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



HTCE Inventory

TRAC

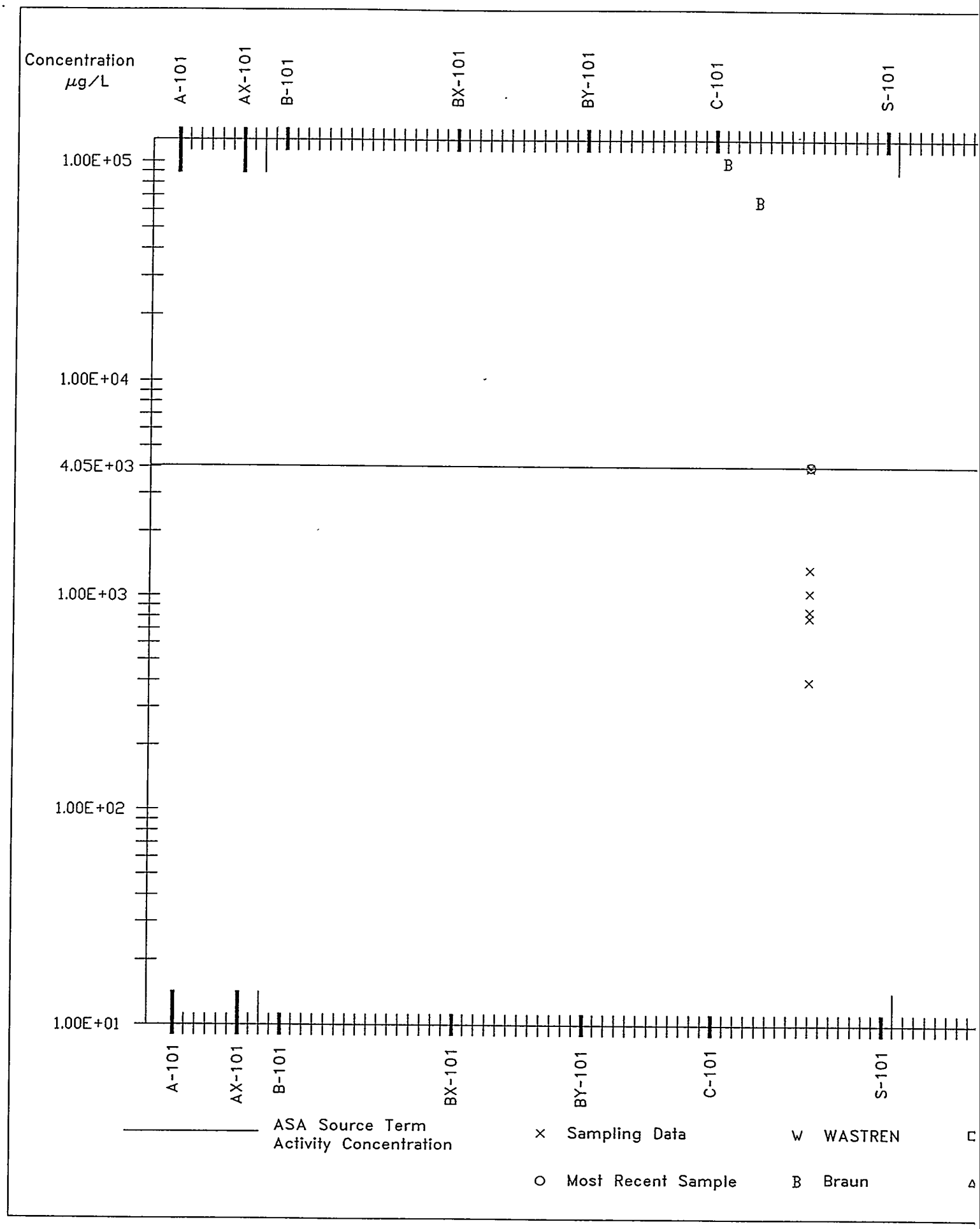
Extented tank lines represent Flamable Gas Watch List Tanks.

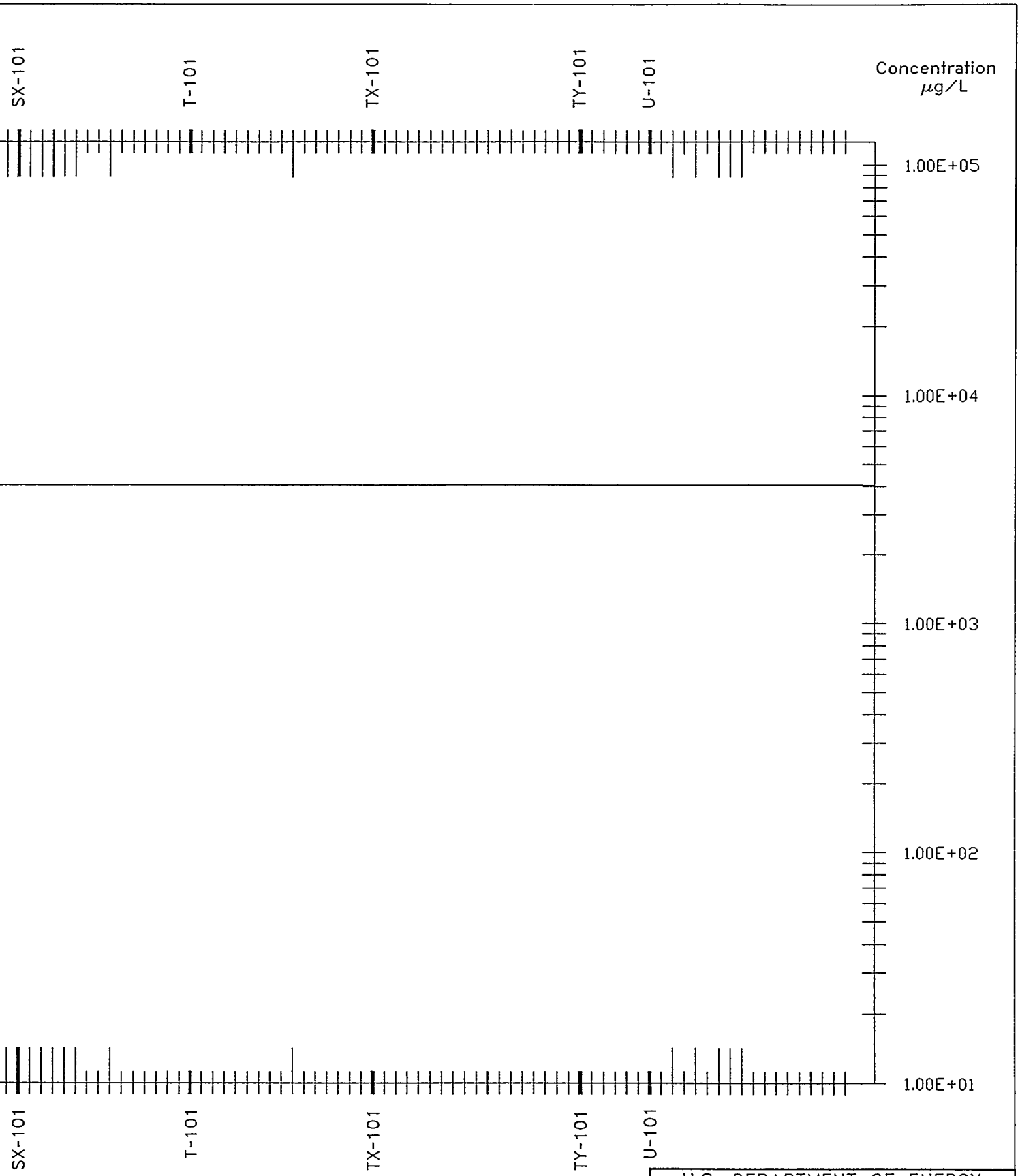
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
U - Uranium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC46 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+05
1.00E+04
4.05E+03
1.00E+03
1.00E+02
1.00E+01
B
B
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

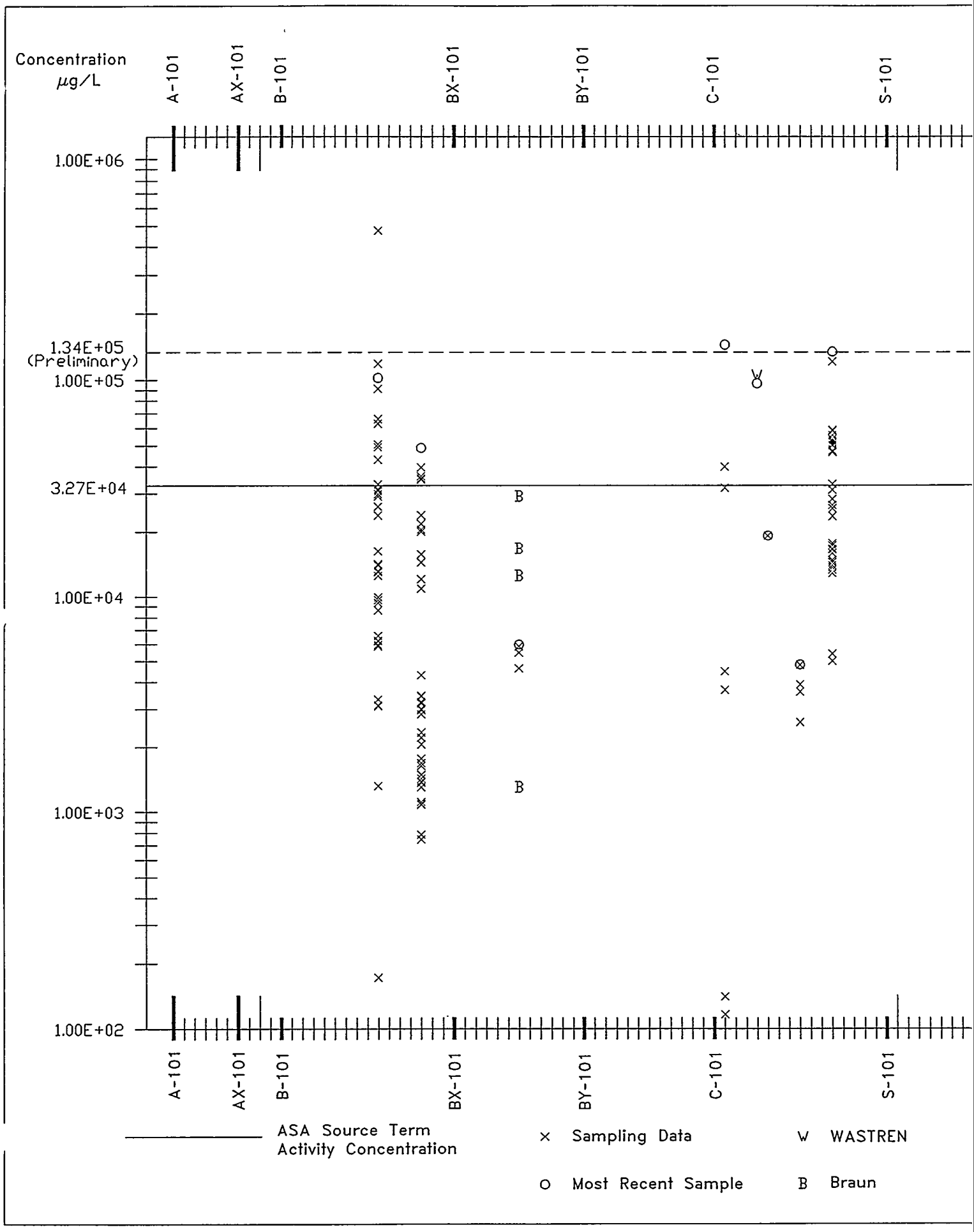
Extented tank lines represent Flamable Gas Watch List Tanks.

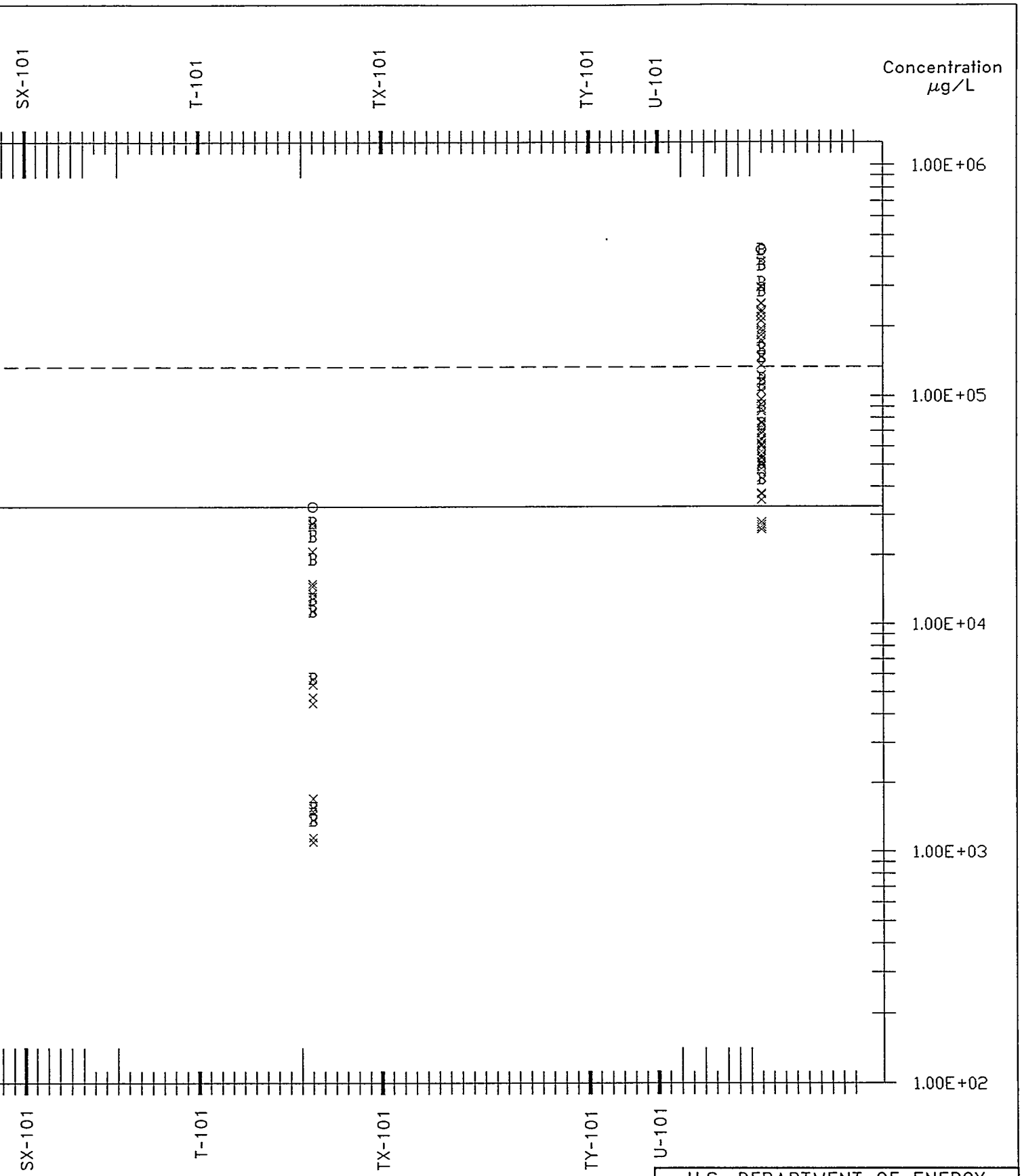
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
V - Vanadium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC47 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
A-101
AX-101
B-101
BX-101
BY-101
C-101
S-101
1.00E+06
1.34E+05
(Preliminary)
1.00E+05
3.27E+04
1.00E+04
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

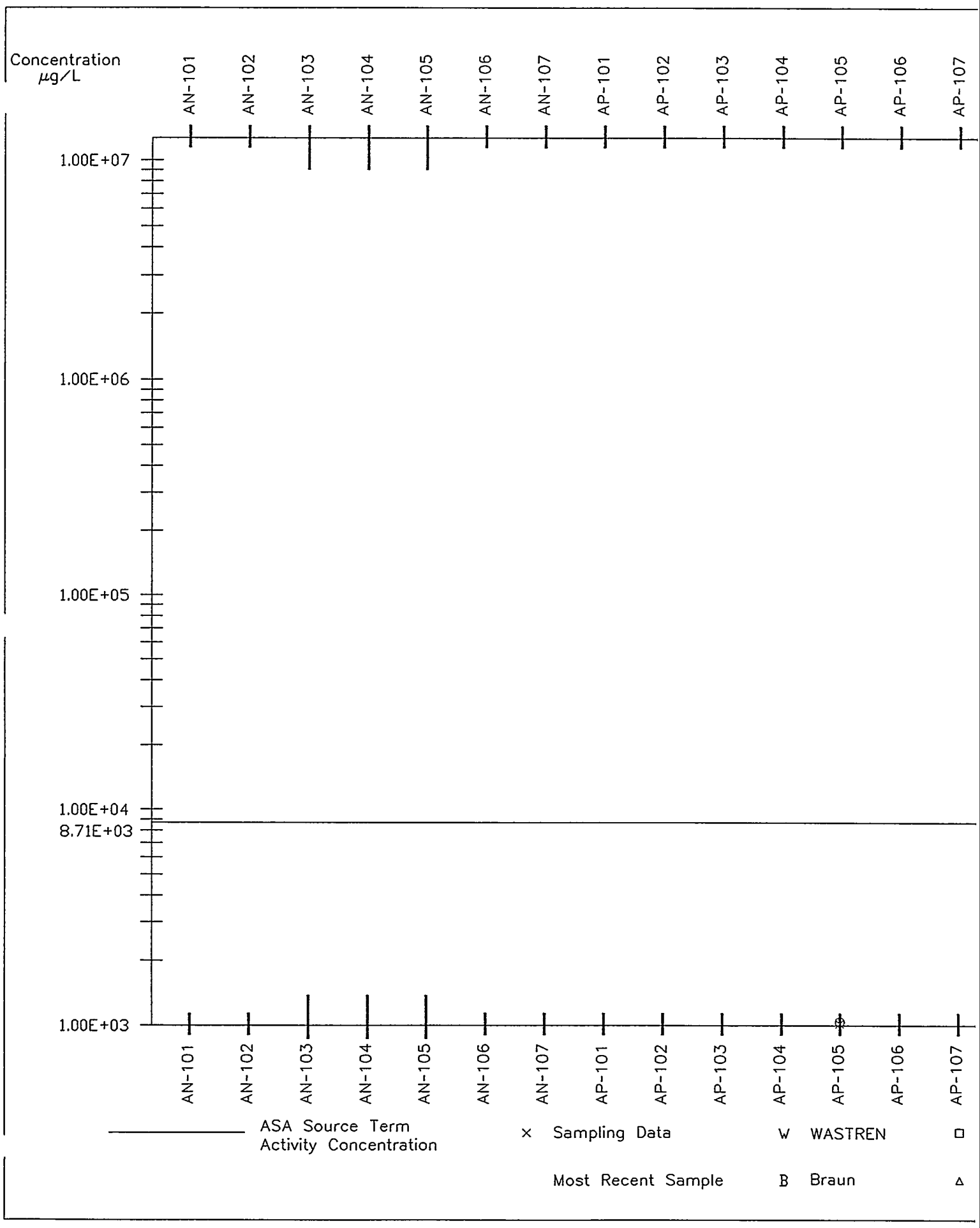
Extented tank lines represent Flamable Gas Watch List Tanks.

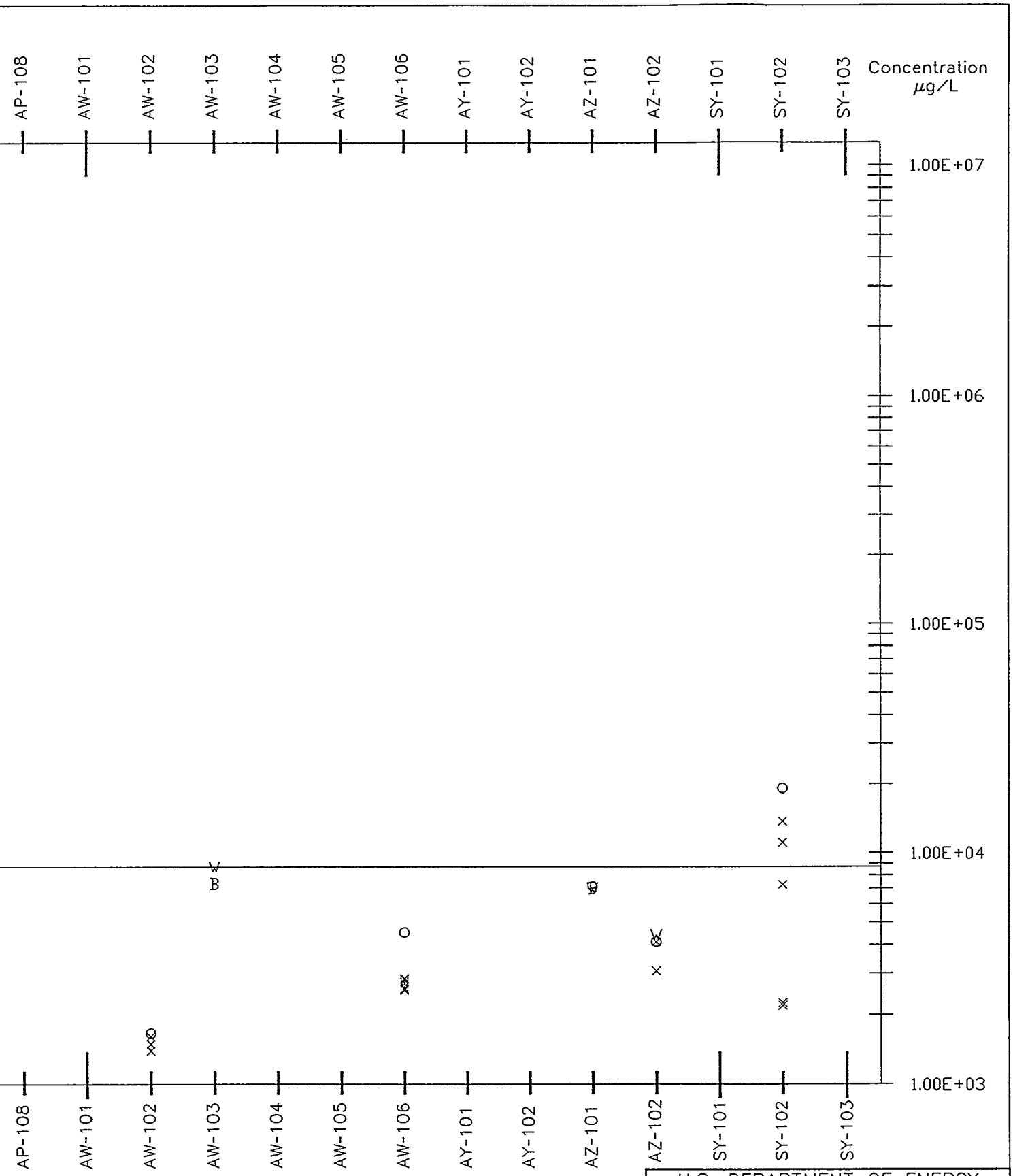
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

SINGLE-SHELL WASTE TANKS
V - Vanadium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC48 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+07
1.00E+06
1.00E+05
1.00E+04
8.71E+03
1.00E+03
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□
Most Recent Sample
B Braun
△



HTCE Inventory

TRAC

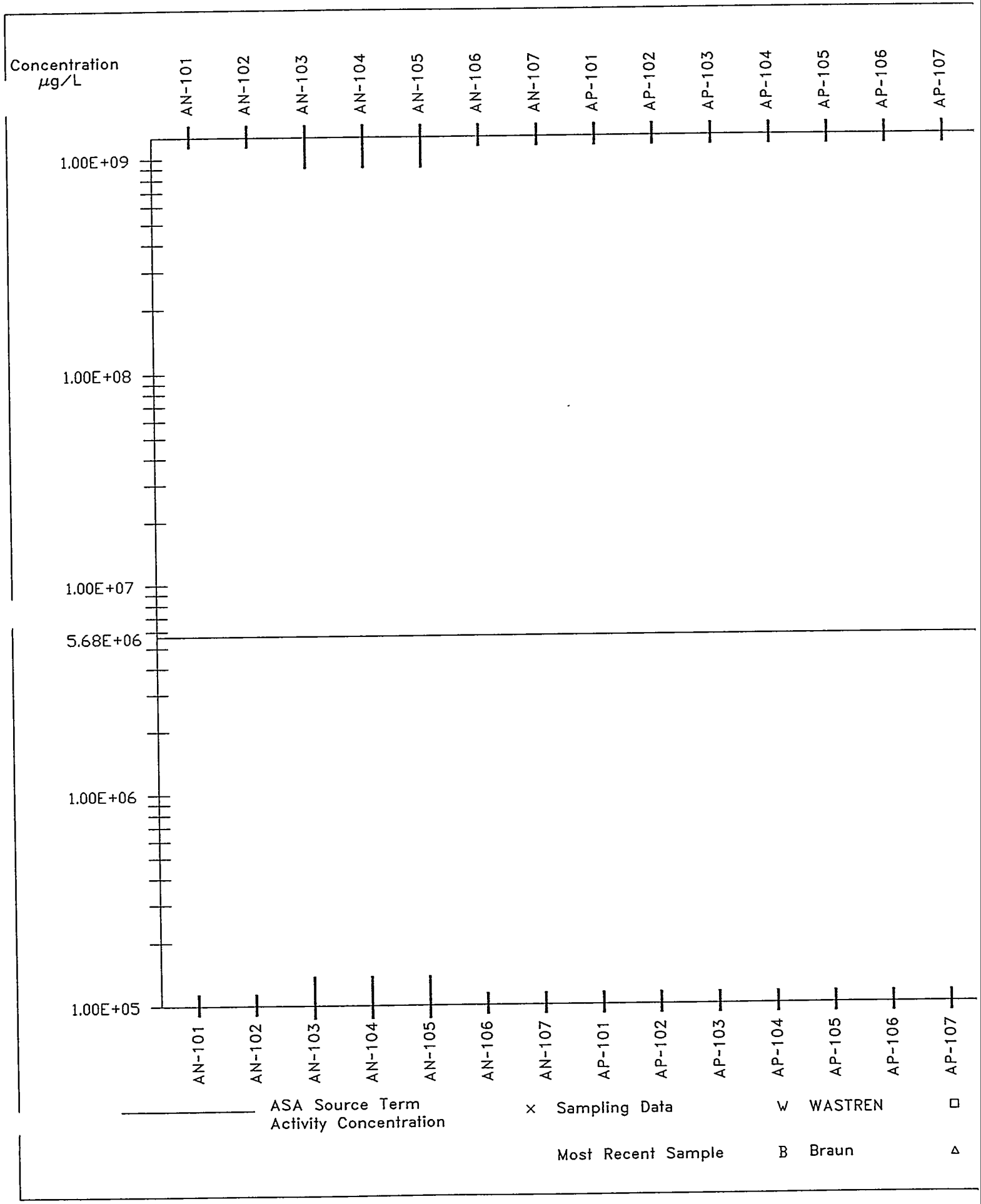
Extented tank lines represent Flamable Gas Watch List Tanks.

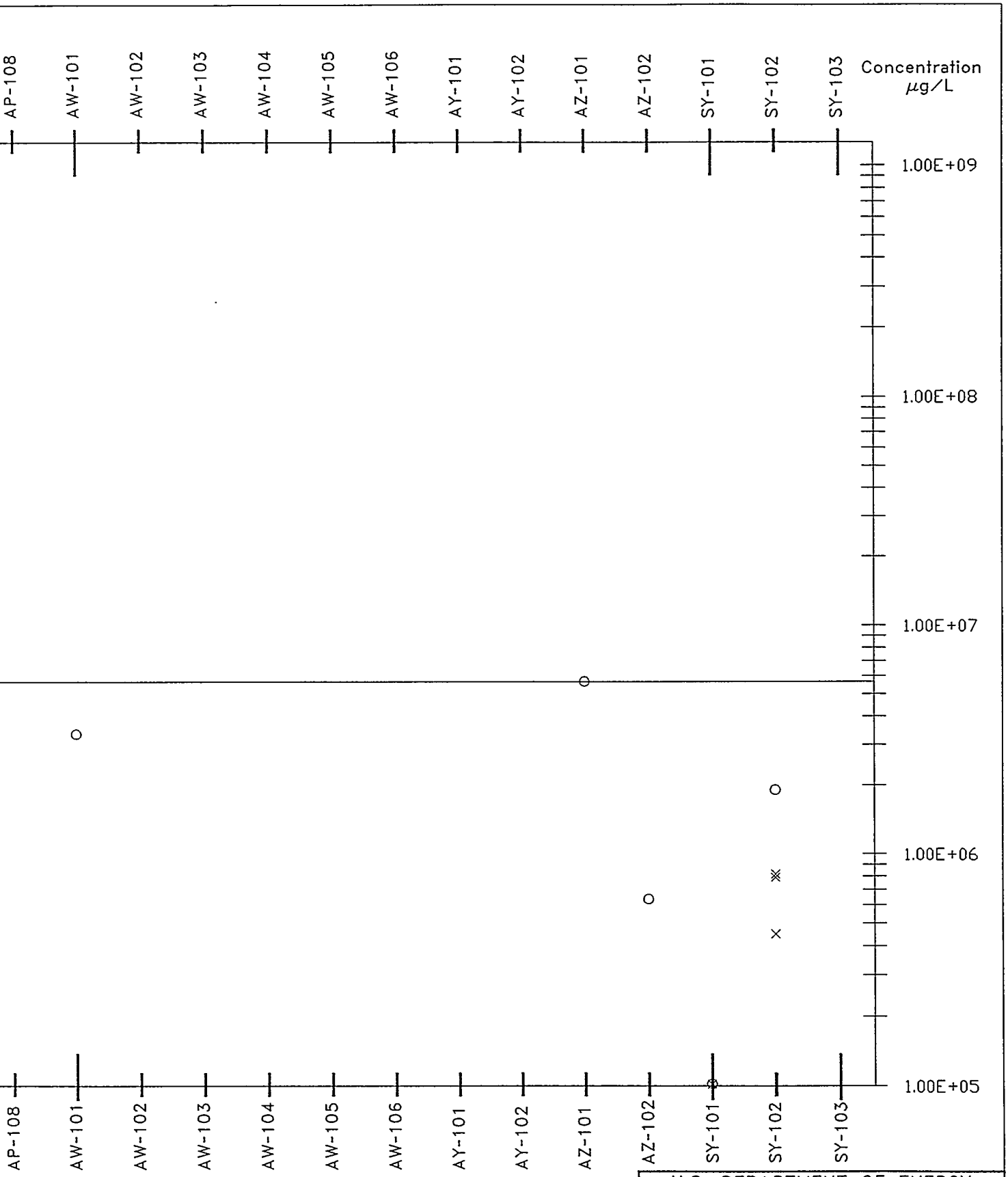
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
As - Arsenic Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC49 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+09
1.00E+08
1.00E+07
5.68E+06
1.00E+06
1.00E+05
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



TCE Inventory

RAC

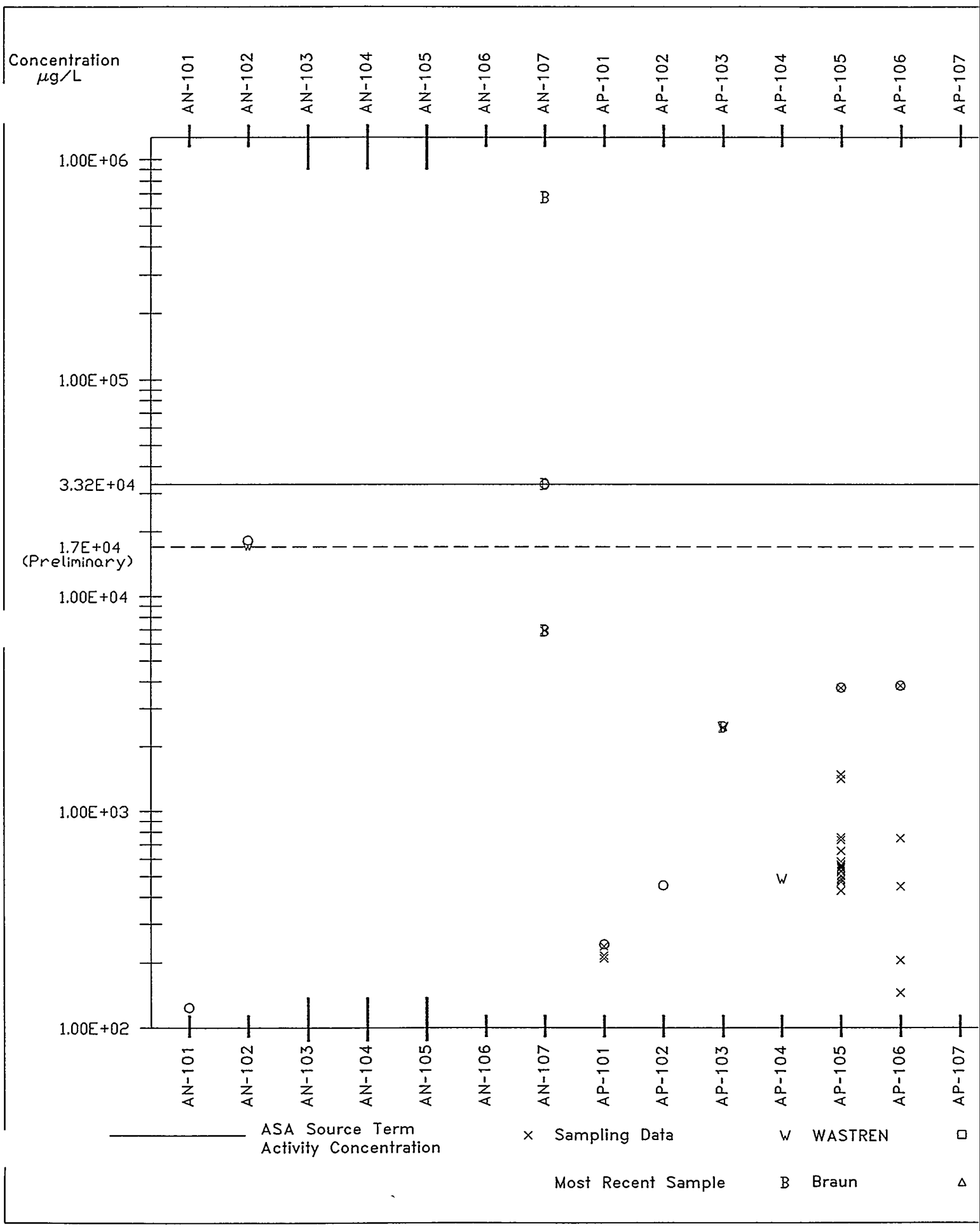
Extented tank lines represent Flamable Gas Watch List Tanks.

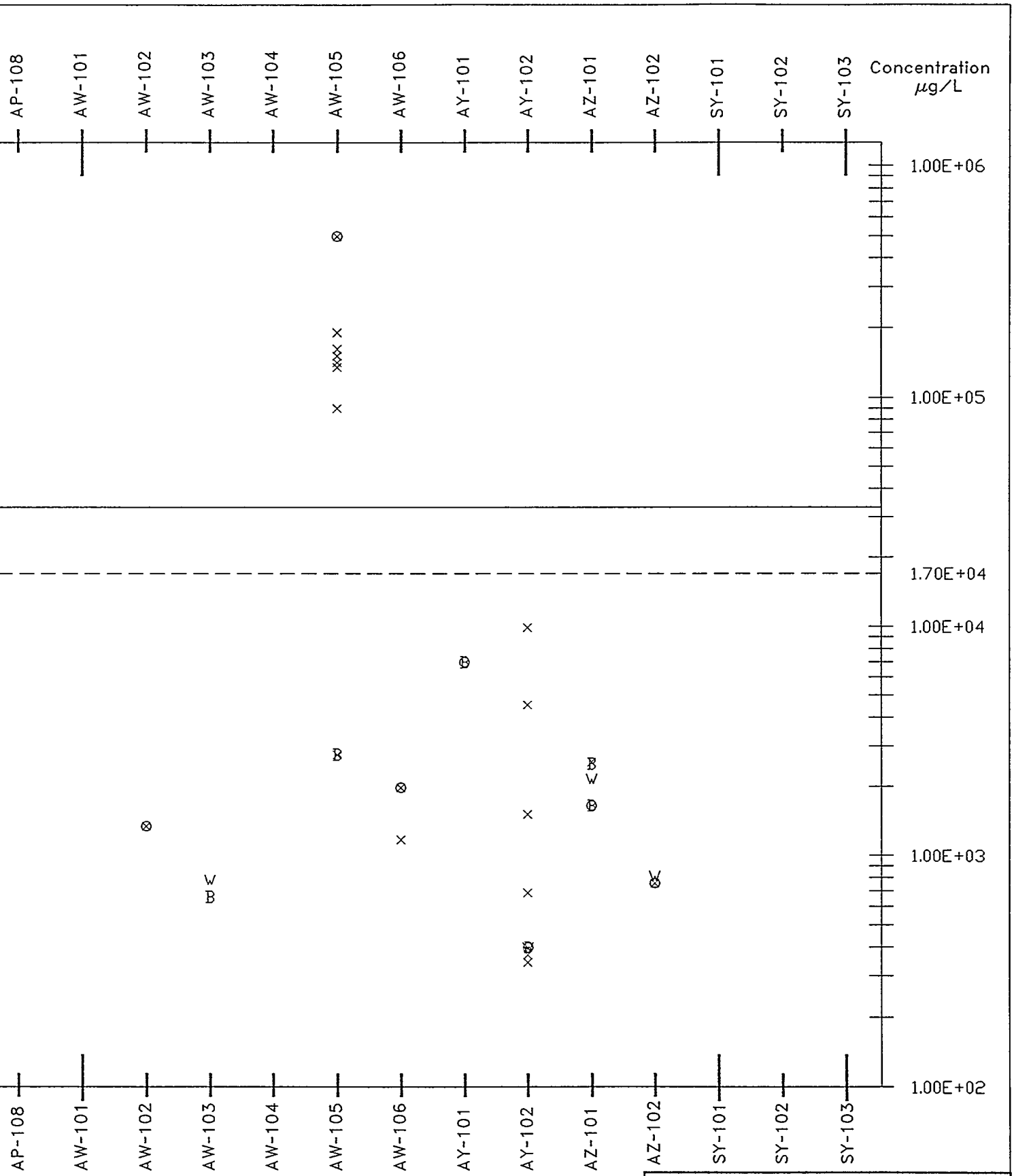
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
As - Arsenic Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC50 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+06
1.00E+05
3.32E+04
1.7E+04
(Preliminary)
1.00E+04
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



TCE Inventory

RAC

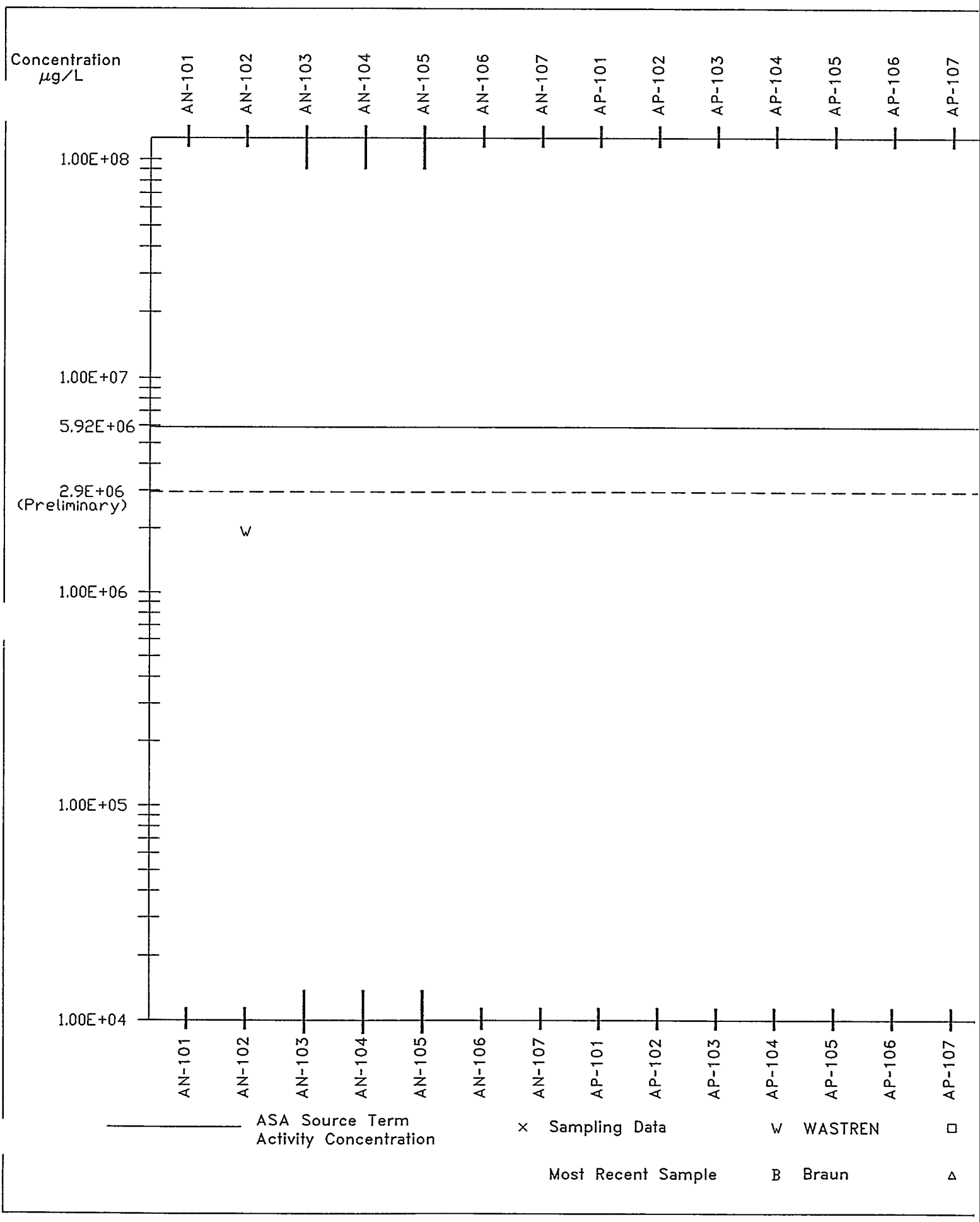
Extented tank lines represent Flamable Gas Watch List Tanks.

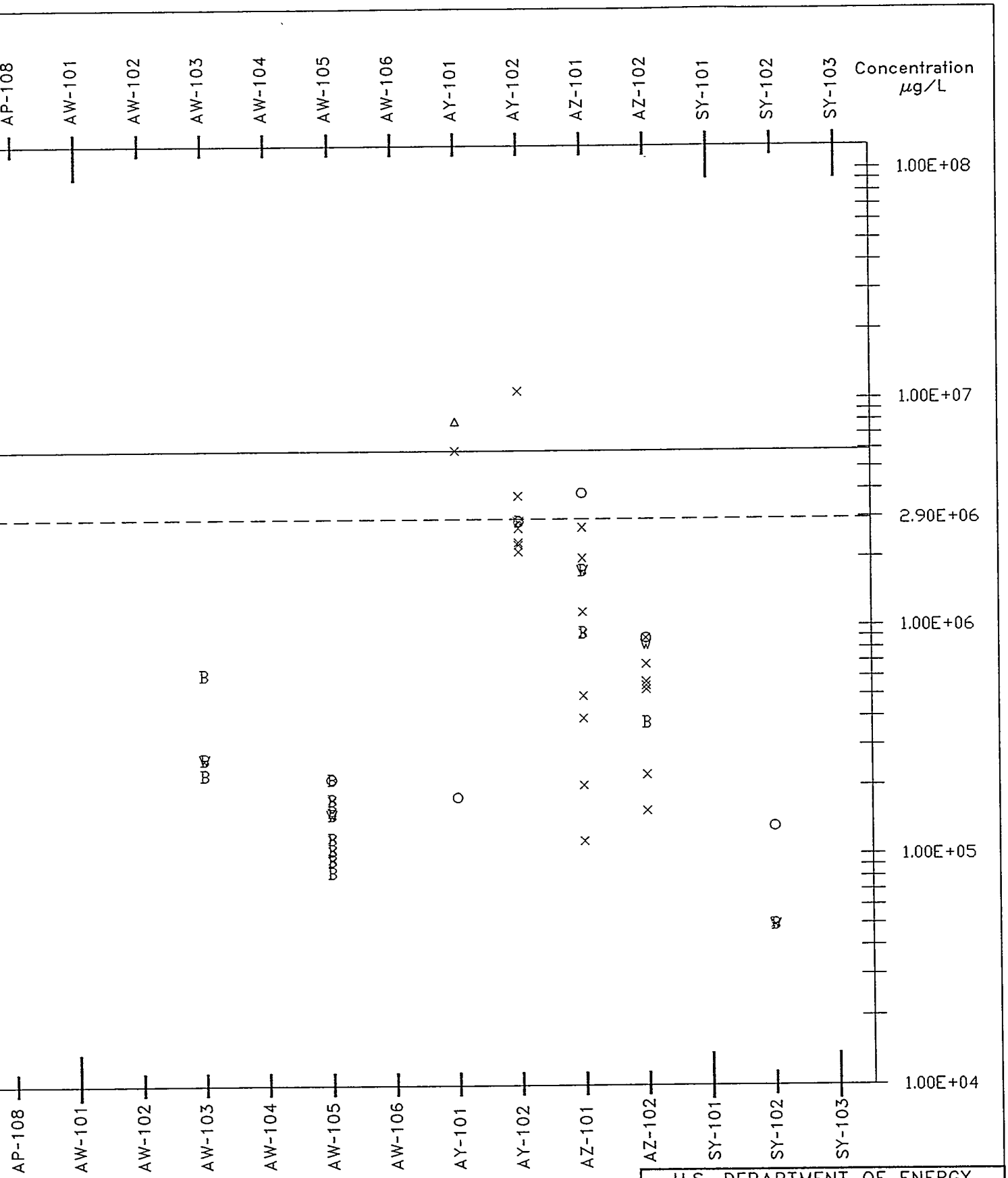
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Ba - Barium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC51 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+08
1.00E+07
5.92E+06
2.9E+06
(Preliminary)
W
1.00E+06
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□
Most Recent Sample
B Braun
△



TCE Inventory

RAC

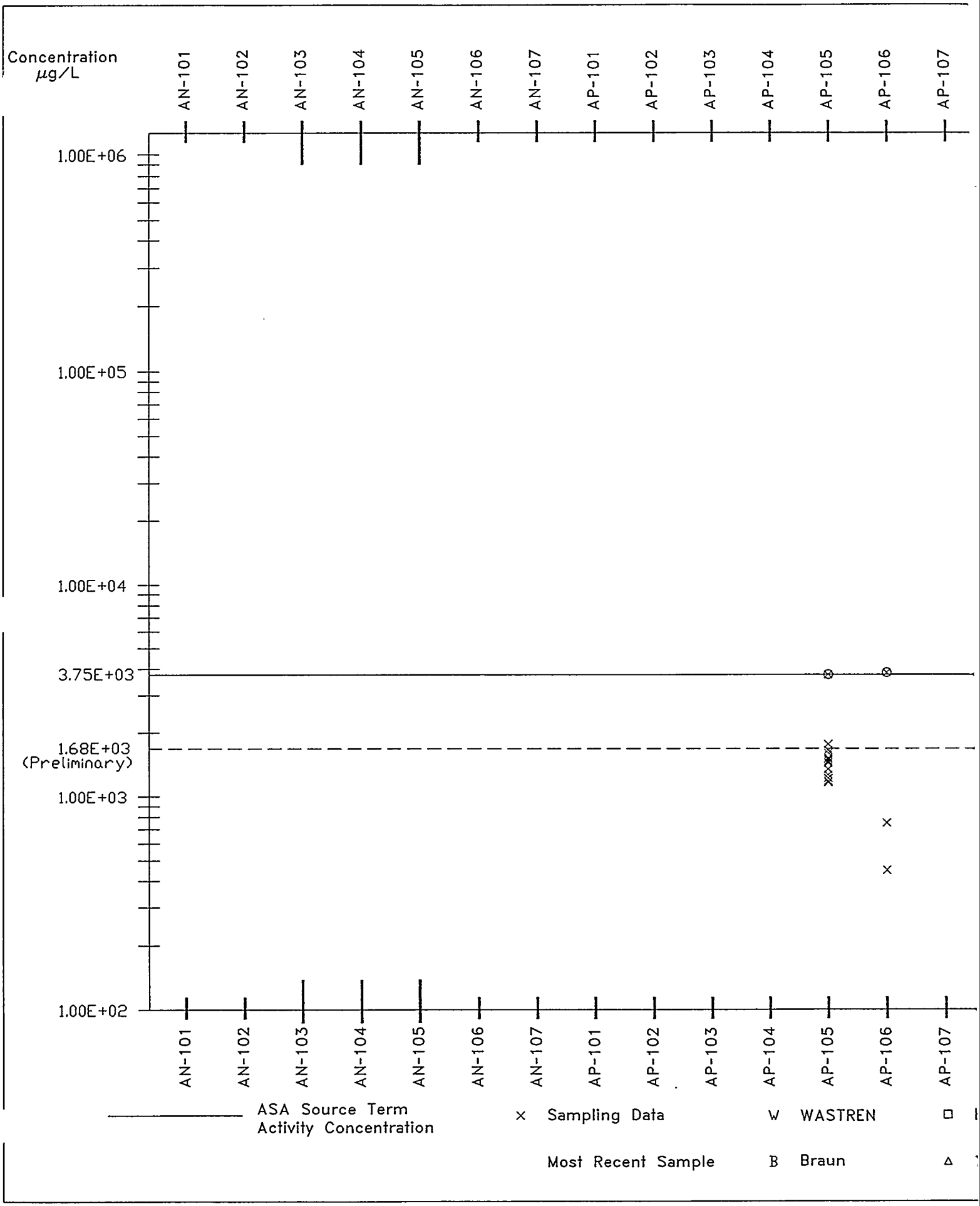
Extented tank lines represent Flamable Gas Watch List Tanks.

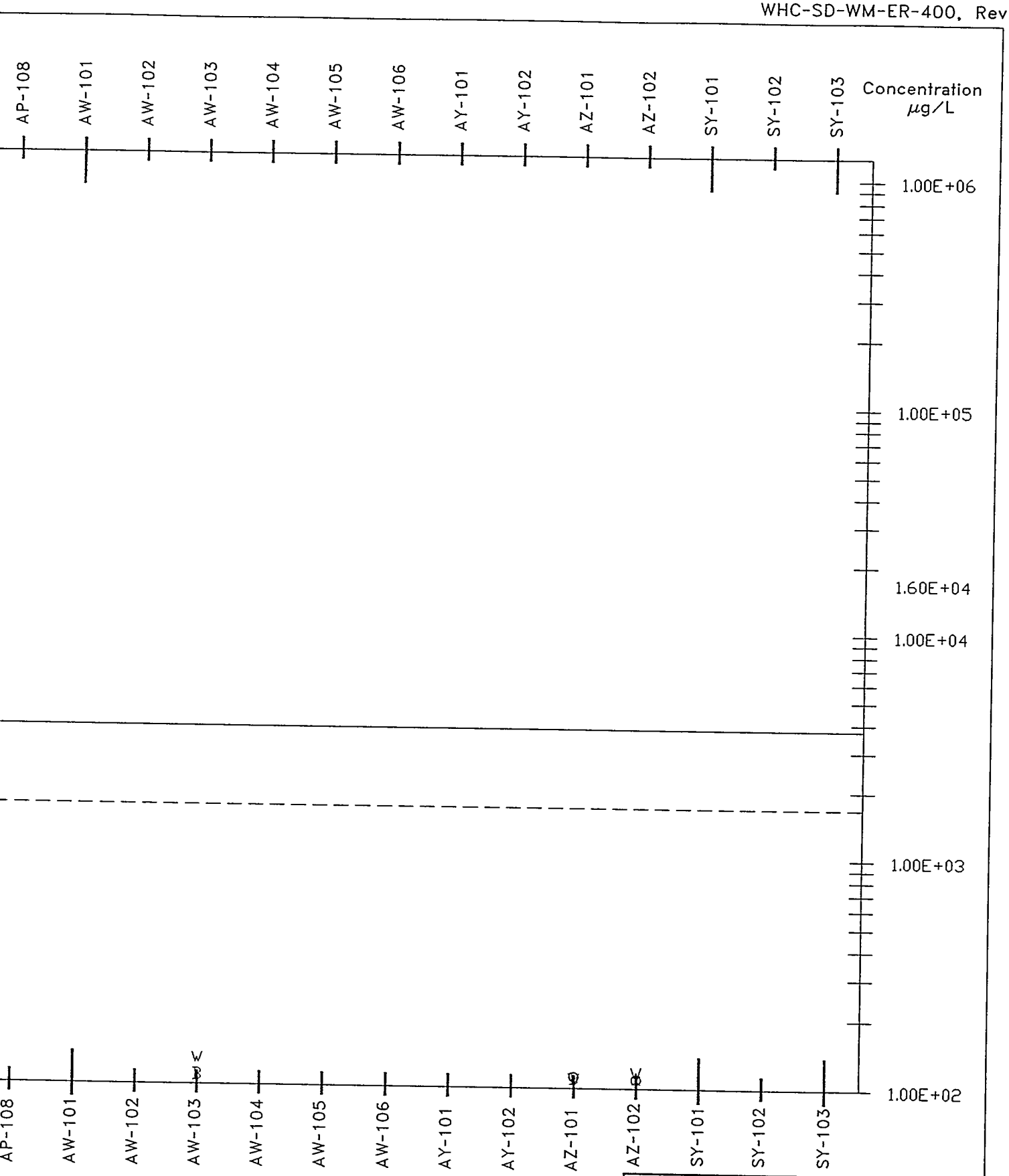
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Ba - Barium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC52 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+06
1.00E+05
1.00E+04
3.75E+03
1.68E+03
(Preliminary)
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



CE Inventory

AC

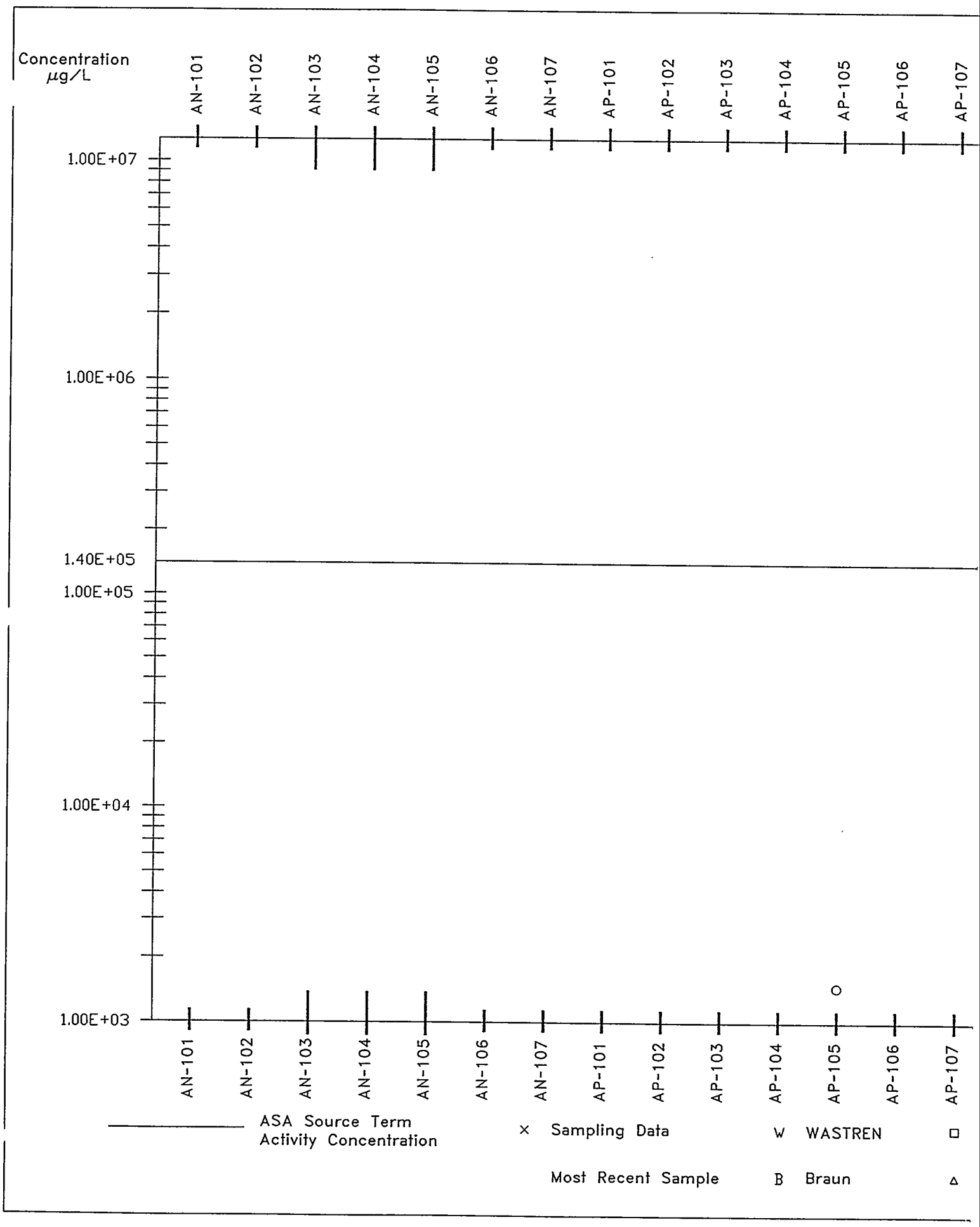
Extented tank lines represent Flamable Gas Watch List Tanks.

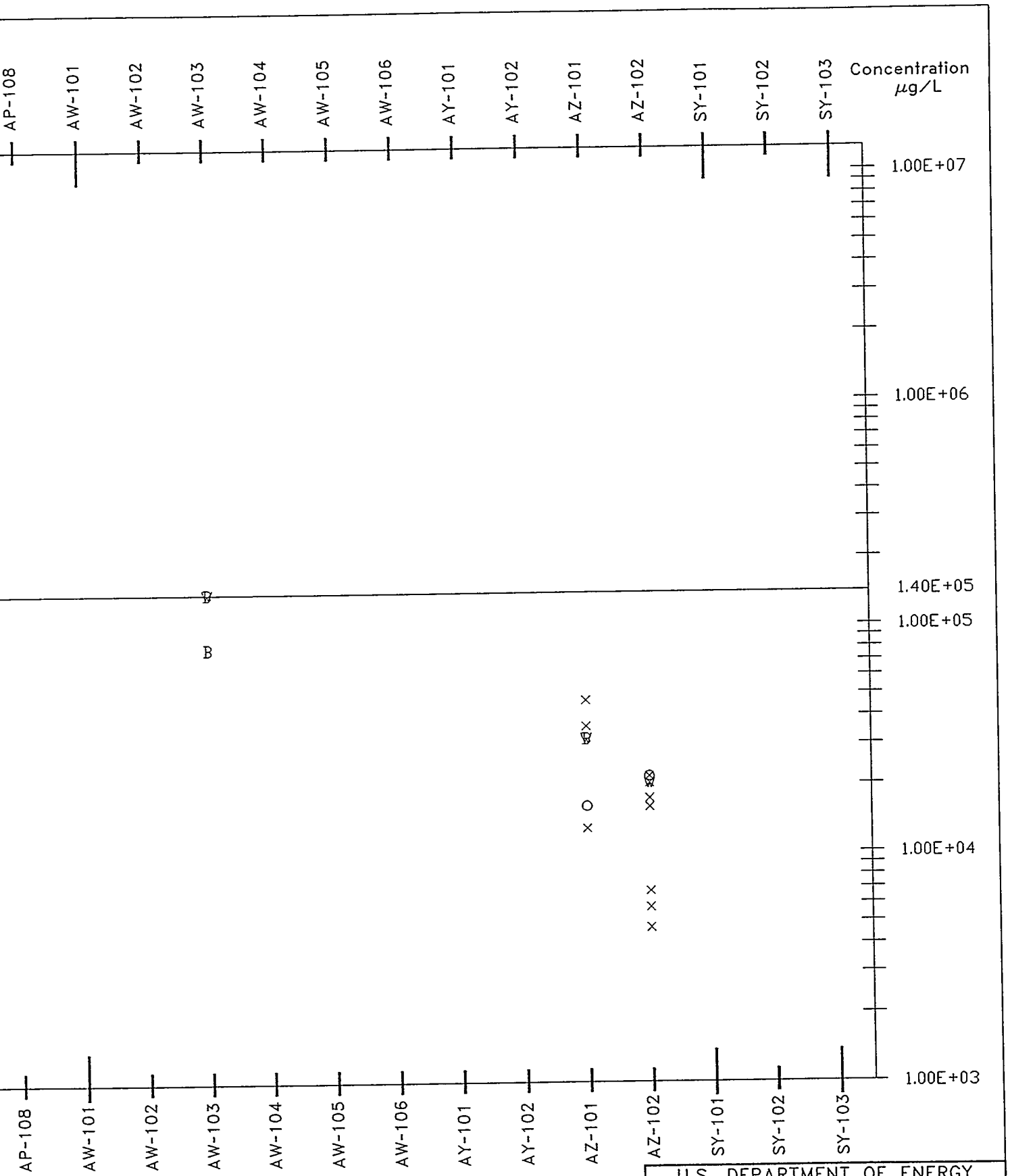
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Be - Beryllium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC53 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
1.00E+07
1.00E+06
1.40E+05
1.00E+05
1.00E+04
1.00E+03
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
Most Recent Sample
B Braun



HTCE Inventory

TRAC

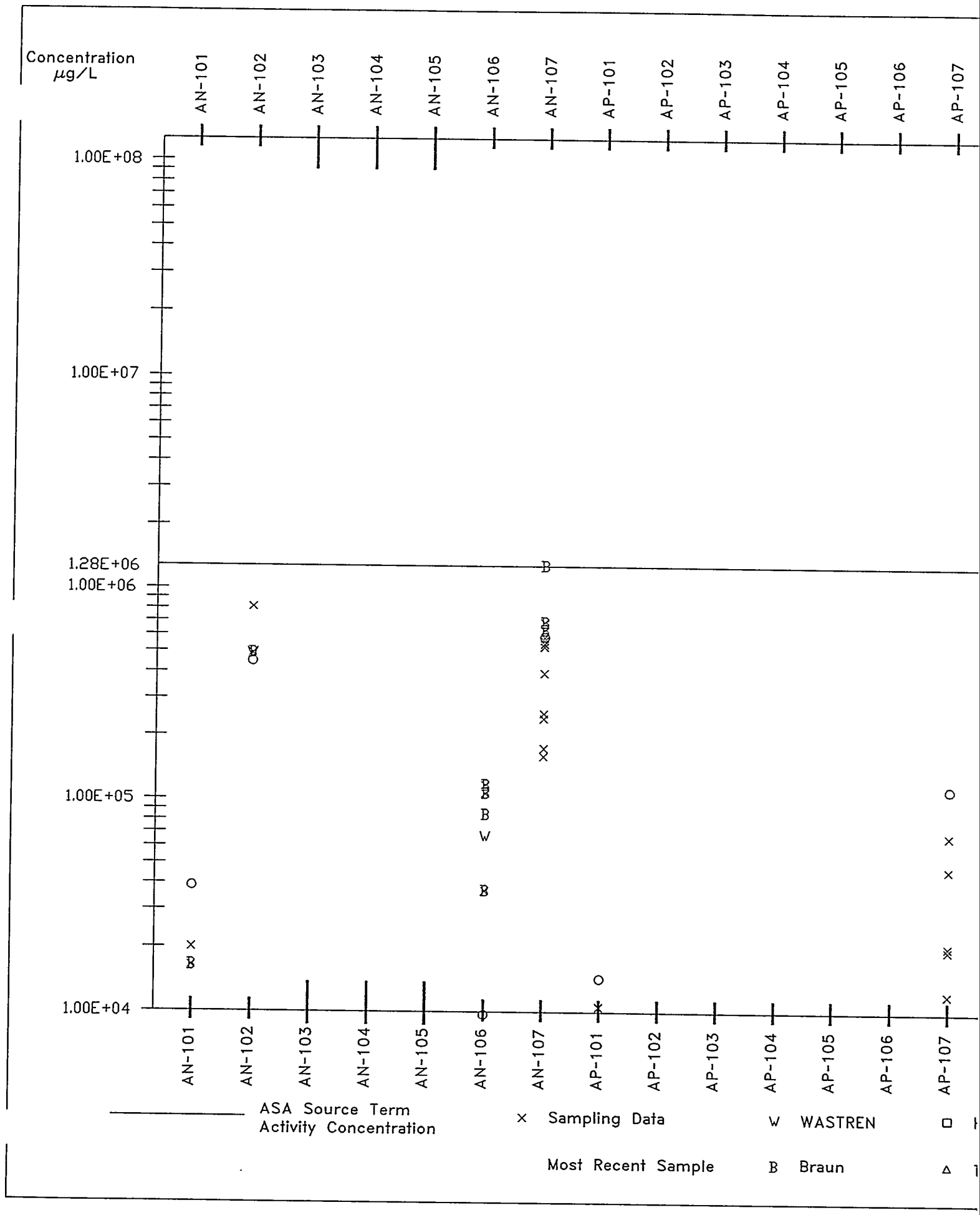
Extented tank lines represent Flamable Gas Watch List Tanks.

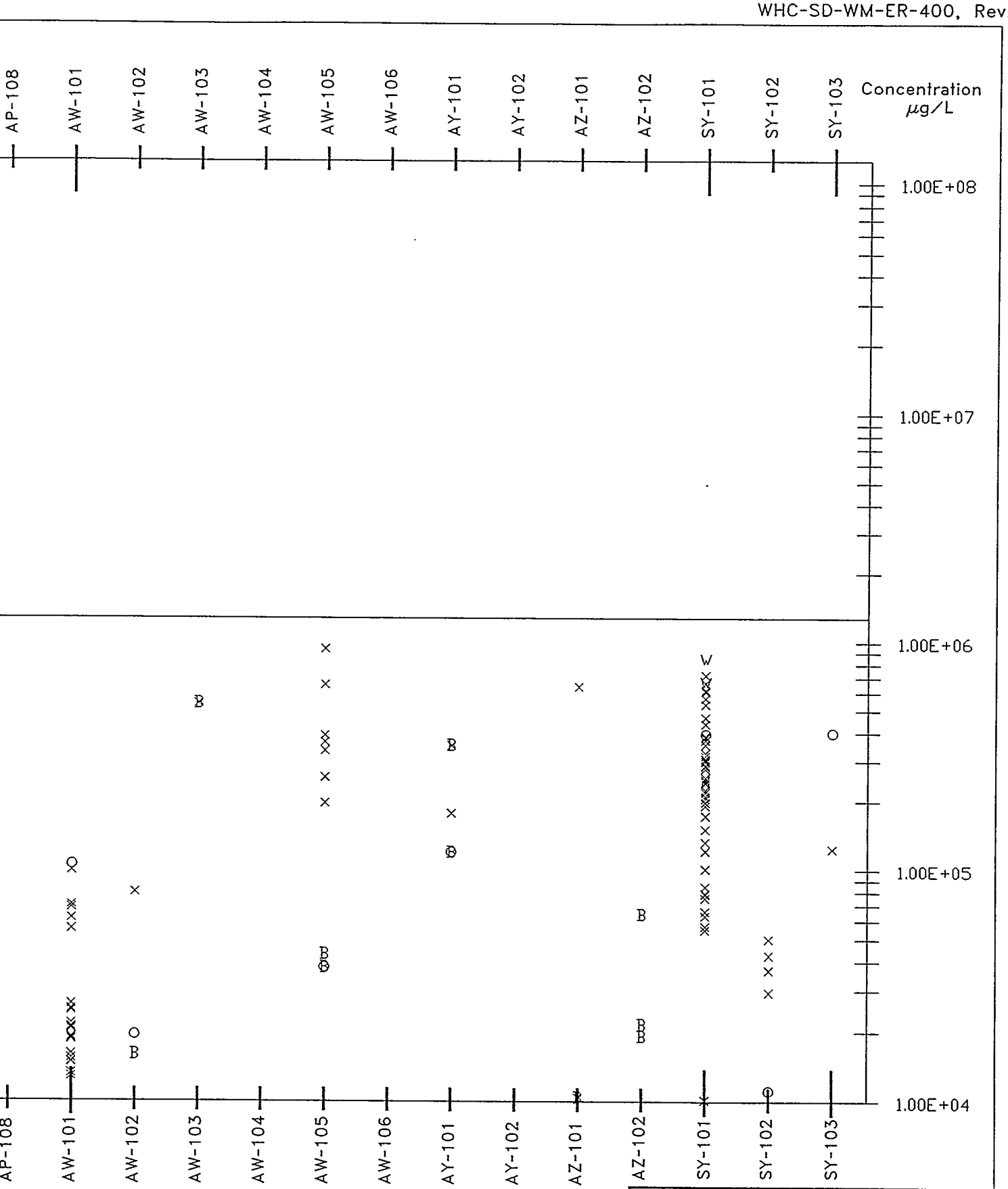
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Be - Beryllium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC54 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
1.00E+08
1.00E+07
1.28E+06
1.00E+06
1.00E+05
1.00E+04
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



CE Inventory

AC

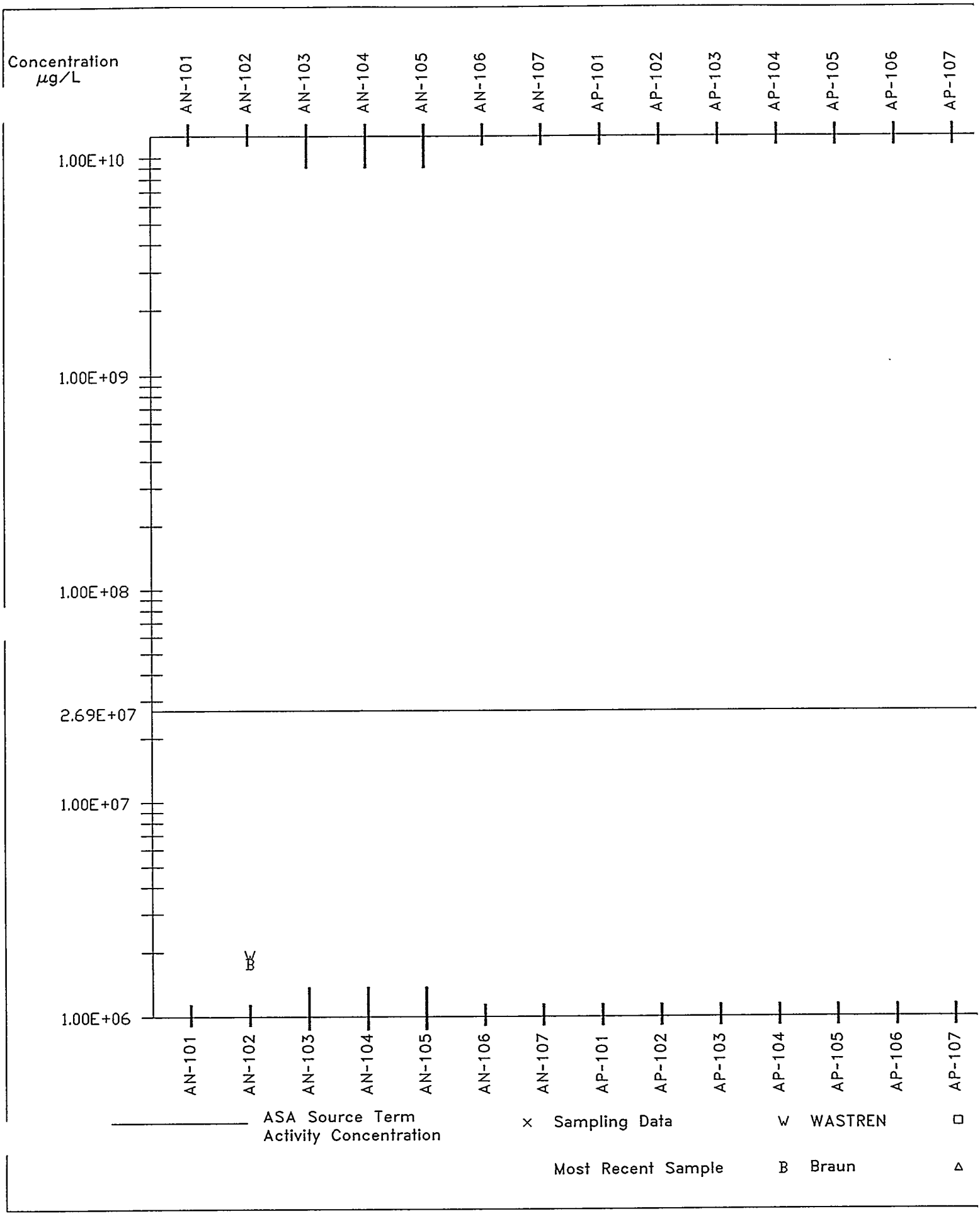
Extented tank lines represent Flamable Gas Watch List Tanks.

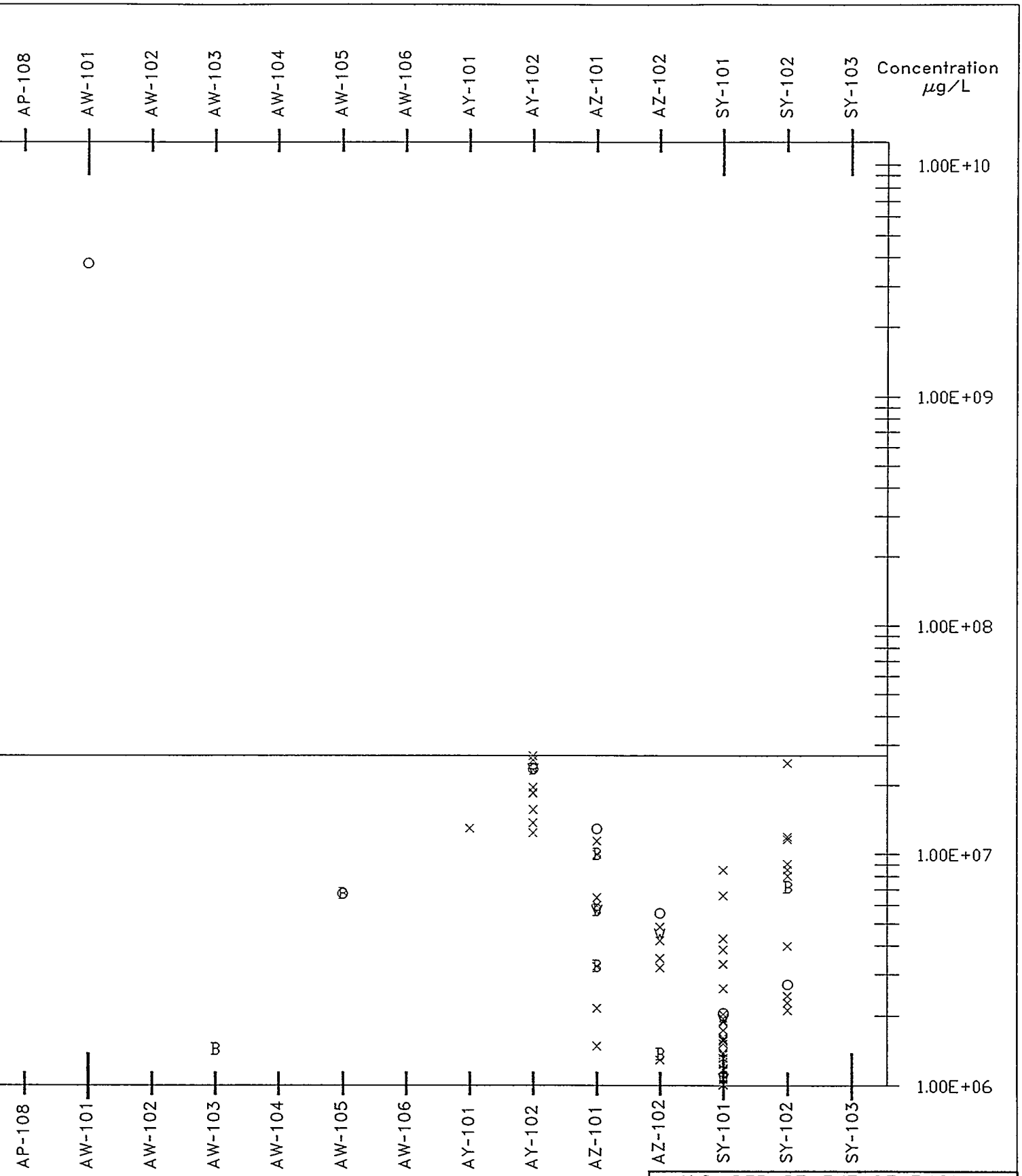
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Ca - Calcium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC55 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+10
1.00E+09
1.00E+08
2.69E+07
1.00E+07
1.00E+06
W
B
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



ITCE Inventory

TRAC

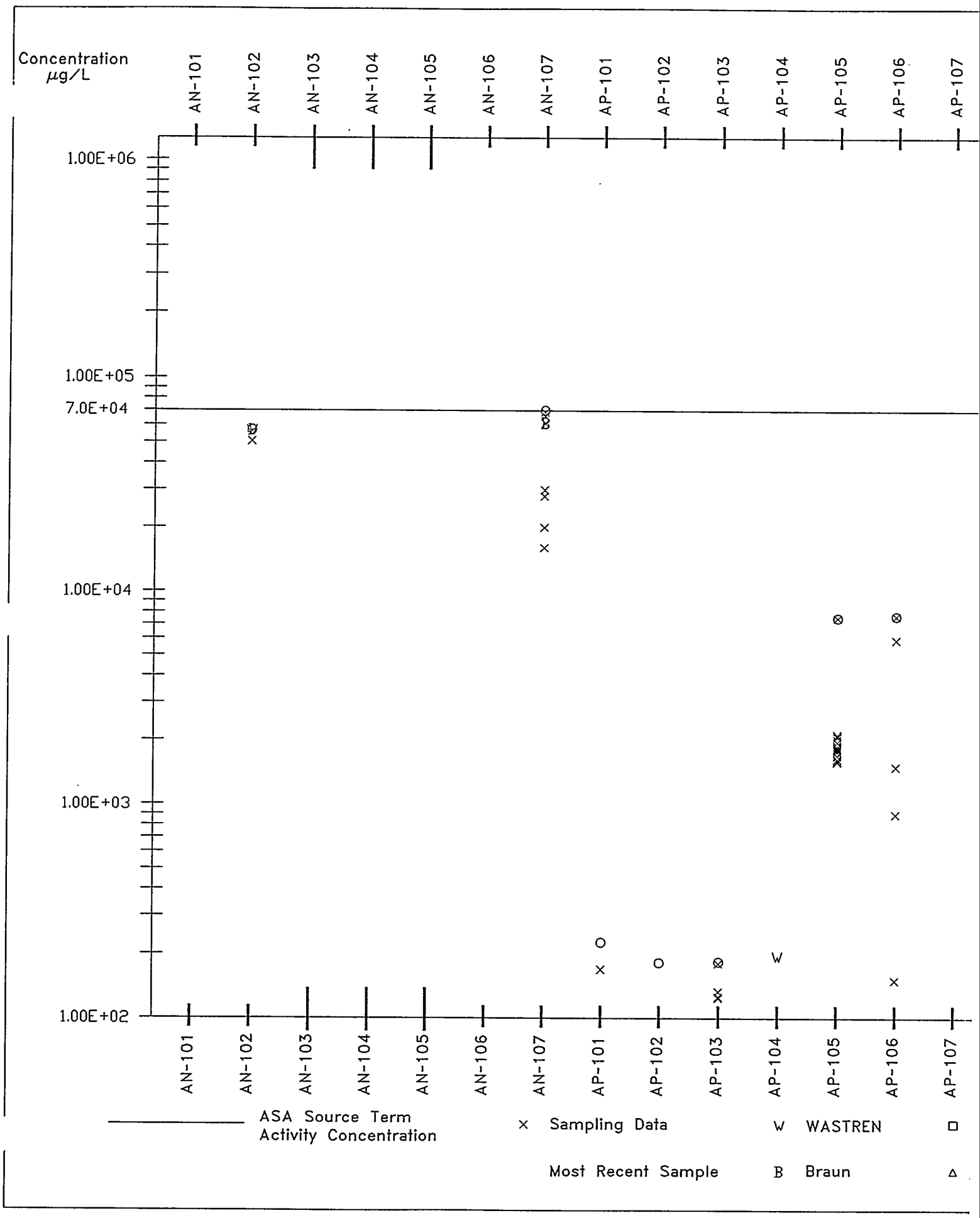
Extented tank lines represent Flamable Gas Watch List Tanks.

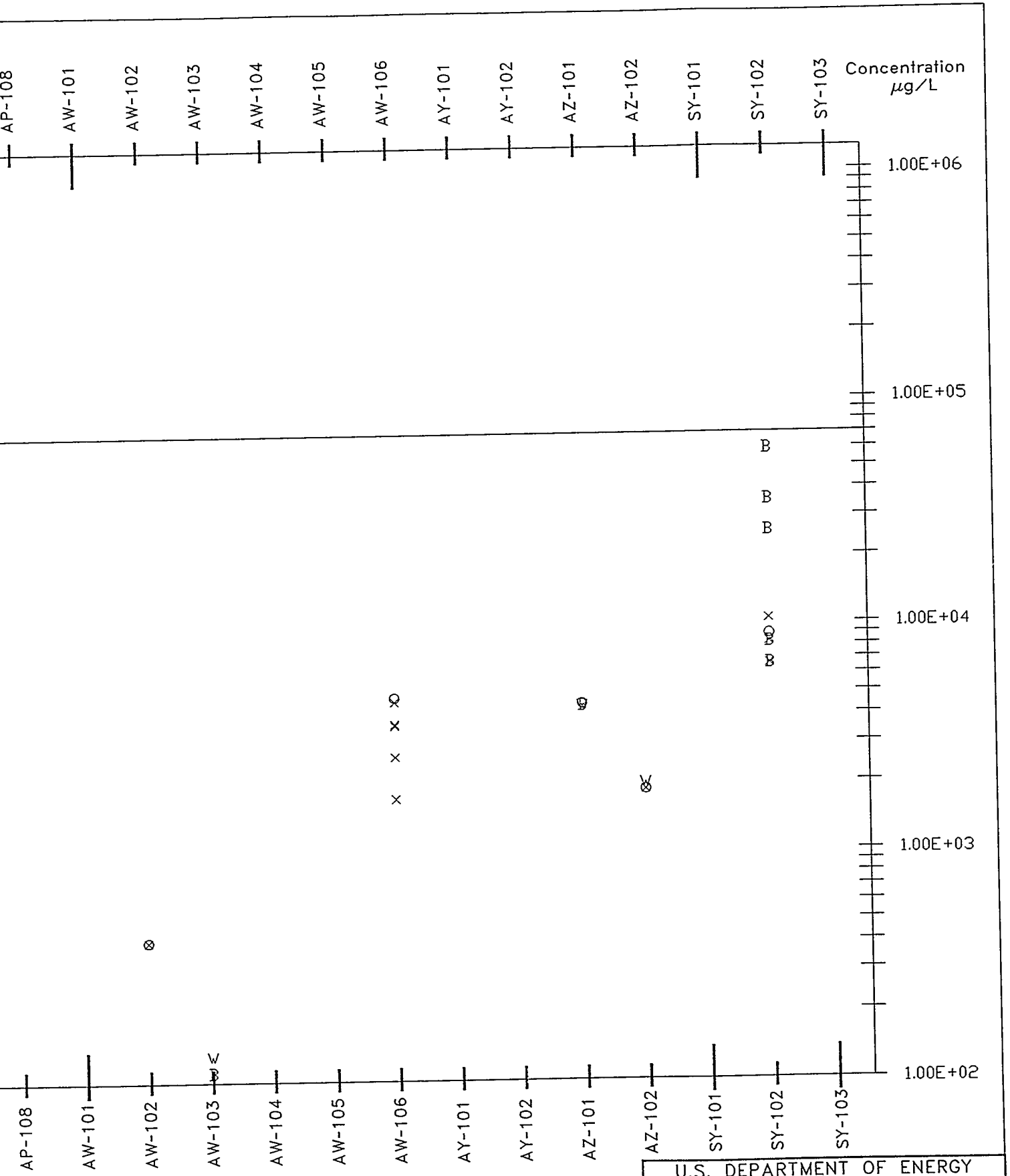
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Ca - Calcium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC56 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
1.00E+06
1.00E+05
7.0E+04
1.00E+04
1.00E+03
1.00E+02
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



HTCE Inventory

TRAC

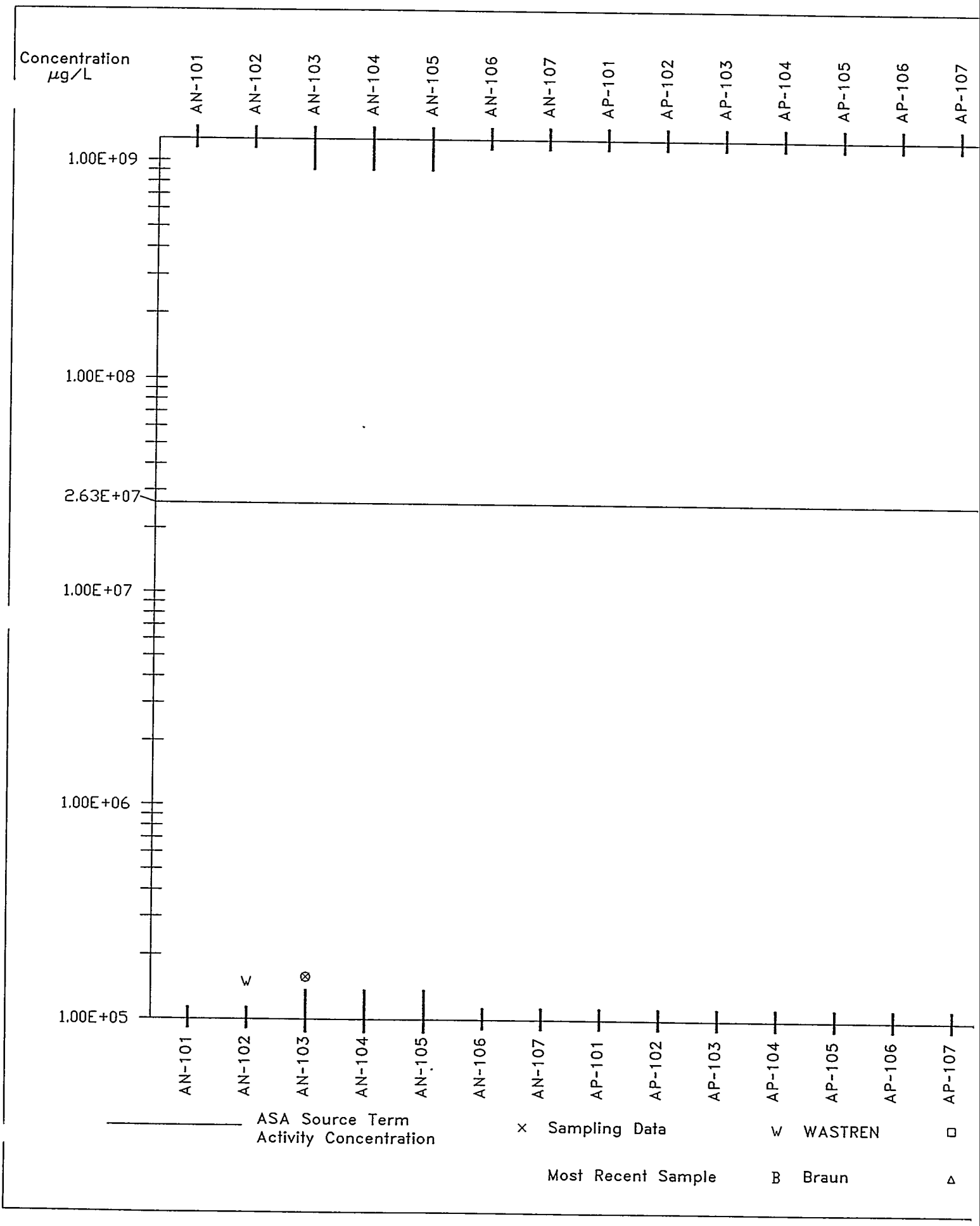
Extented tank lines represent Flamable Gas Watch List Tanks.

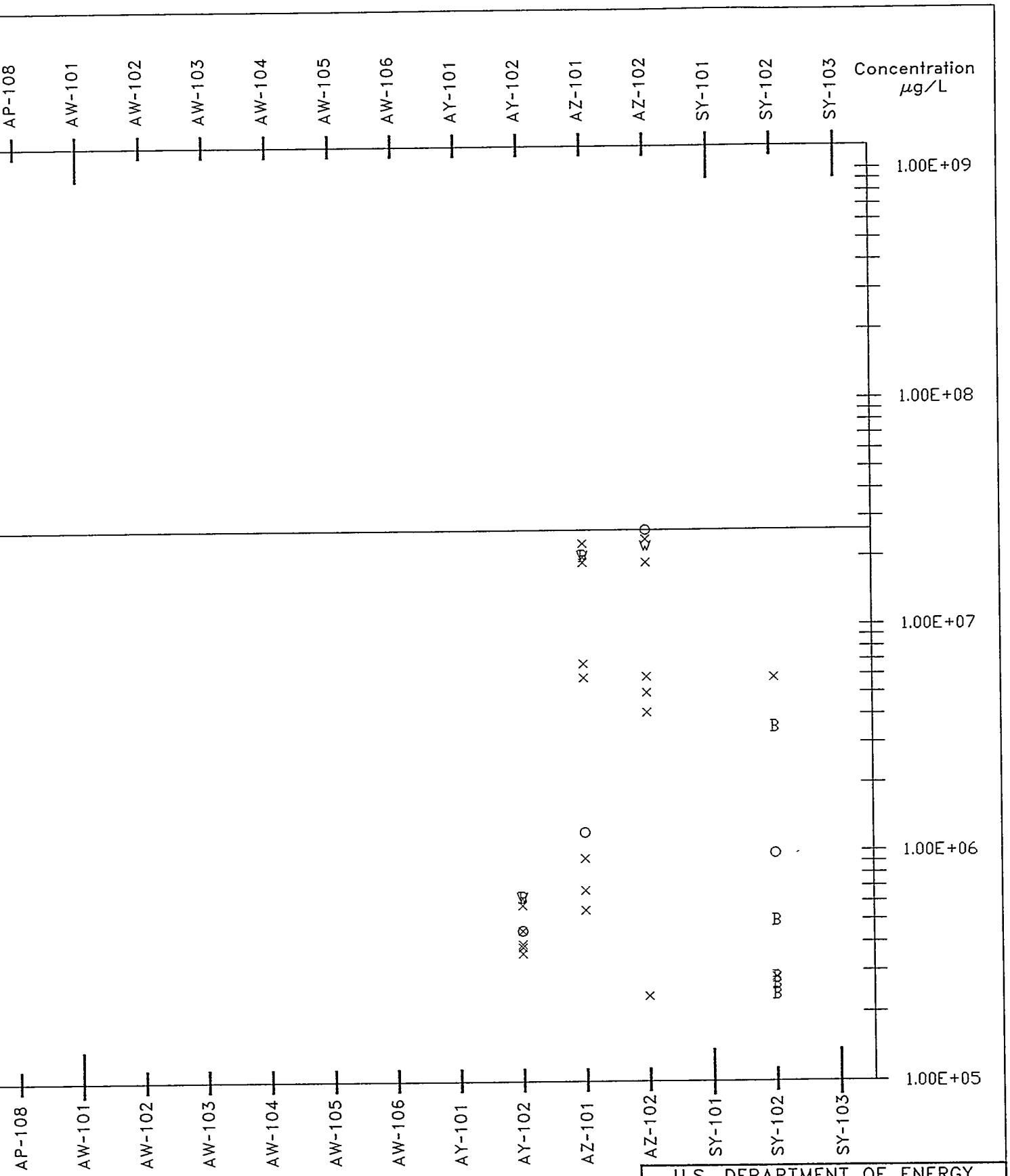
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Cd - Cadmium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CC57 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+09
1.00E+08
2.63E+07
1.00E+07
1.00E+06
1.00E+05
W
⊗
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□
Most Recent Sample
B Braun
△



TCE Inventory

RAC

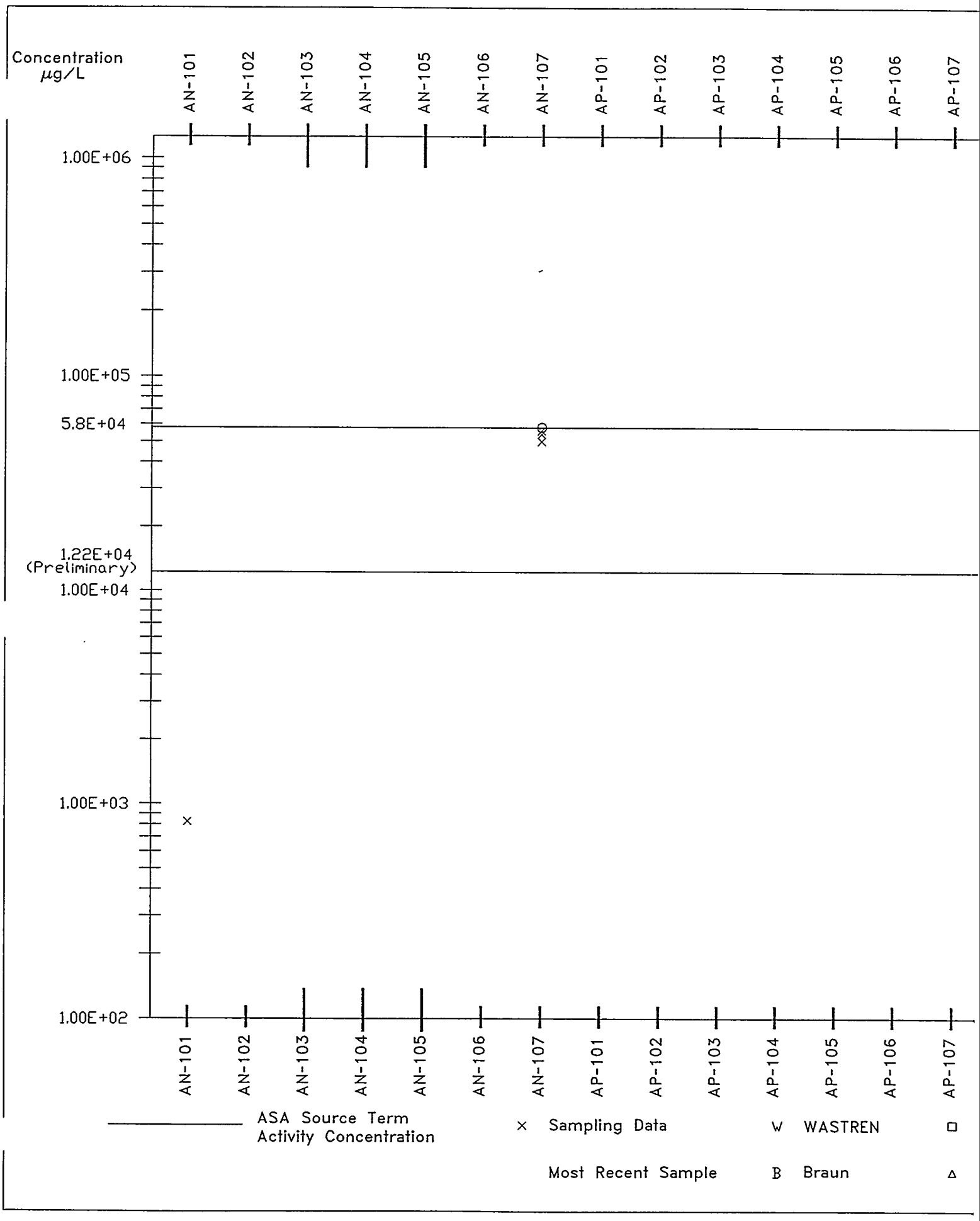
Extented tank lines represent Flamable Gas Watch List Tanks.

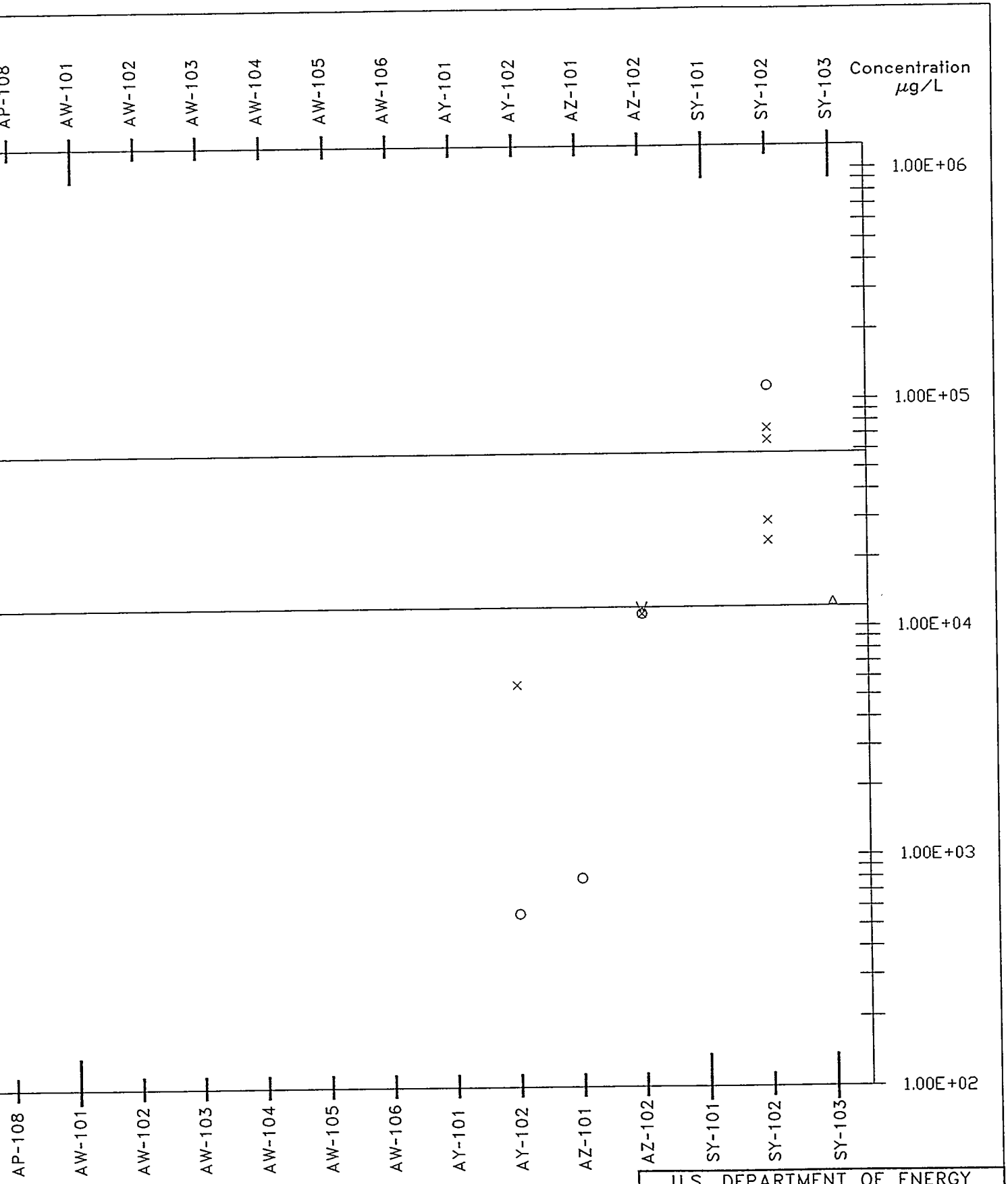
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Cd - Cadmium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC58 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+06
1.00E+05
5.8E+04
1.22E+04
(Preliminary)
1.00E+04
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun



TCE Inventory

RAC

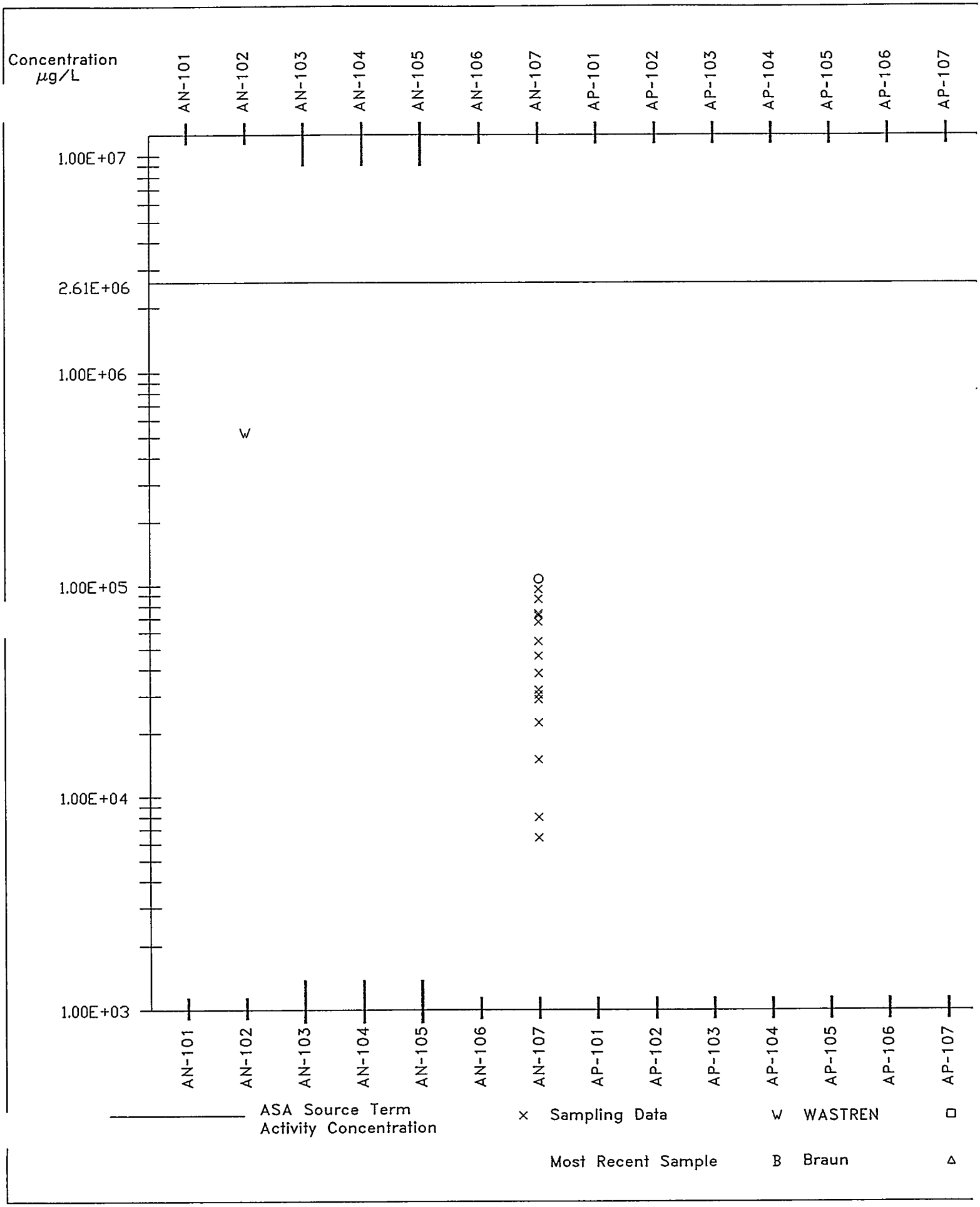
Extented tank lines represent Flamable Gas Watch List Tanks.

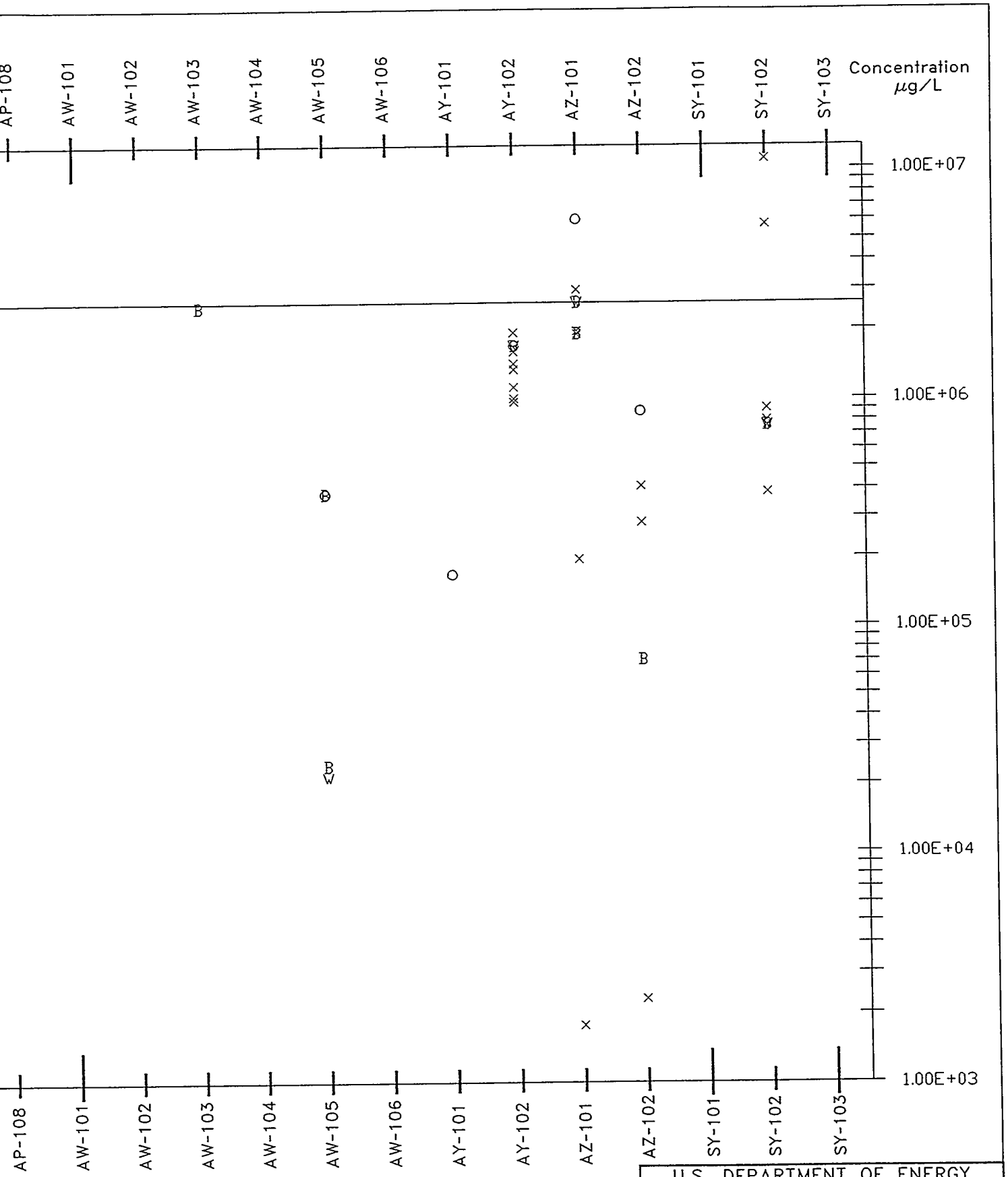
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Ce - Cerium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC59 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+07
2.61E+06
1.00E+06
1.00E+05
1.00E+04
1.00E+03
W
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



TCE Inventory

RAC

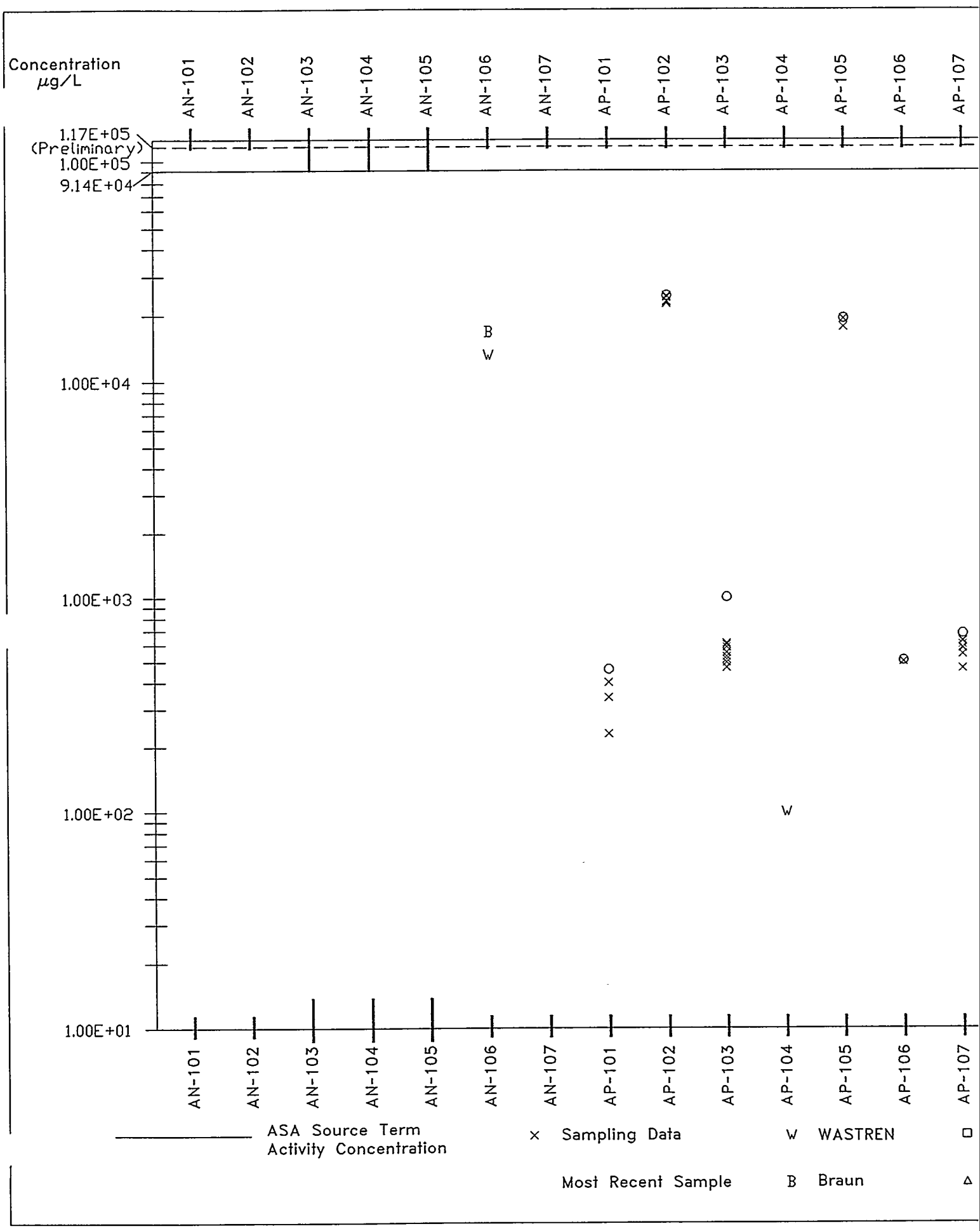
Extented tank lines represent Flamable Gas Watch List Tanks.

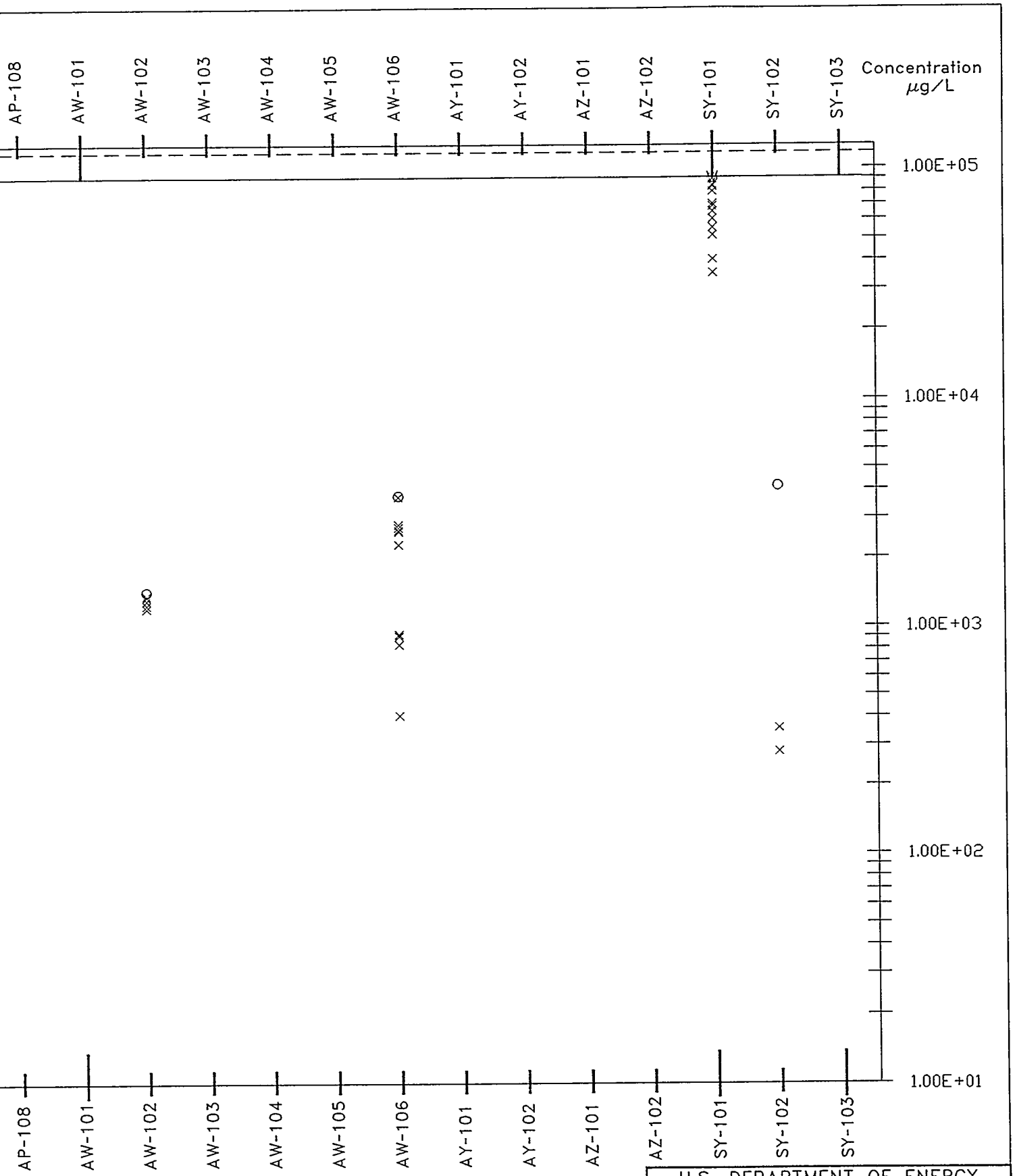
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Ce - Cerium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC60 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
1.17E+05
(Preliminary)
1.00E+05
9.14E+04
1.00E+04
1.00E+03
1.00E+02
1.00E+01
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
B
W
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



HTCE Inventory

TRAC

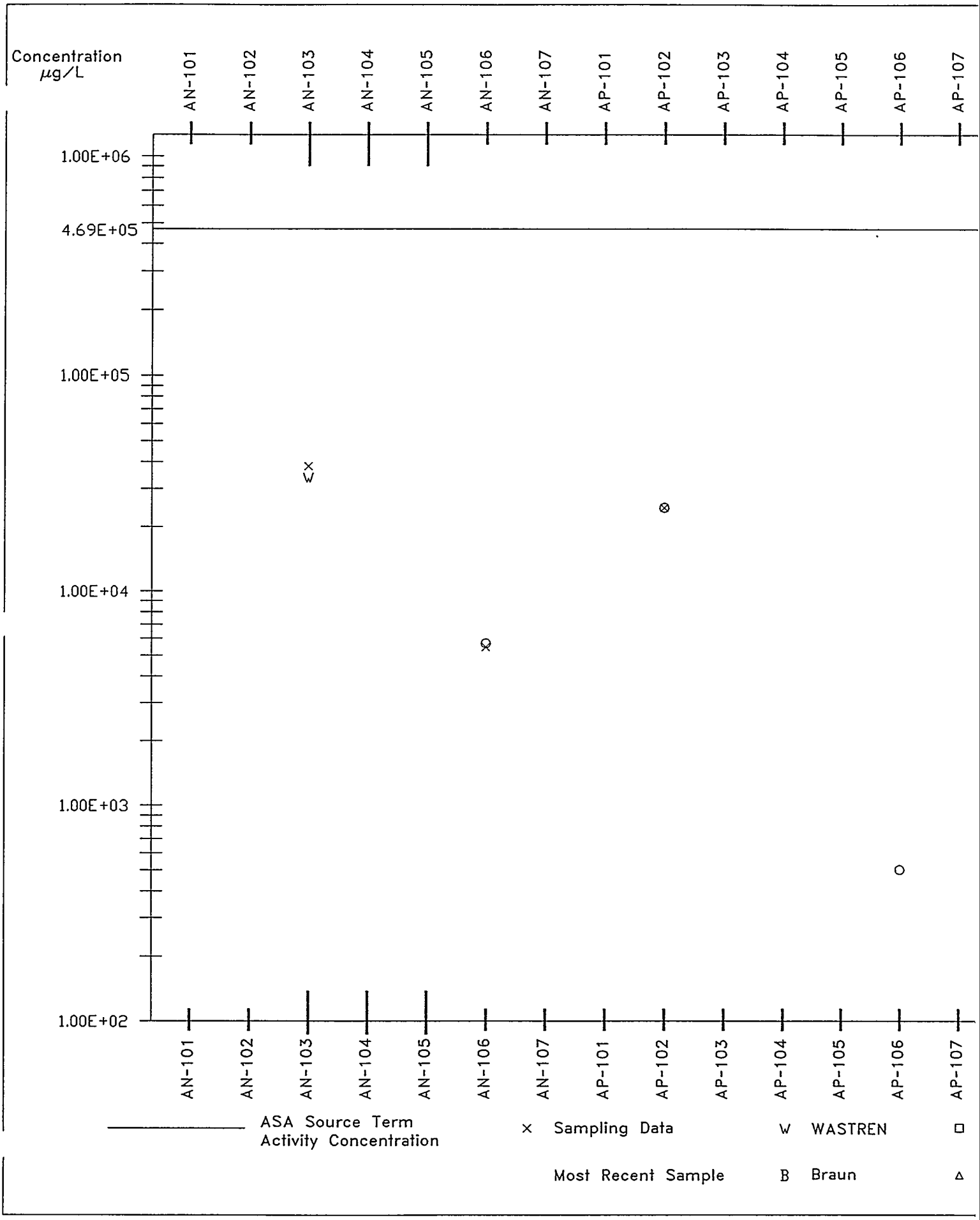
Extented tank lines represent Flamable Gas Watch List Tanks.

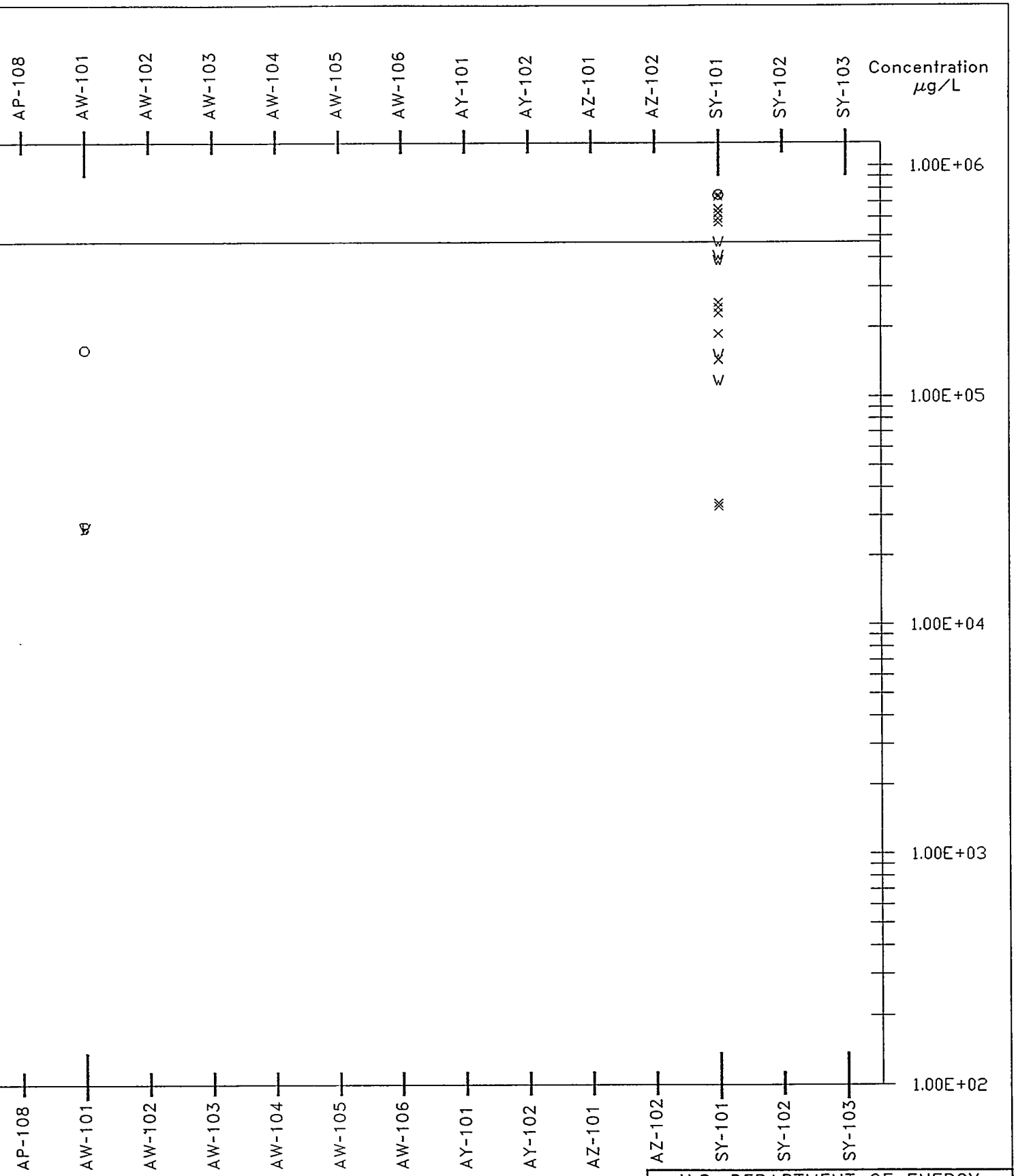
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
CN - Cyanide Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC61 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+06
4.69E+05
1.00E+05
1.00E+04
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



HTCE Inventory

TRAC

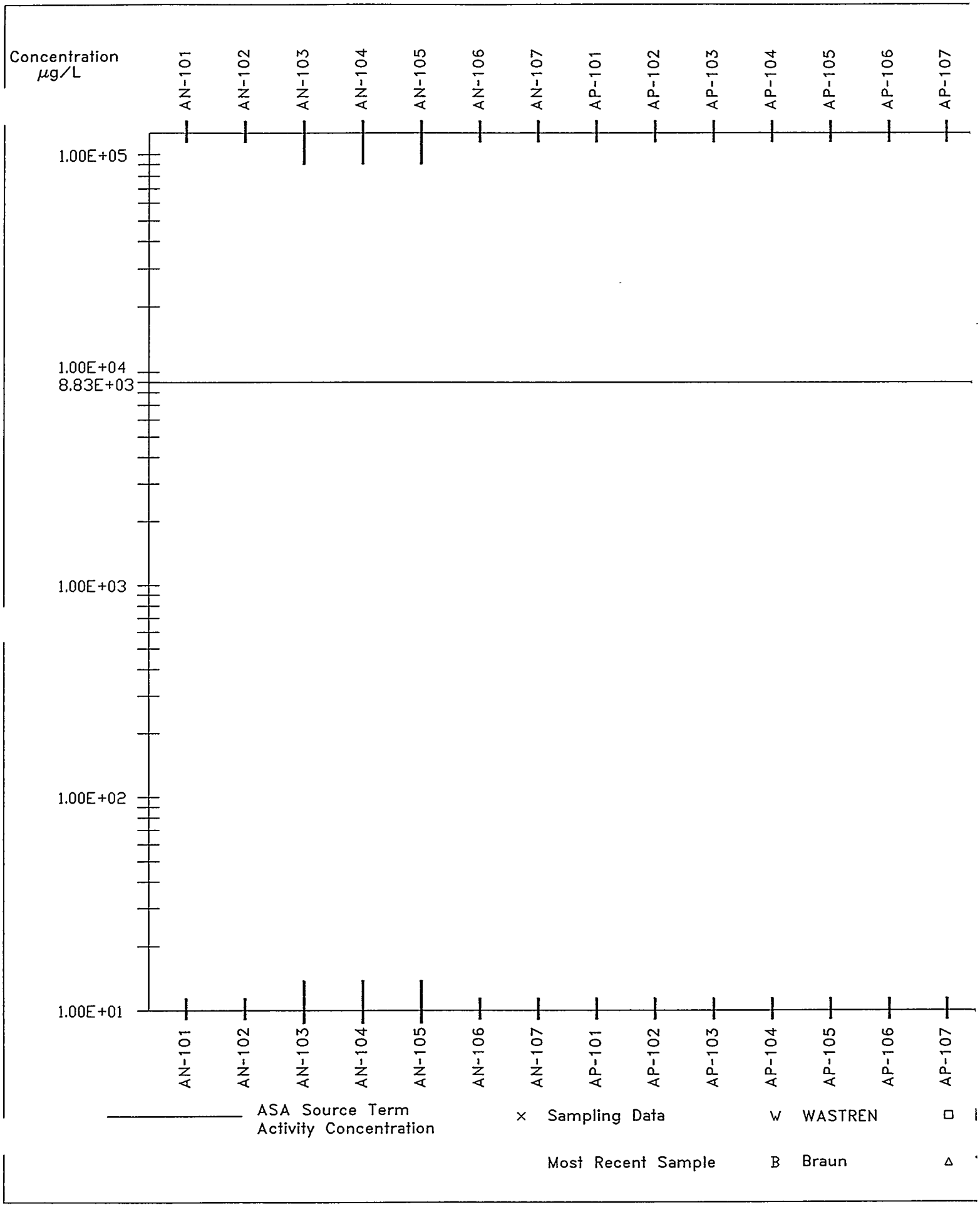
Extented tank lines represent Flamable Gas Watch List Tanks.

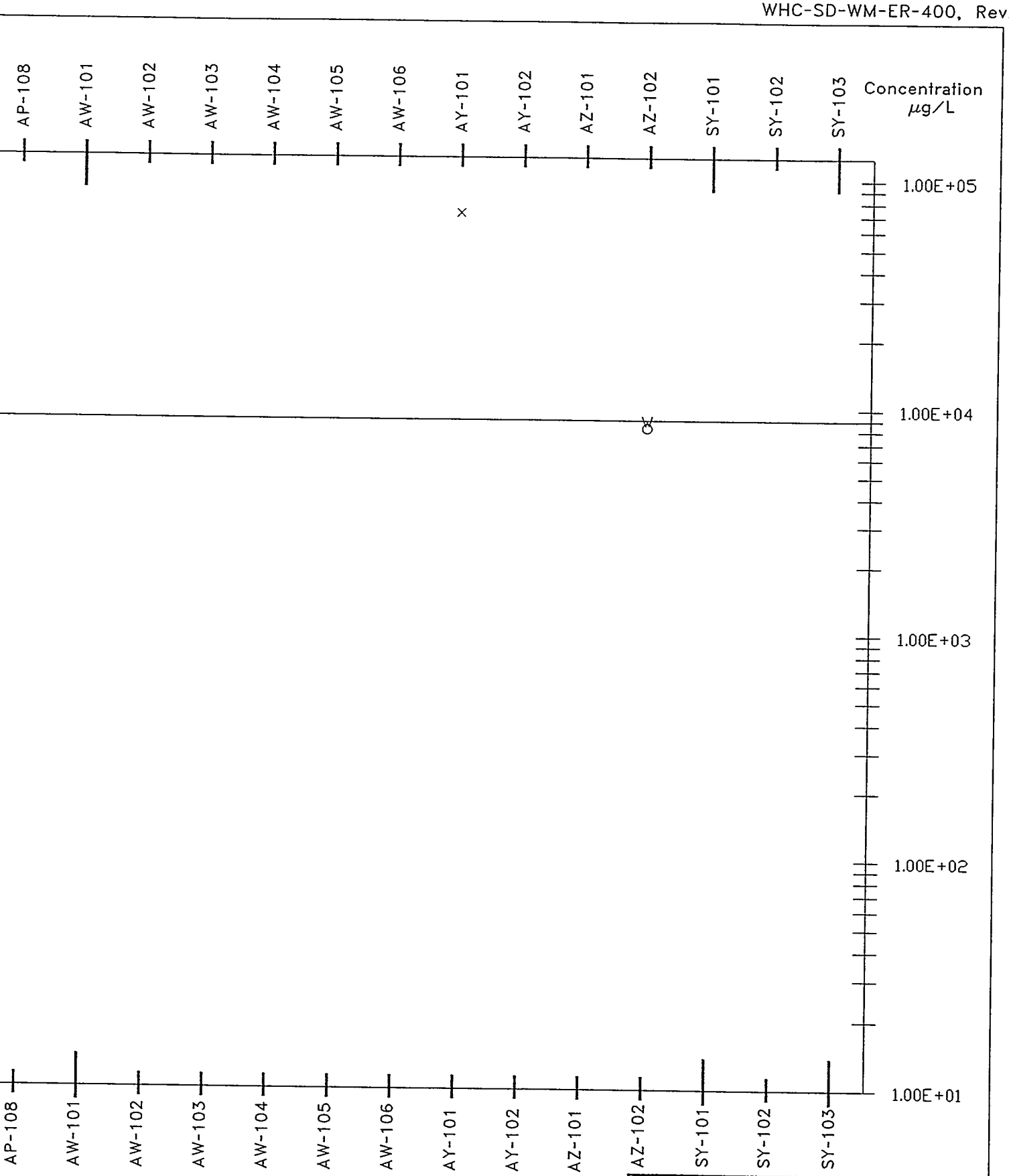
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
CN - Cyanide Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC62 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+05
1.00E+04
8.83E+03
1.00E+03
1.00E+02
1.00E+01
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
Most Recent Sample
B Braun



CE Inventory

AC

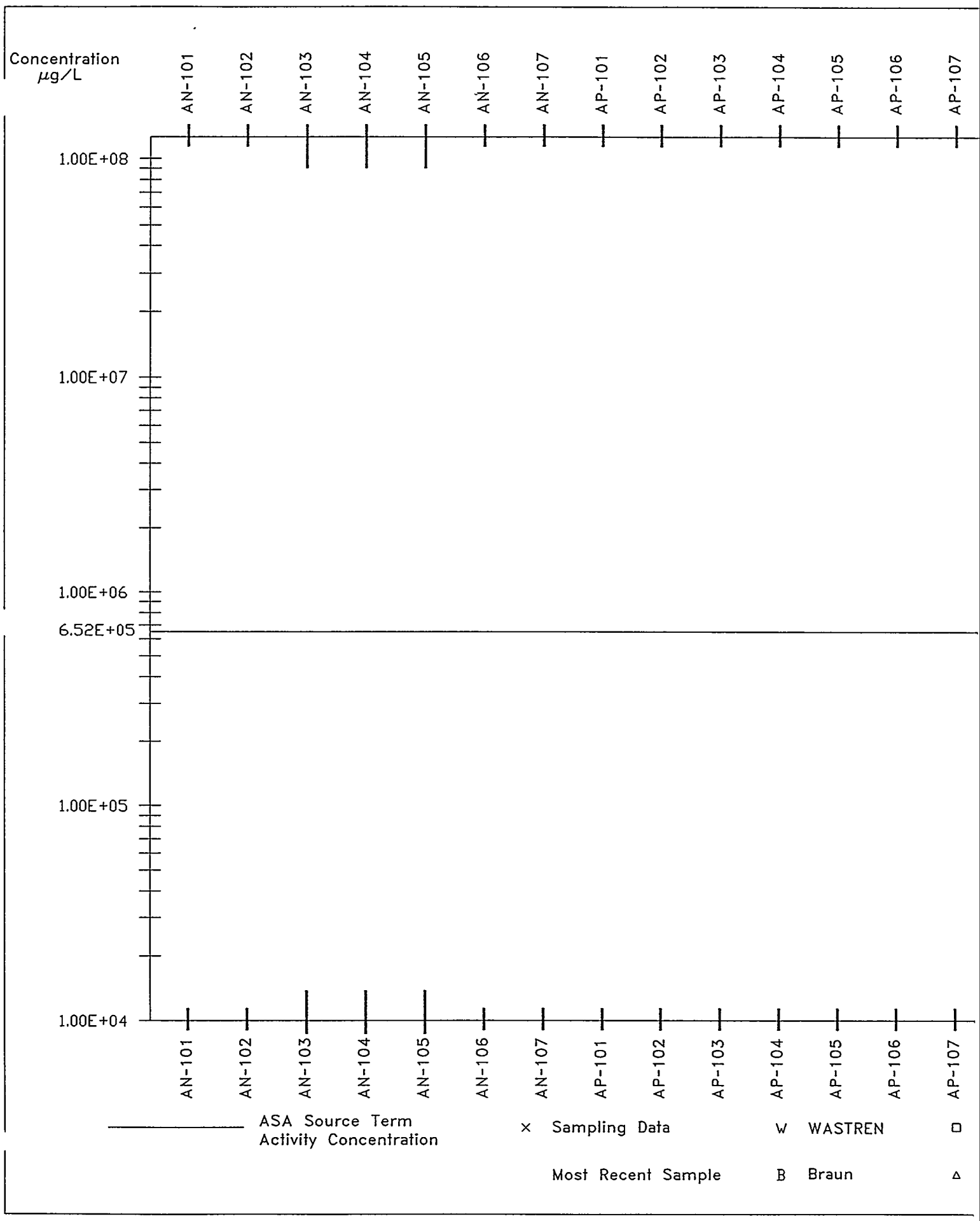
Extented tank lines represent Flamable Gas Watch List Tanks.

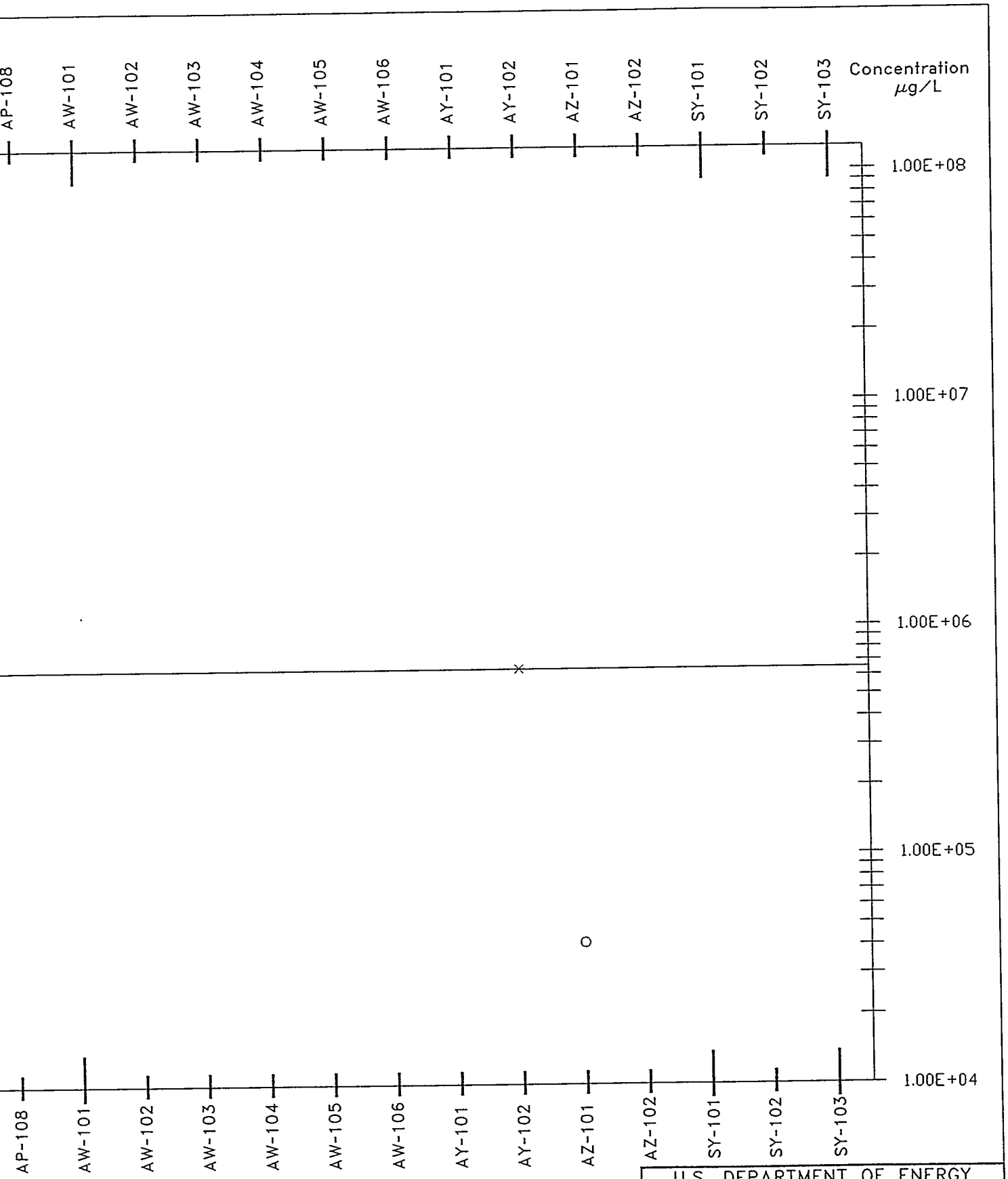
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Co - Cobalt Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC63 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+08
1.00E+07
1.00E+06
6.52E+05
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
Most Recent Sample
B Braun



ITCE Inventory

TRAC

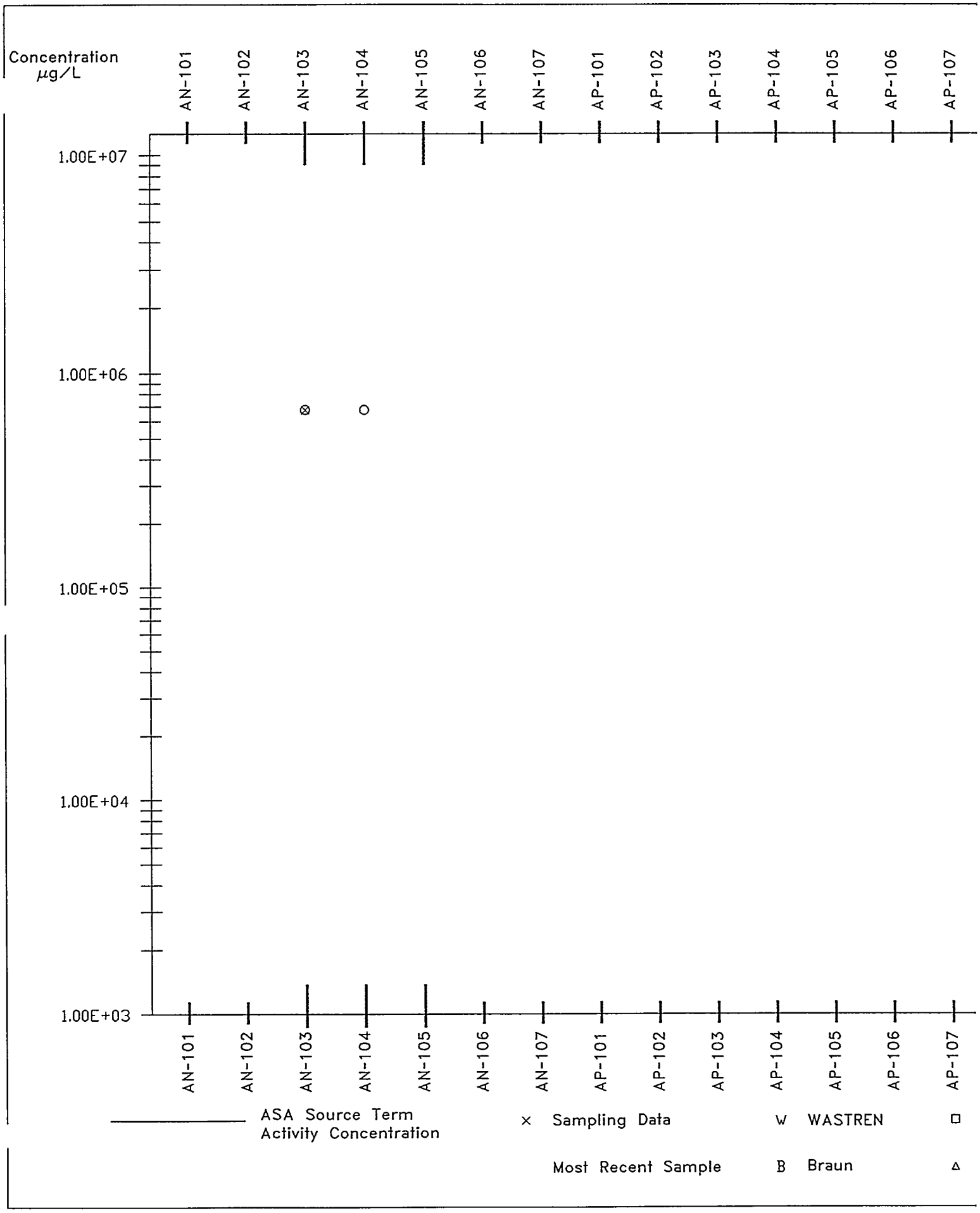
Extented tank lines represent Flamable Gas Watch List Tanks.

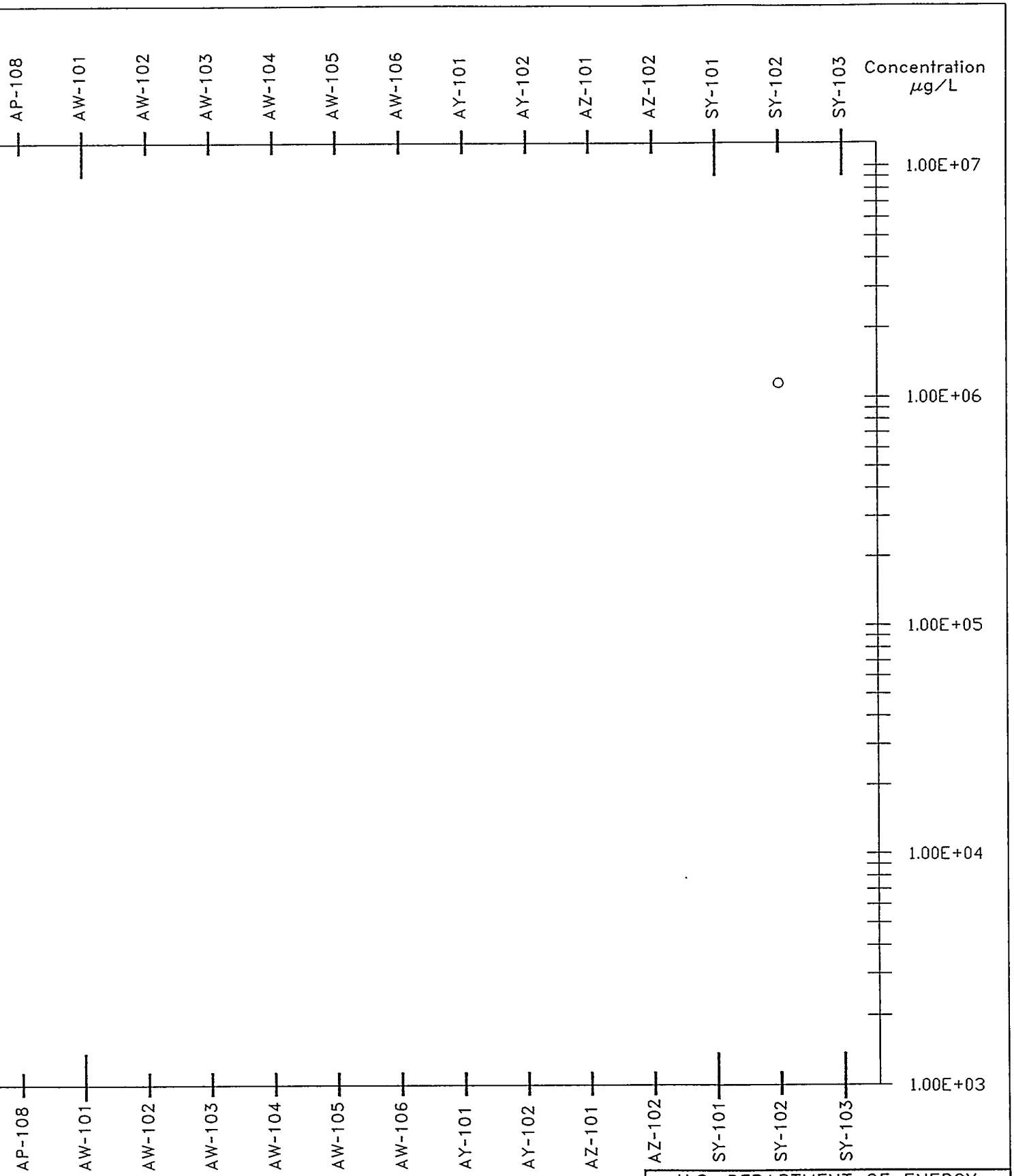
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Co - Cobalt Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC64 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
1.00E+07
1.00E+06
1.00E+05
1.00E+04
1.00E+03
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
ASA Source Term
Activity Concentration
Sampling Data
W WASTREN
Most Recent Sample
B Braun



ITCE Inventory

TRAC

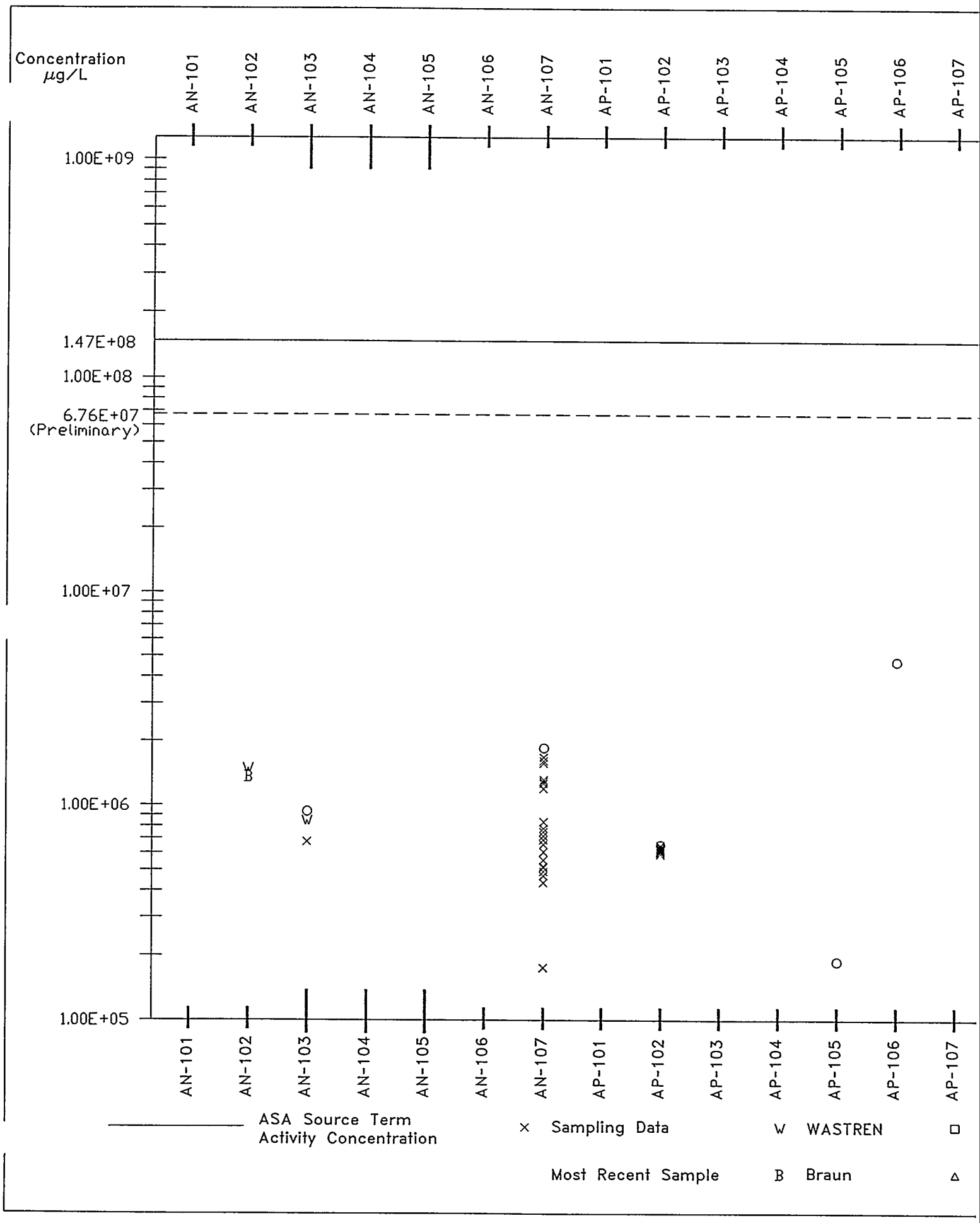
Extented tank lines represent Flamable Gas Watch List Tanks.

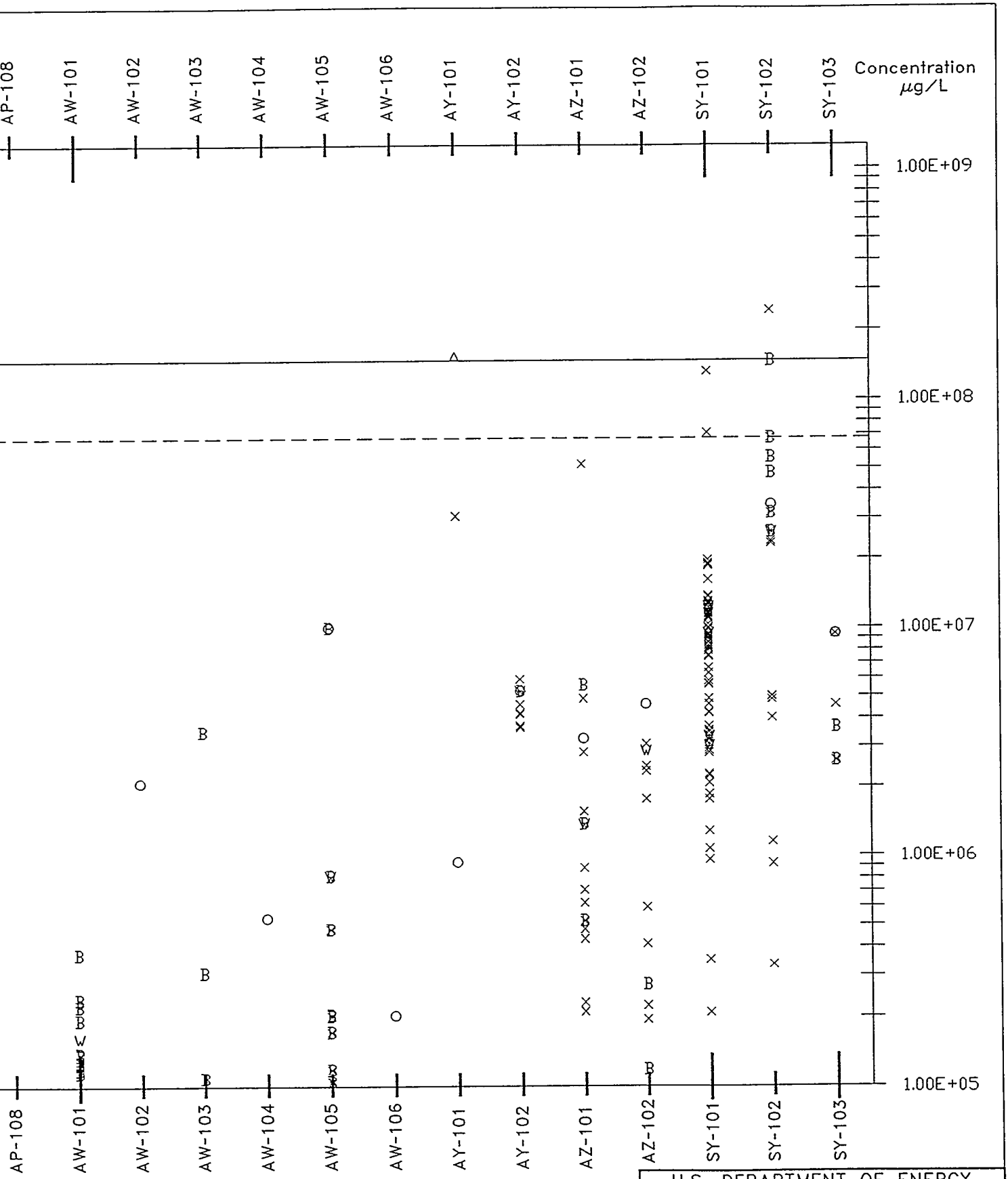
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Cr+3 - Chromium+3 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC65 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+09
1.47E+08
1.00E+08
6.76E+07
(Preliminary)
1.00E+07
1.00E+06
1.00E+05
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



TCE Inventory

RAC

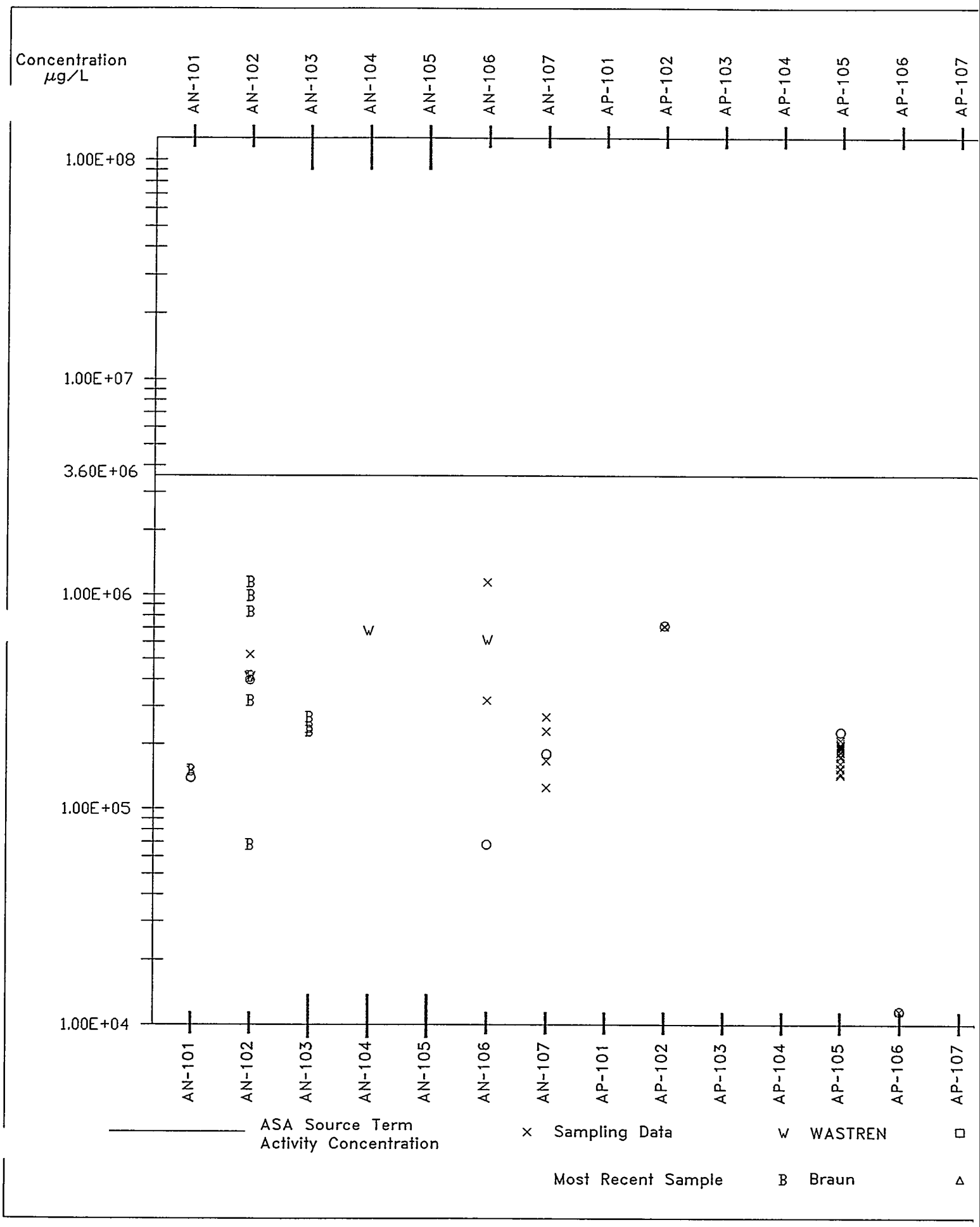
Extented tank lines represent Flamable Gas Watch List Tanks.

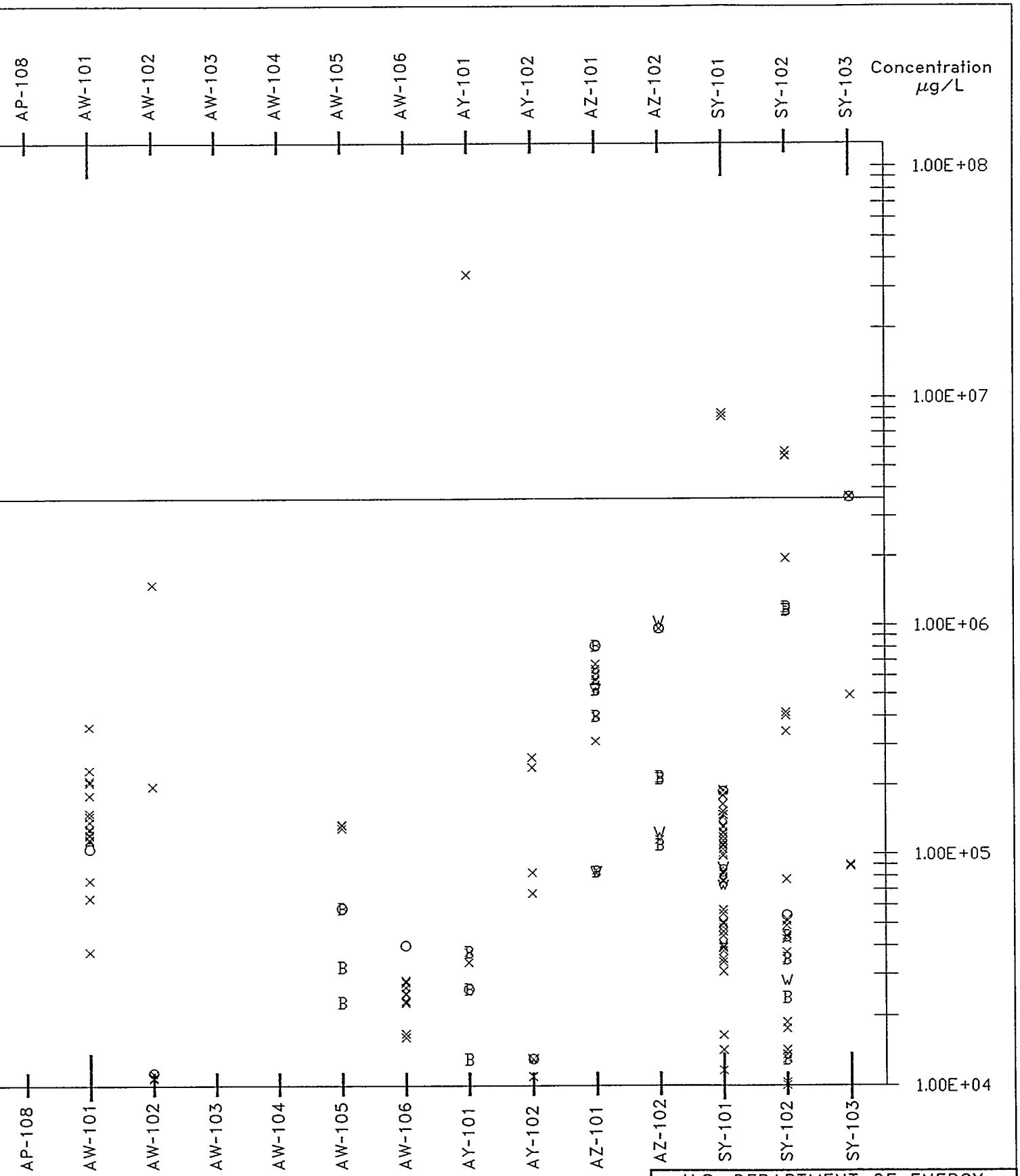
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Cr+3 - Chromium+3 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC66 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+08
1.00E+07
3.60E+06
1.00E+06
1.00E+05
1.00E+04
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



HTCE Inventory

TRAC

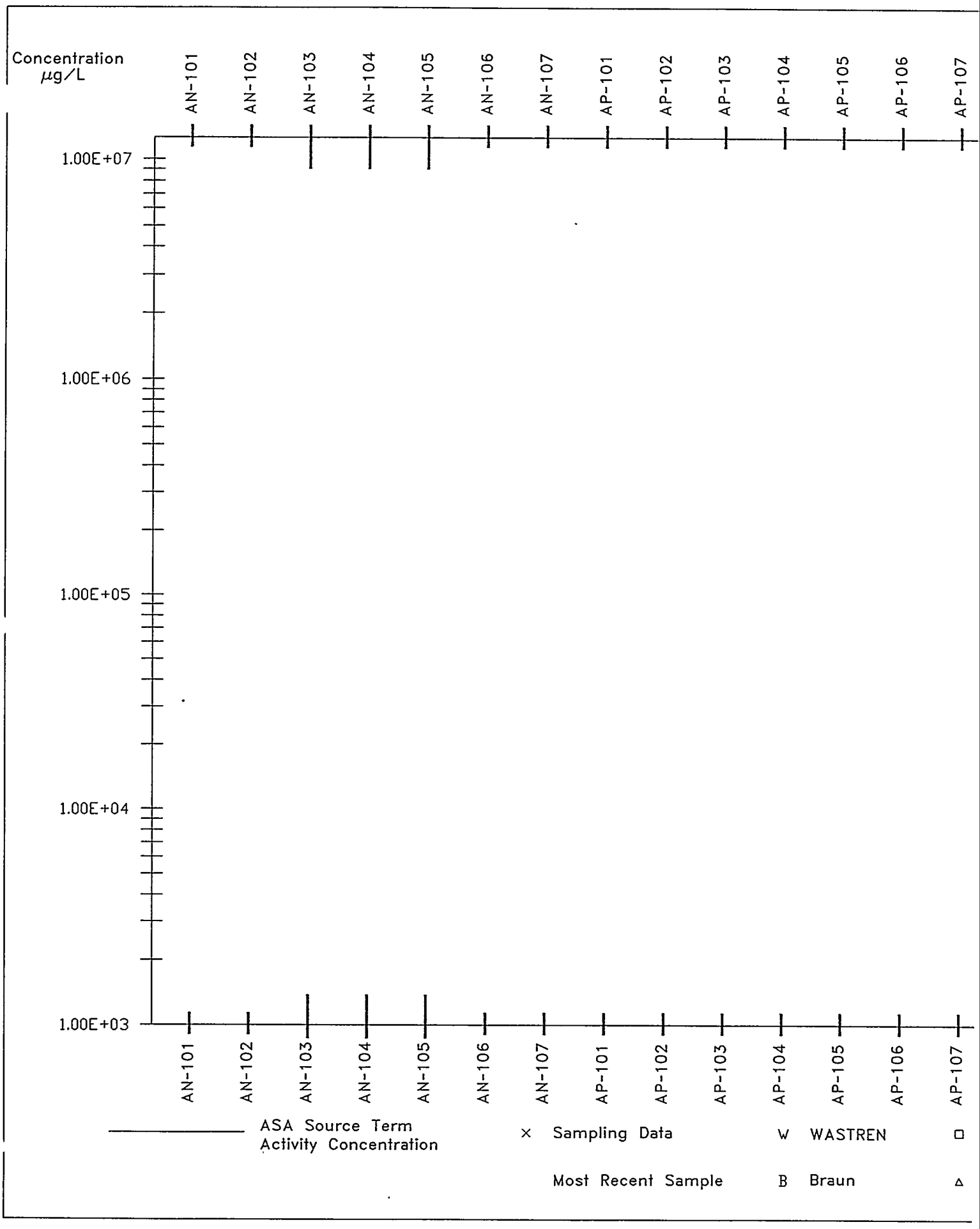
Extented tank lines represent Flamable Gas Watch List Tanks.

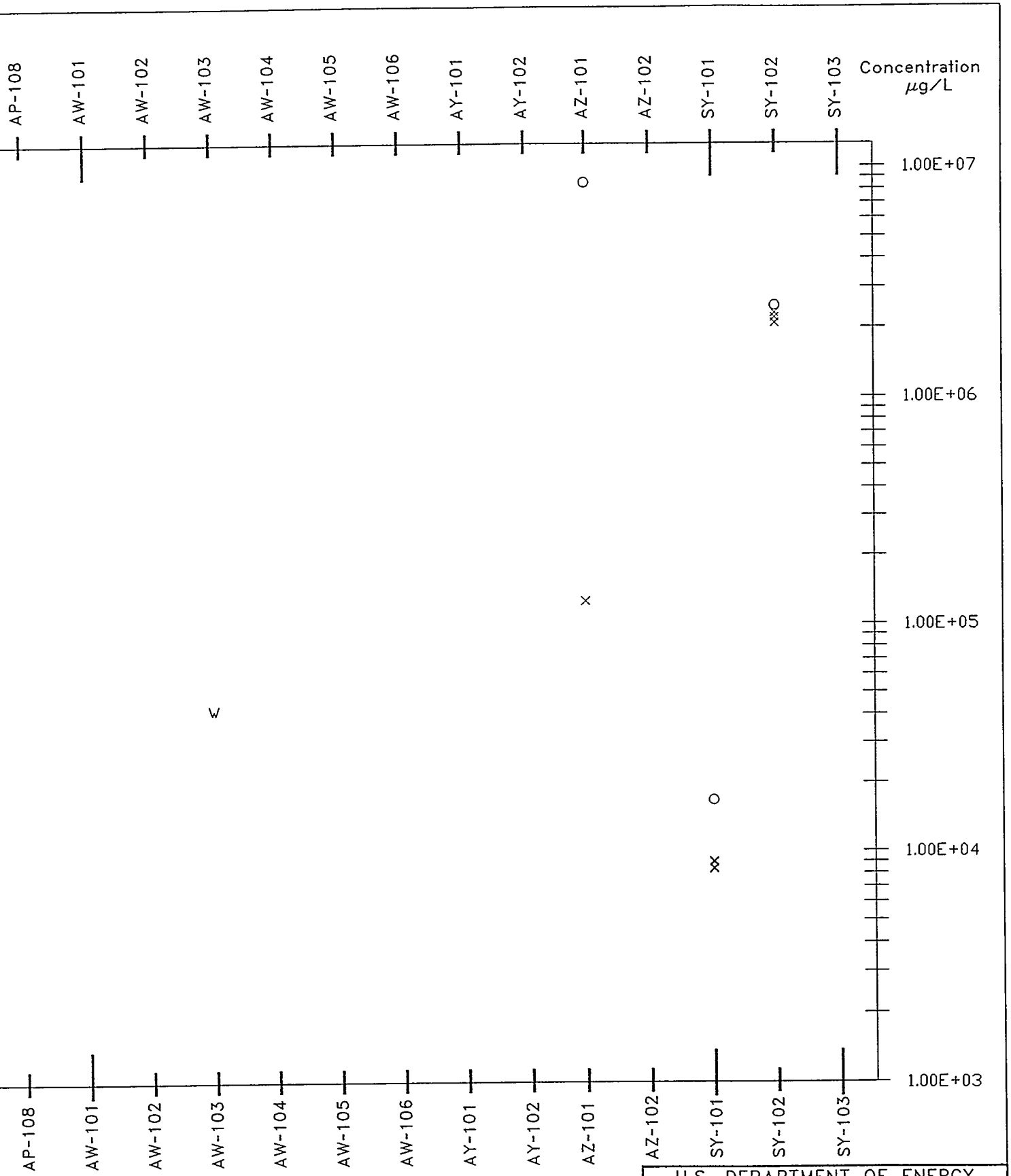
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Cr+6 - Chromium+6 Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC67 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
1.00E+07
1.00E+06
1.00E+05
1.00E+04
1.00E+03
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
Most Recent Sample
B Braun



HTCE Inventory

TRAC

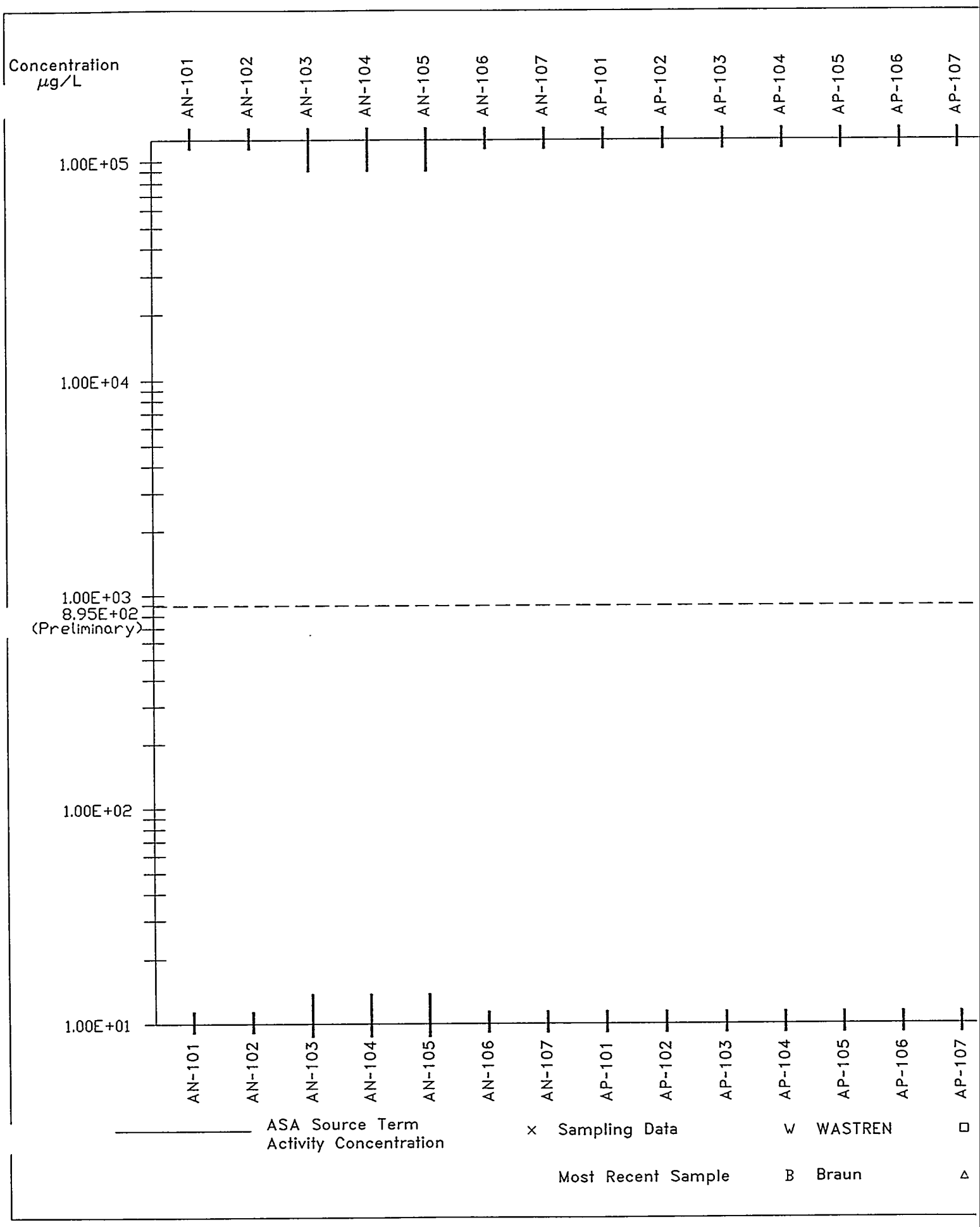
Extented tank lines represent Flamable Gas Watch List Tanks.

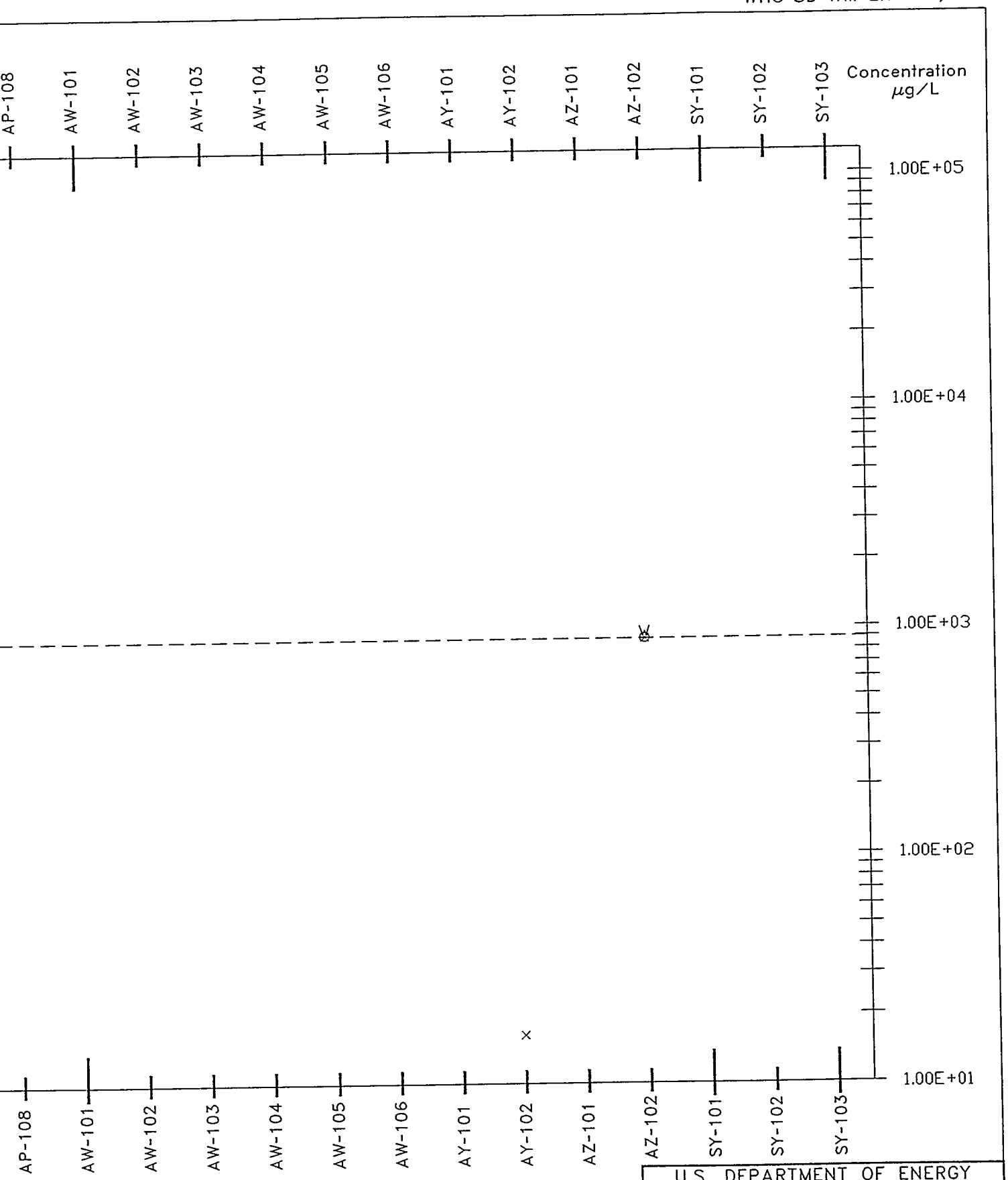
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Cr+6 - Chromium+6 Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC68 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+05
1.00E+04
1.00E+03
8.95E+02
(Preliminary)
1.00E+02
1.00E+01
ASA Source Term
Activity Concentration
x Sampling Data
W WASTREN
Most Recent Sample
B Braun



HTCE Inventory

TRAC

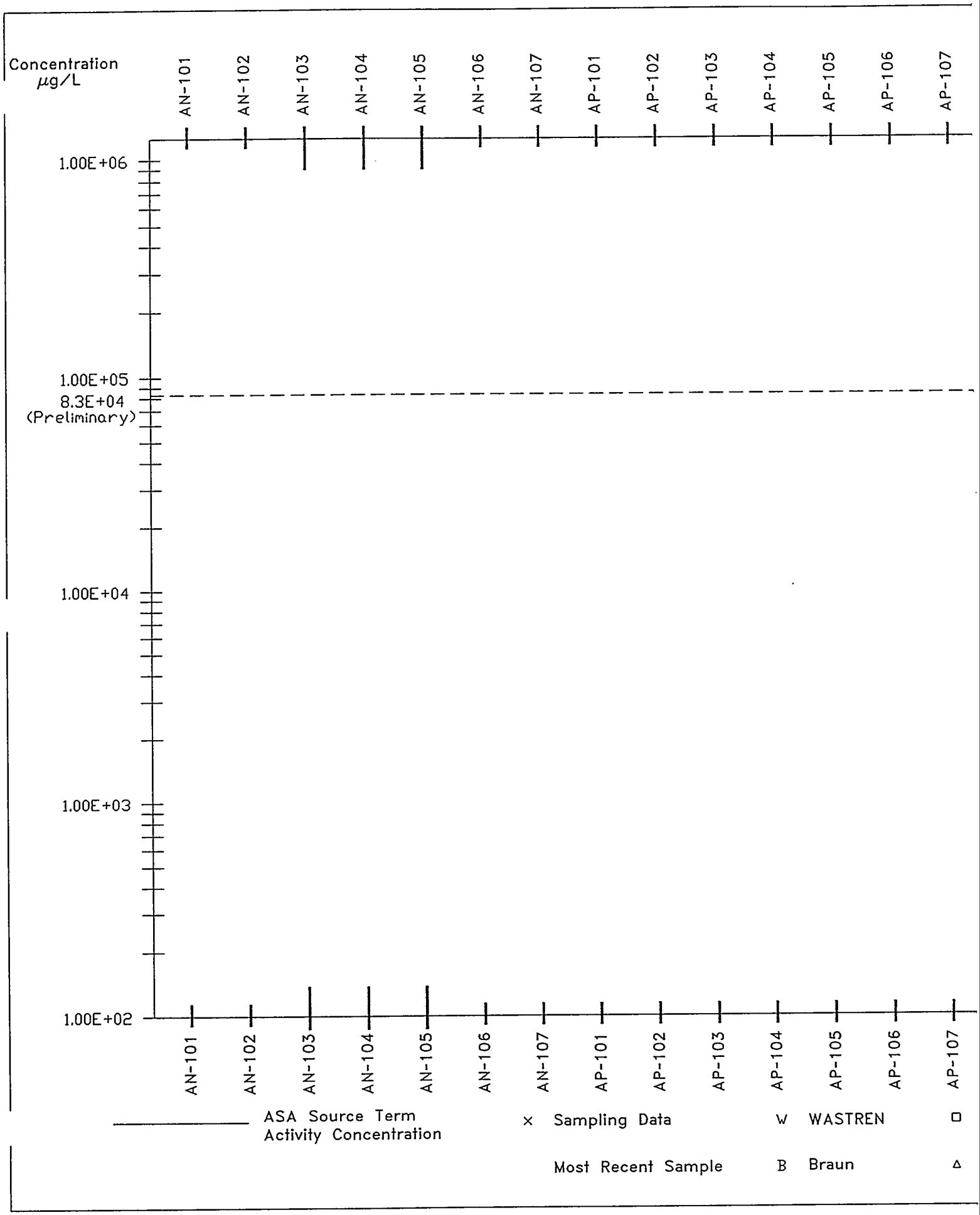
Extented tank lines represent Flamable Gas Watch List Tanks.

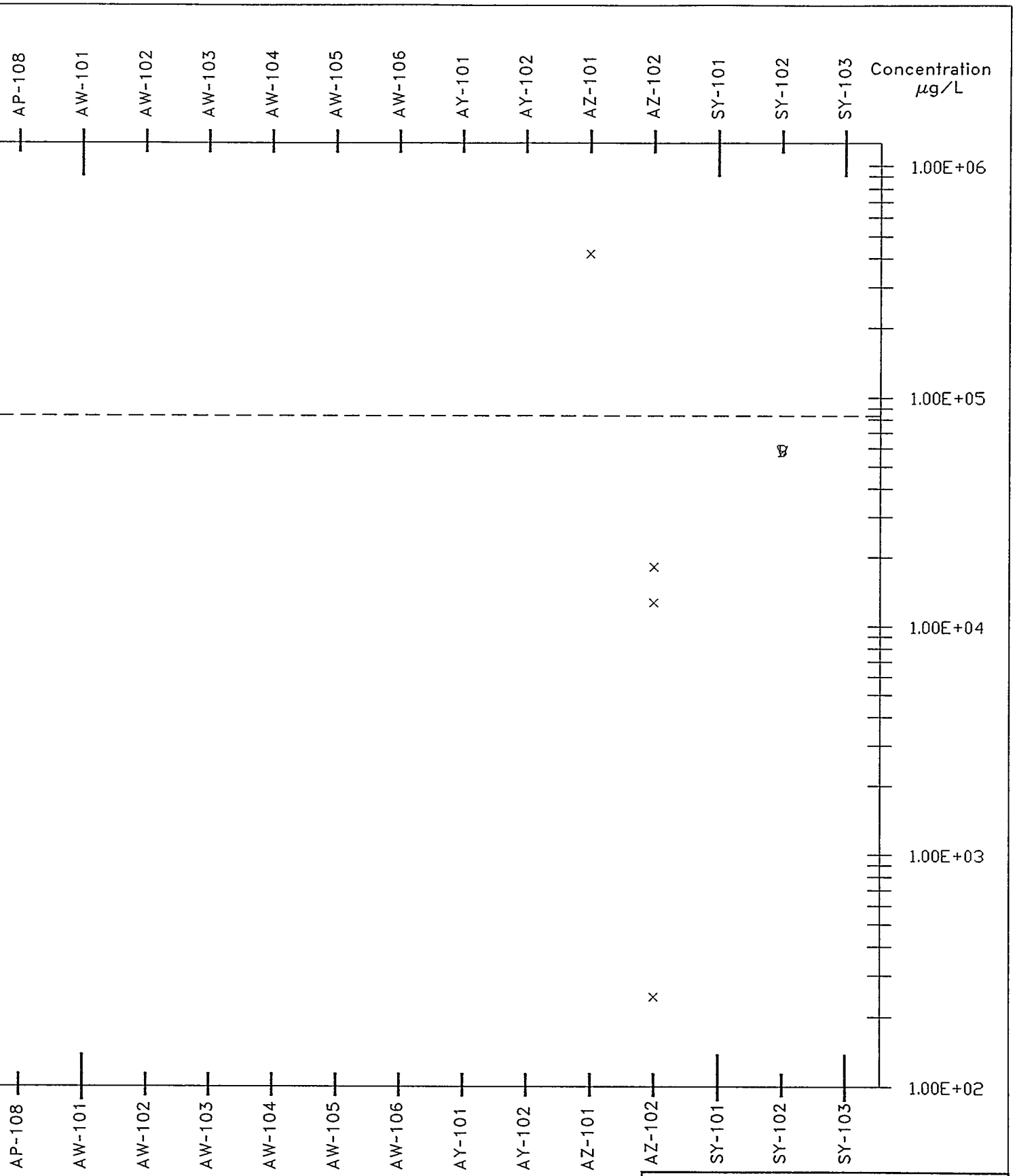
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Dy - Dysprosium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC69 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+06
1.00E+05
8.3E+04
(Preliminary)
1.00E+04
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
x Sampling Data
W WASTREN
Most Recent Sample
B Braun



TCE Inventory

RAC

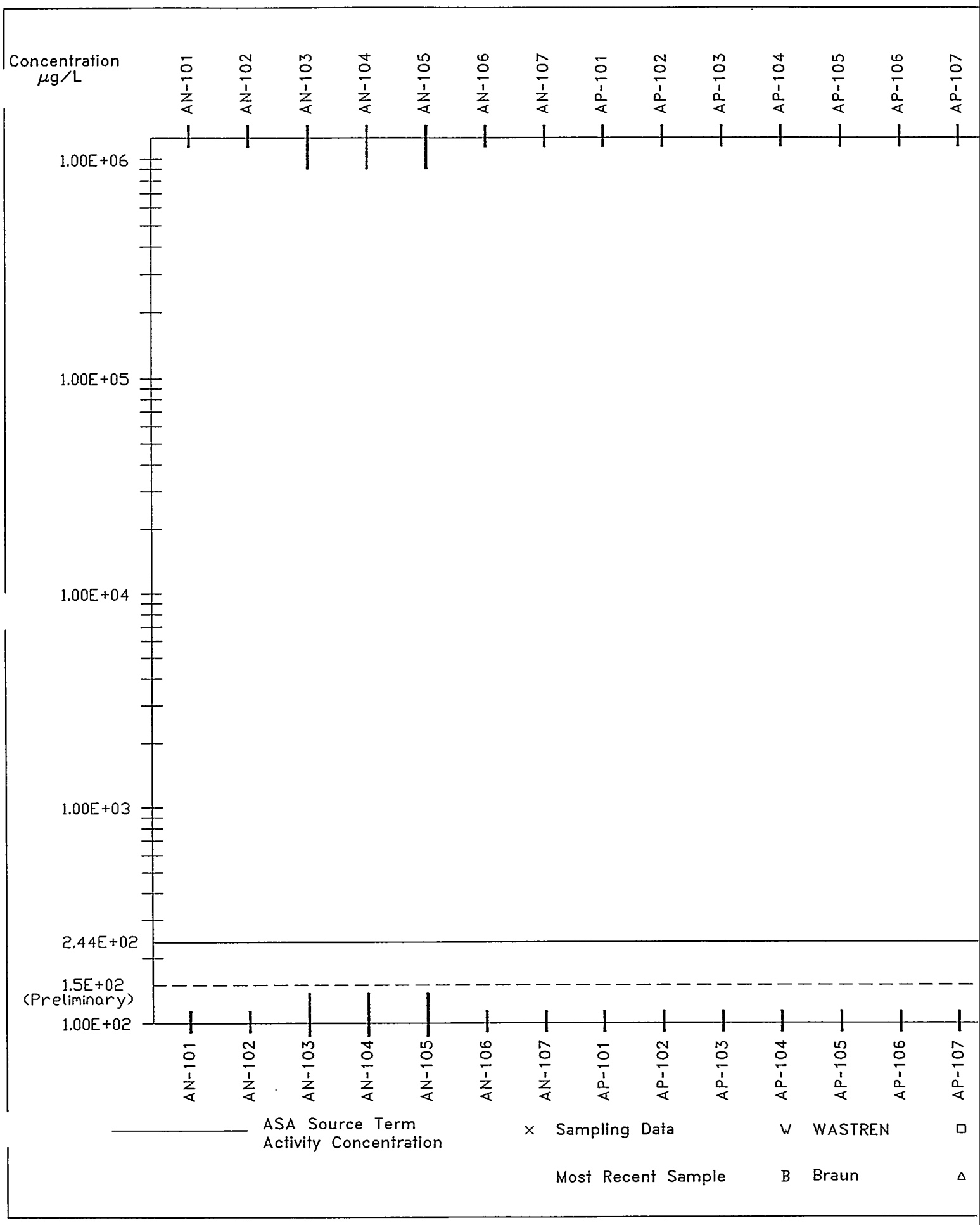
Extented tank lines represent Flamable Gas Watch List Tanks.

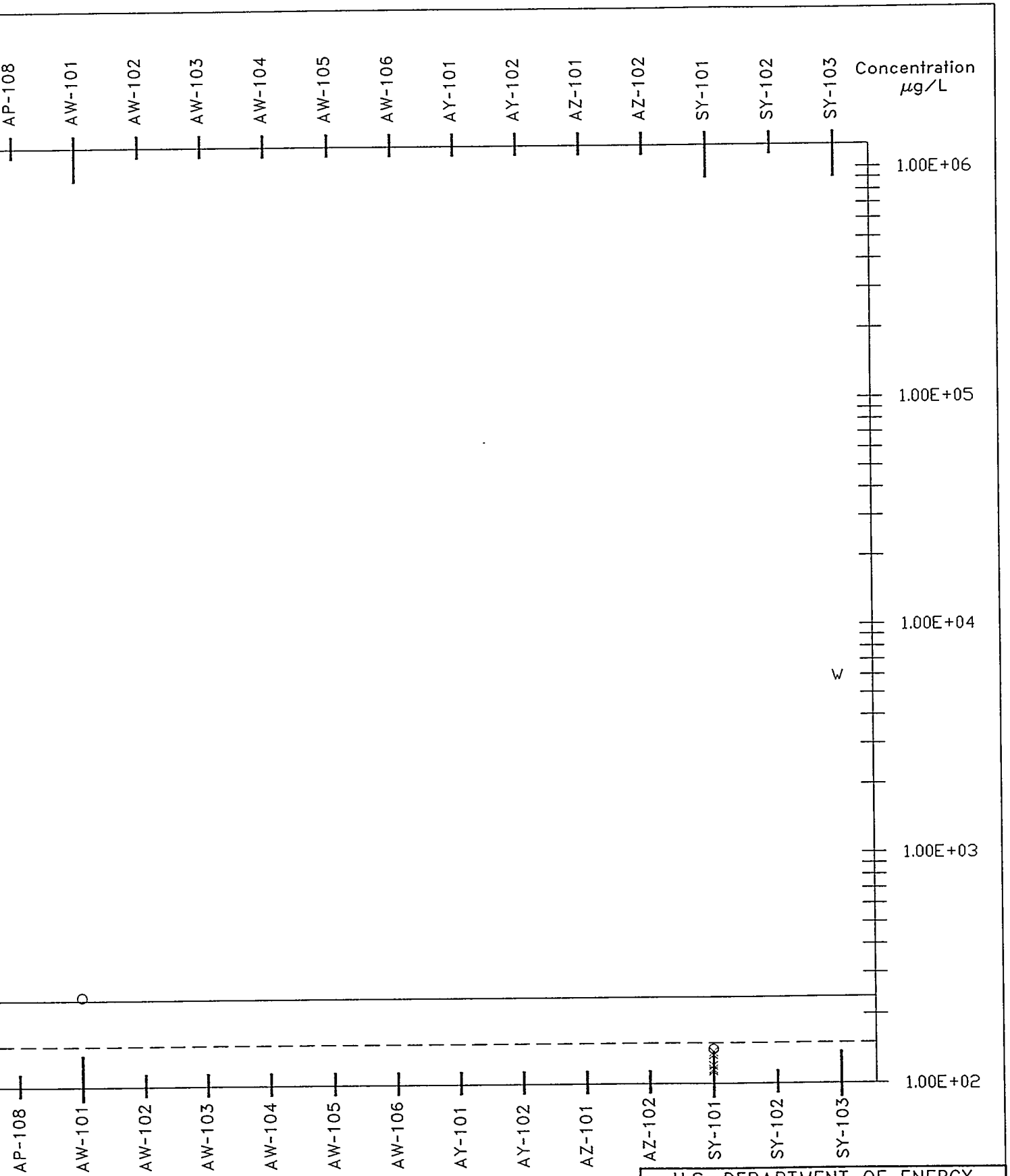
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Dy - Dysprosium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC70 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+06
1.00E+05
1.00E+04
1.00E+03
2.44E+02
1.5E+02
(Preliminary)
1.00E+02
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□
Most Recent Sample
B Braun
△



TCE Inventory

RAC

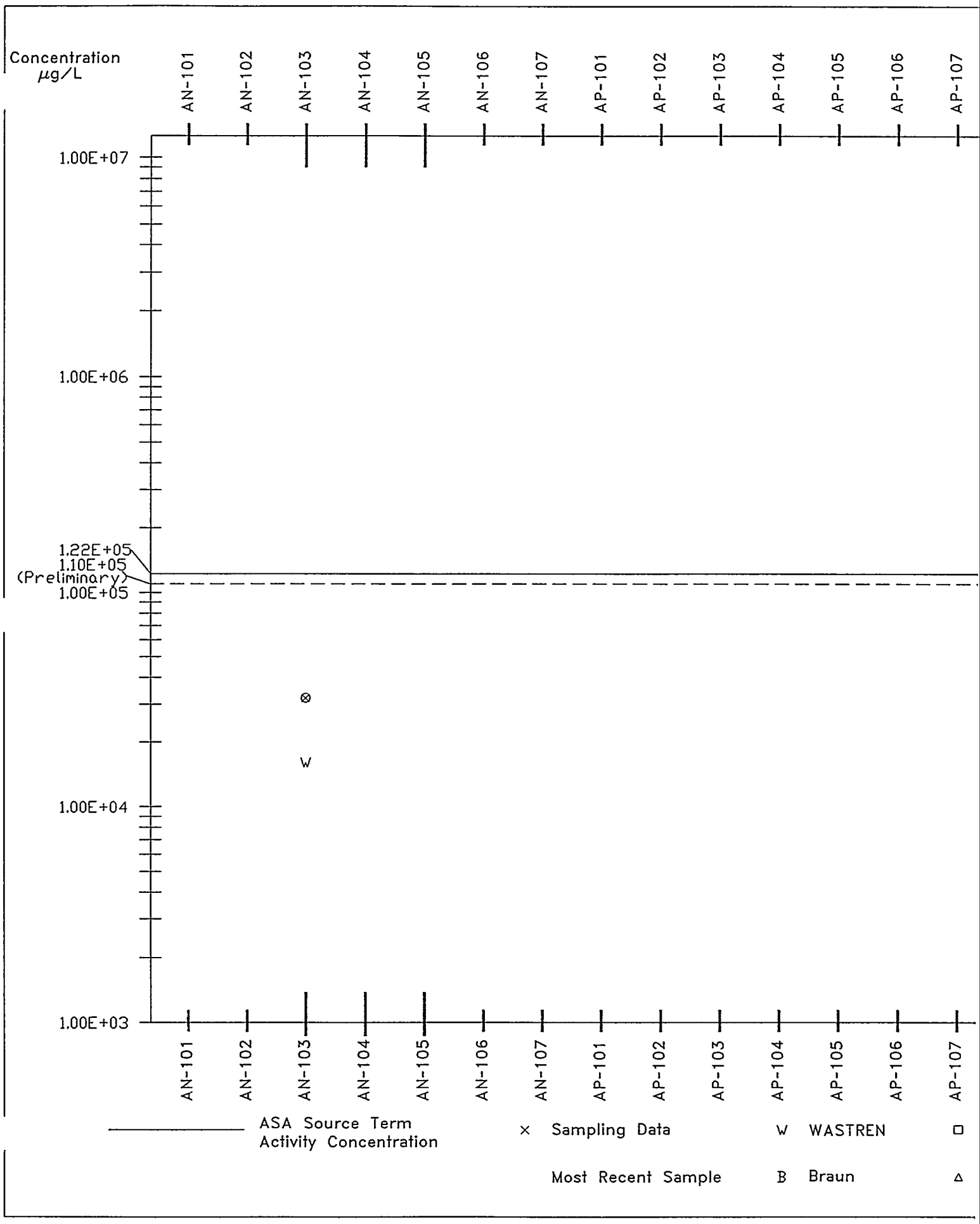
Extented tank lines represent Flamable Gas Watch List Tanks.

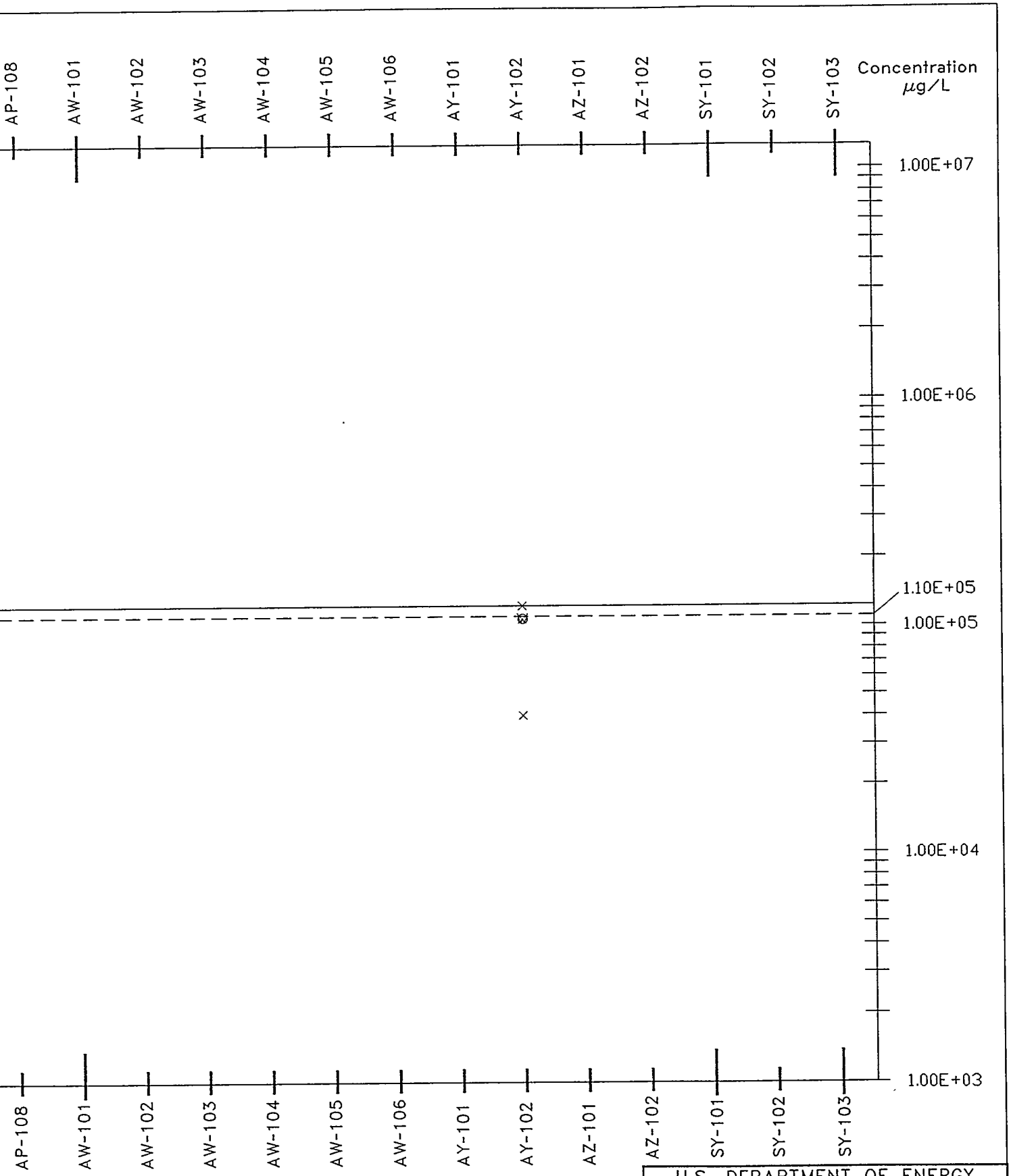
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Hg - Mercury Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC71 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+07
1.00E+06
1.22E+05
1.10E+05
(Preliminary)
1.00E+05
W
1.00E+04
1.00E+03
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



ITCE Inventory

TRAC

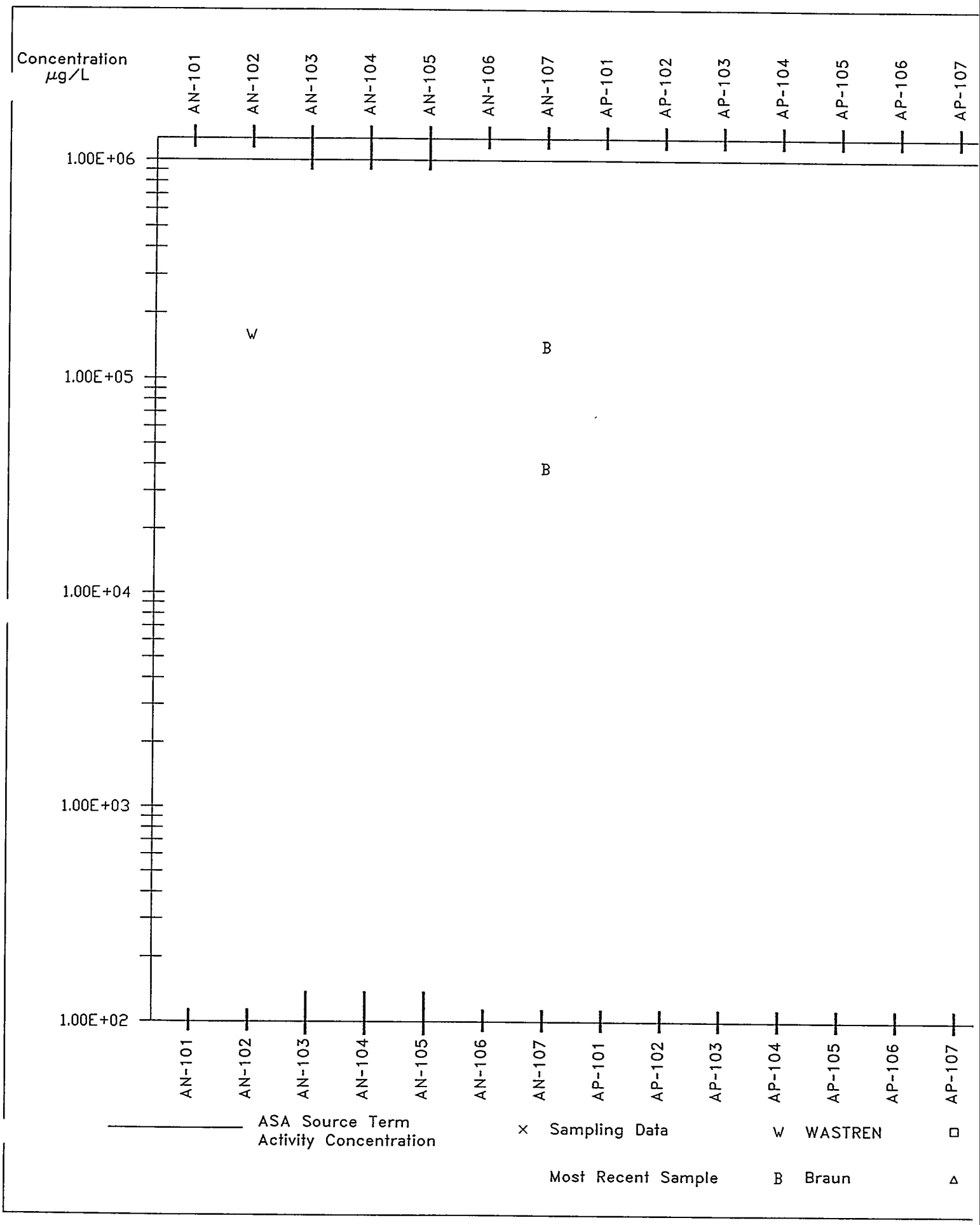
Extented tank lines represent Flamable Gas Watch List Tanks.

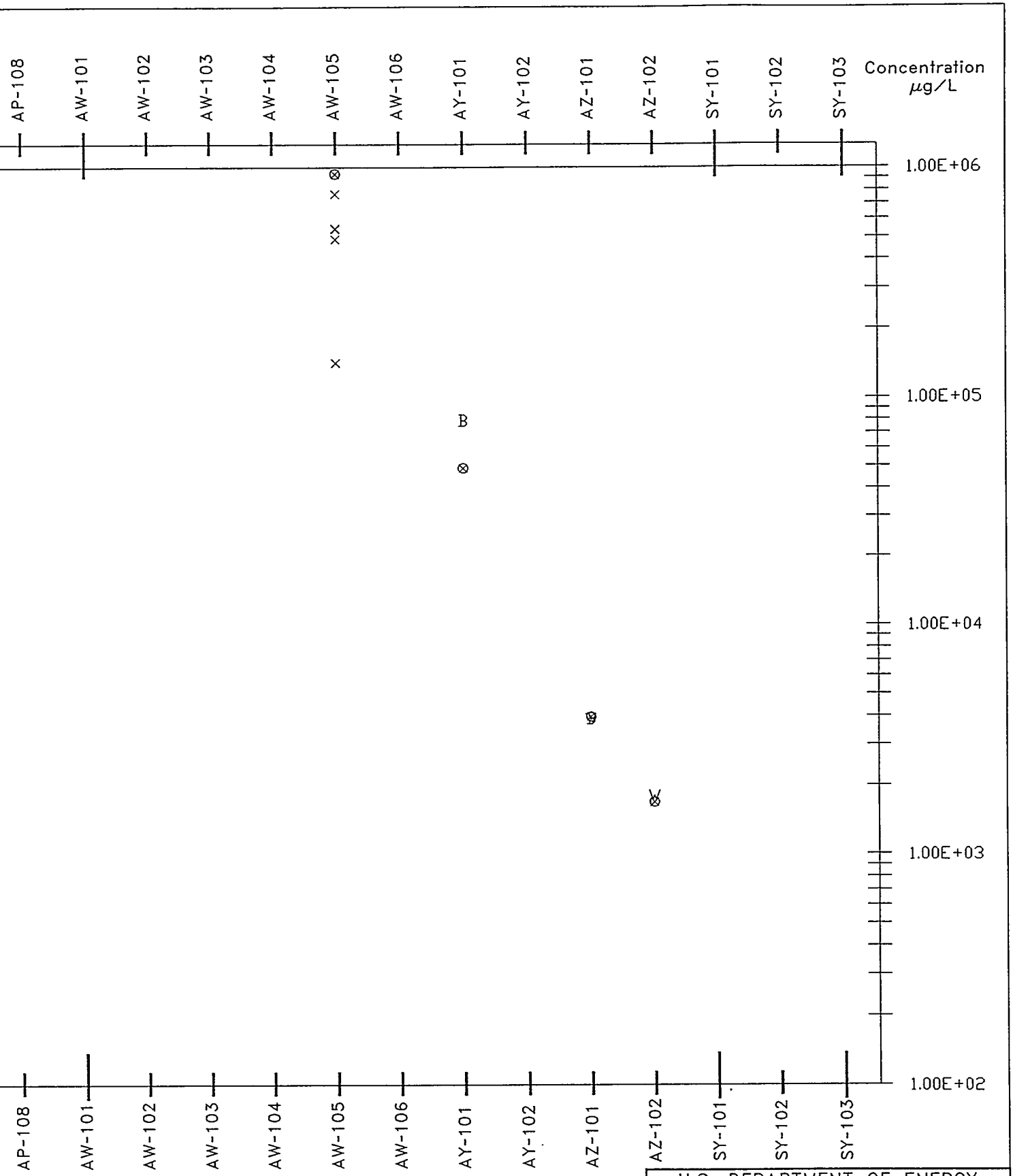
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Hg - Mercury Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC72 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+06
1.00E+05
1.00E+04
1.00E+03
1.00E+02
W
B
B
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□
Most Recent Sample
B Braun
△



HTCE Inventory

TRAC

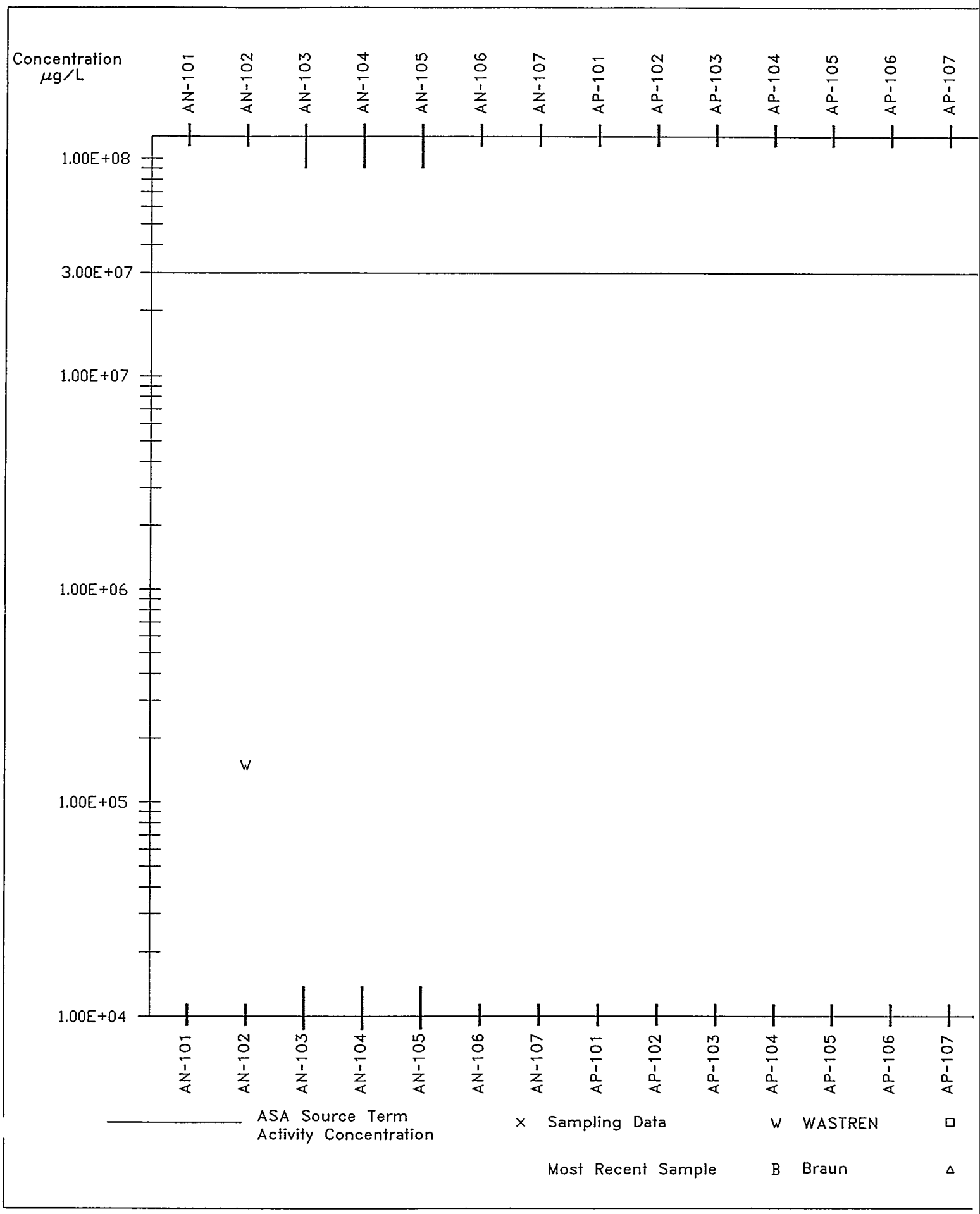
Extented tank lines represent Flamable Gas Watch List Tanks.

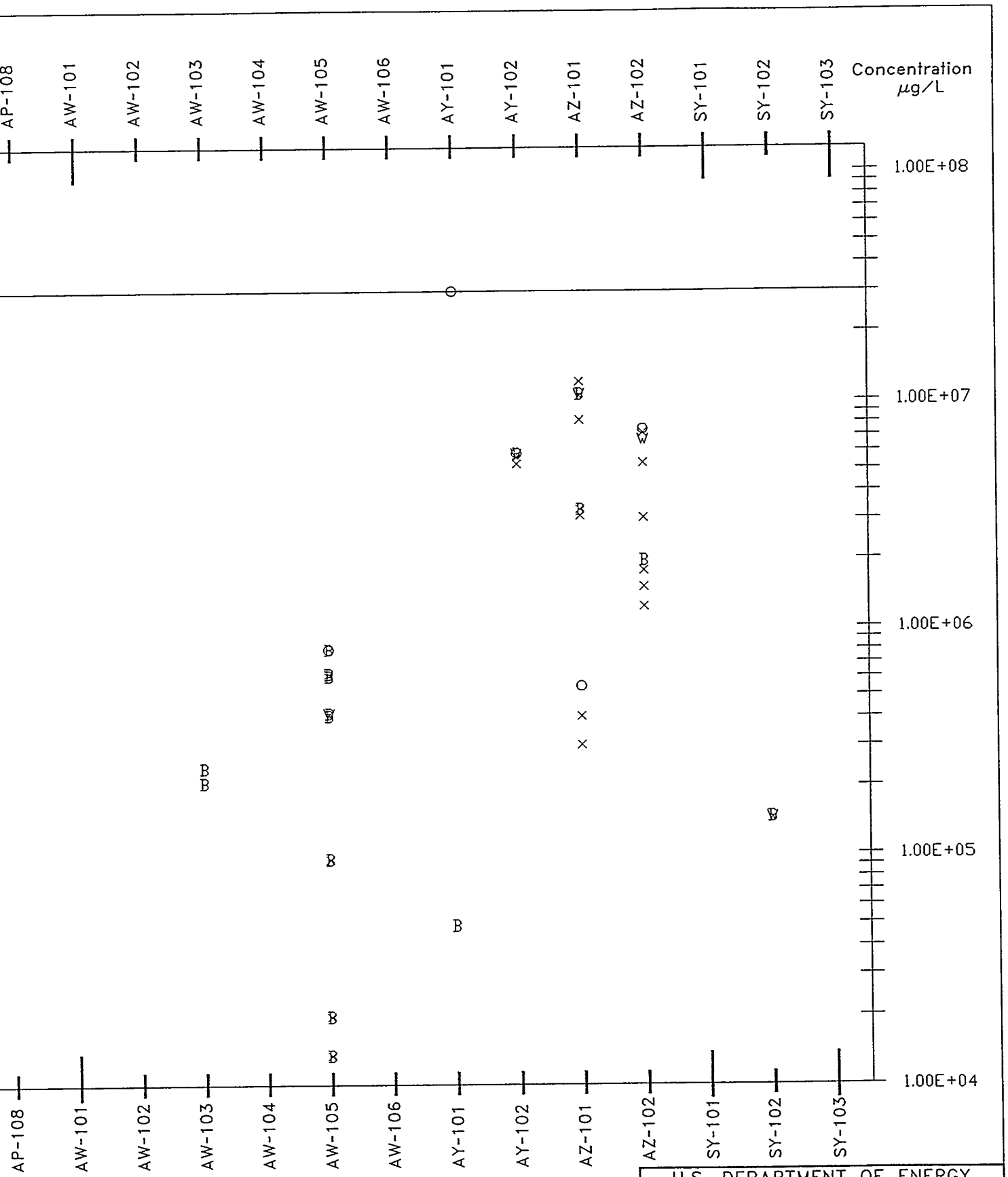
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
La - Lanthanum Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC73 | JOB NO. E01595 | Date 4/95


Concentration
μg/L
1.00E+08
3.00E+07
1.00E+07
1.00E+06
1.00E+05
1.00E+04
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
W
ASA Source Term
Activity Concentration
× Sampling Data
Most Recent Sample
W WASTREN
B Braun
□
△



TCE Inventory

RAC

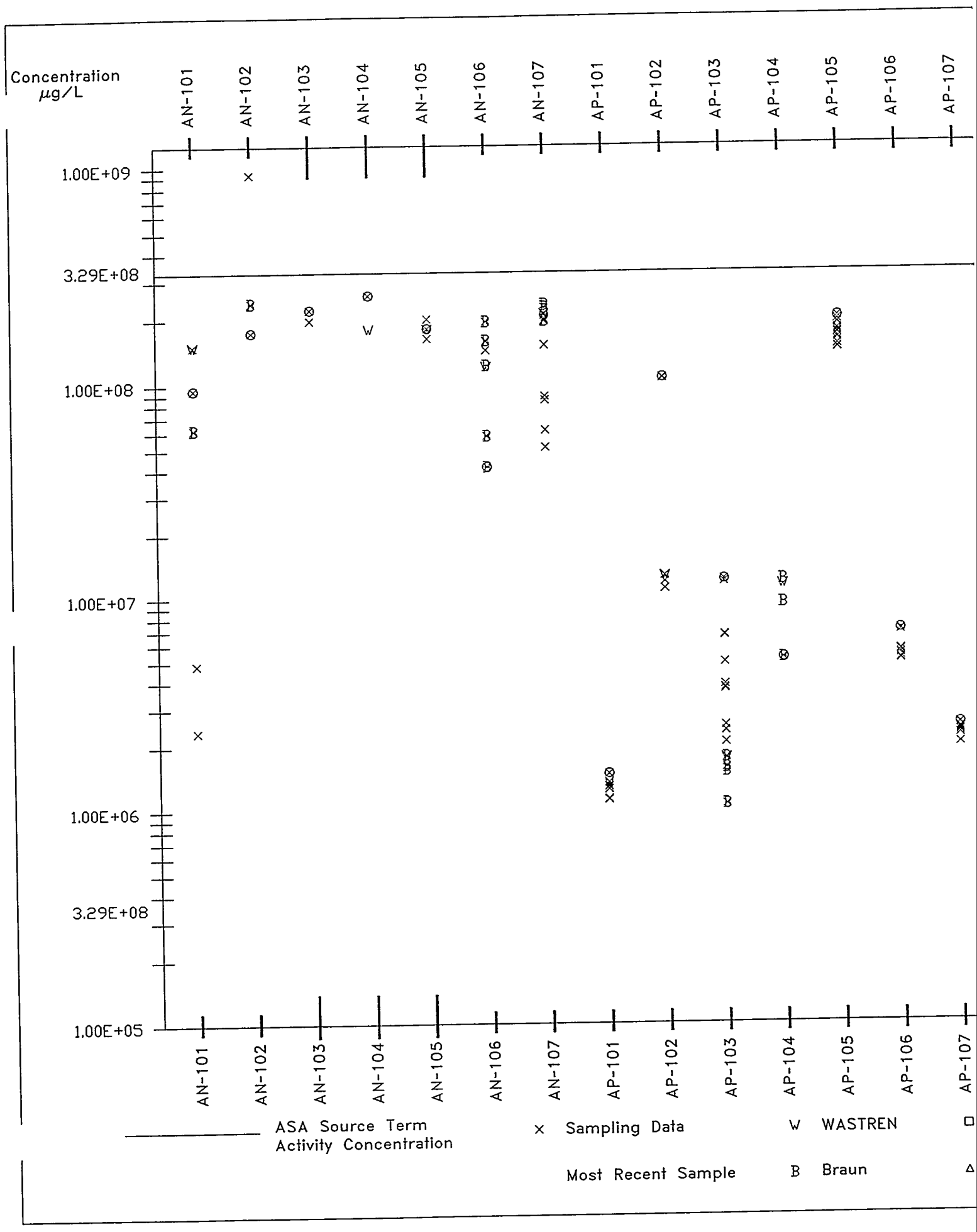
Extented tank lines represent Flamable Gas Watch List Tanks.

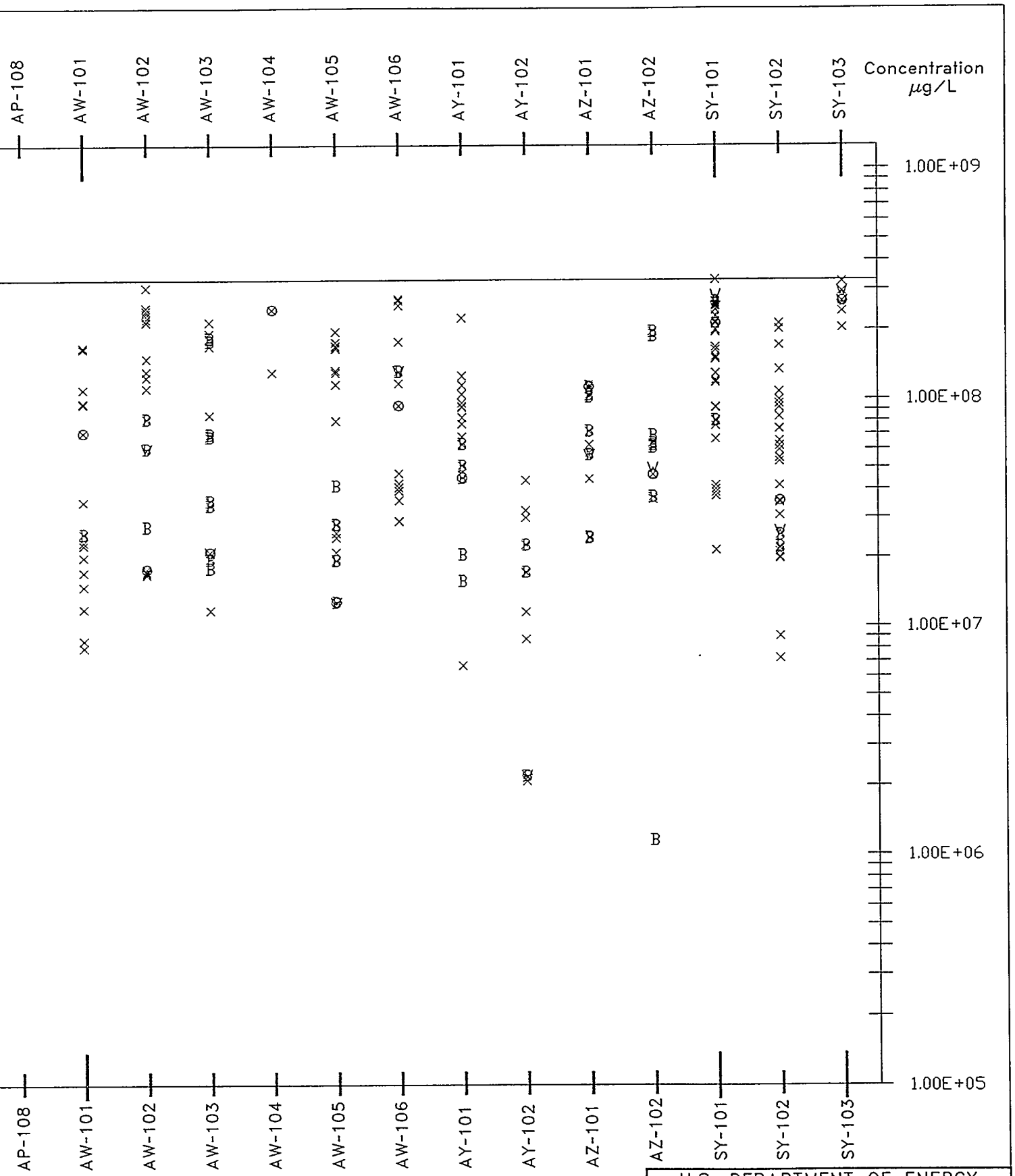
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
La - Lanthanum Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC74 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+09
3.29E+08
1.00E+08
1.00E+07
1.00E+06
3.29E+08
1.00E+05
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

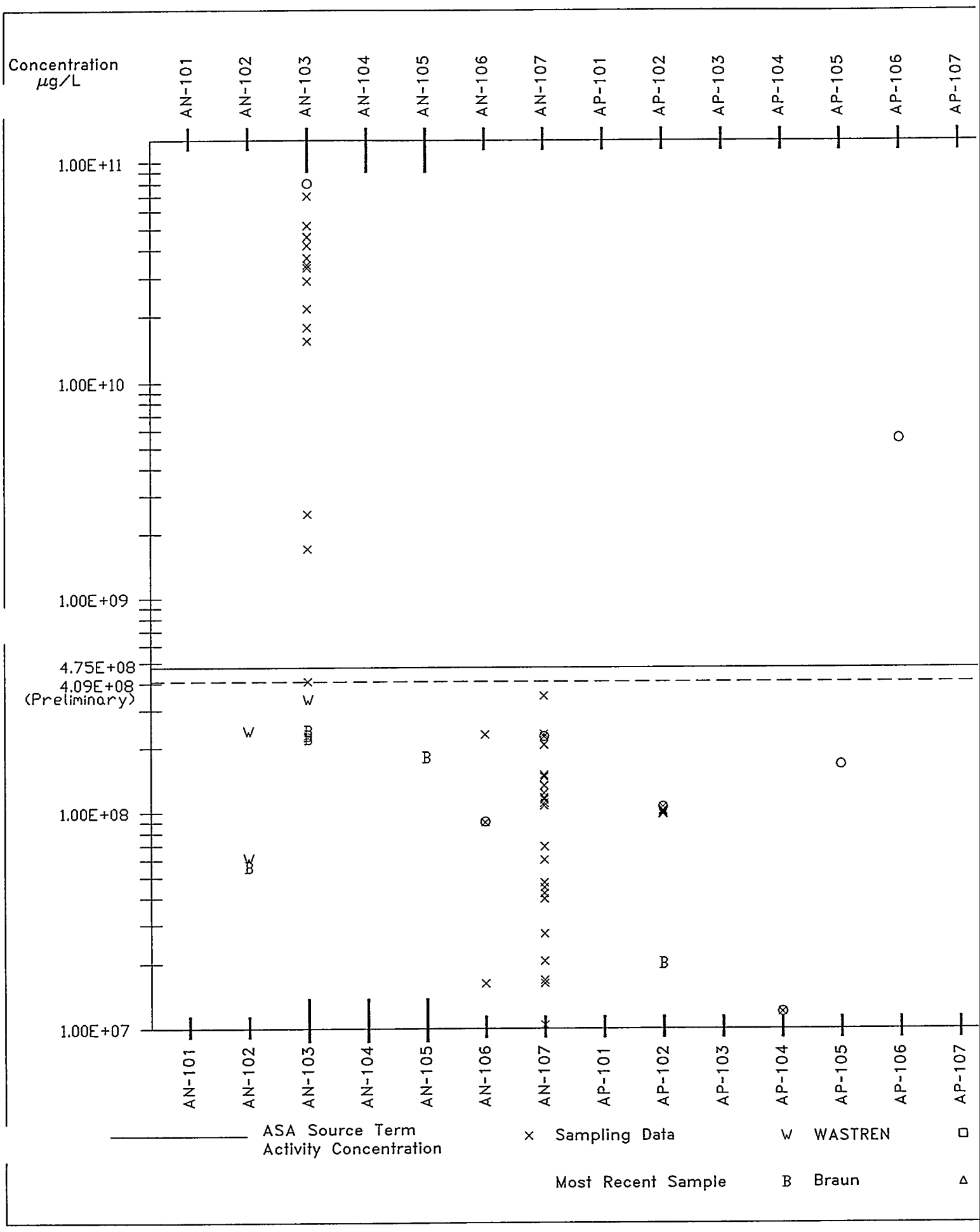
Extented tank lines represent Flamable Gas Watch List Tanks.

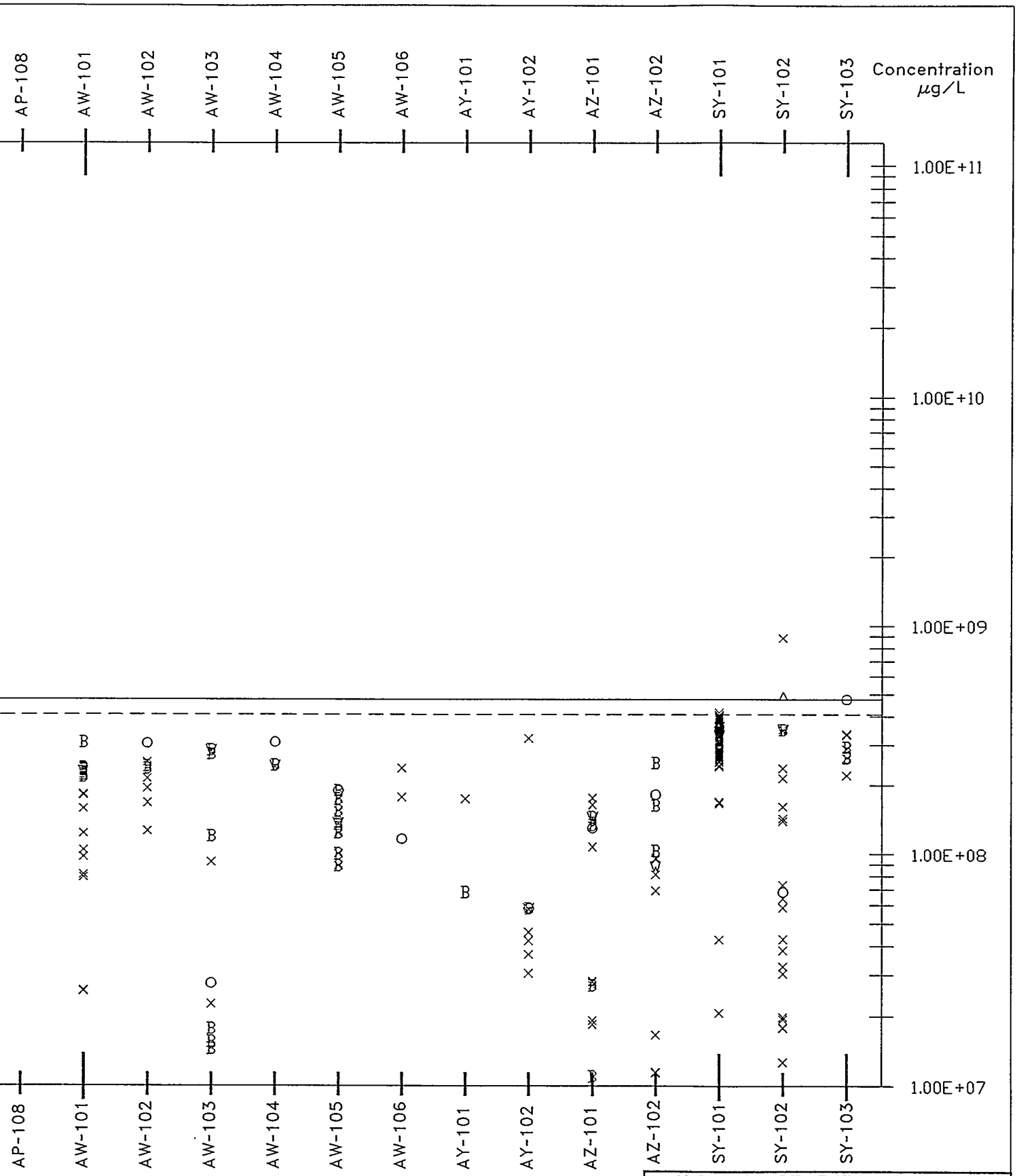
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Na - Sodium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC75 | JOB NO E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+11
1.00E+10
1.00E+09
4.75E+08
4.09E+08
(Preliminary)
1.00E+08
1.00E+07
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



TCE Inventory

RAC

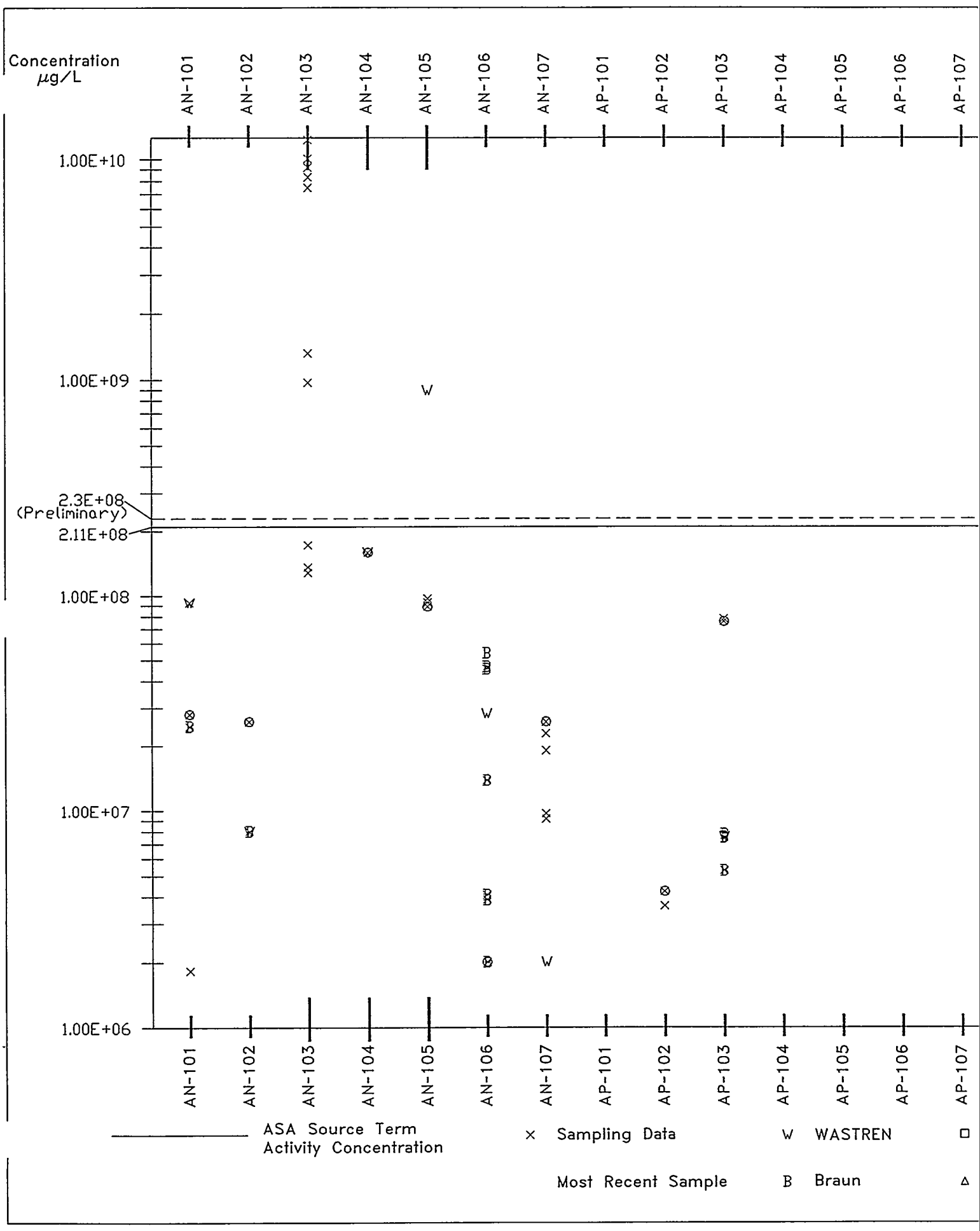
Extented tank lines represent Flamable Gas Watch List Tanks.

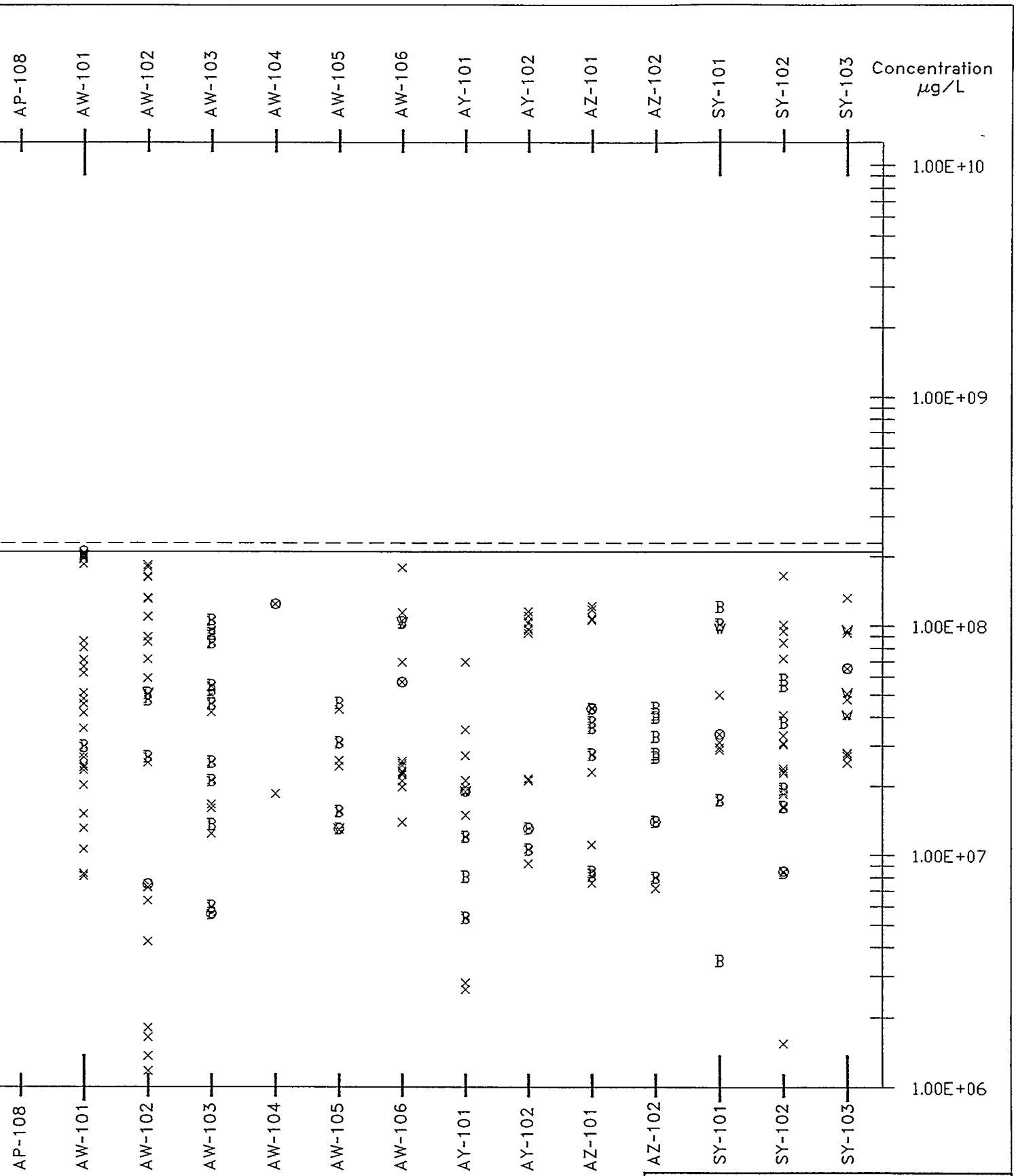
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Na - Sodium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC76 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+10
1.00E+09
2.3E+08
(Preliminary)
2.11E+08
1.00E+08
1.00E+07
1.00E+06
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



TCE Inventory

RAC

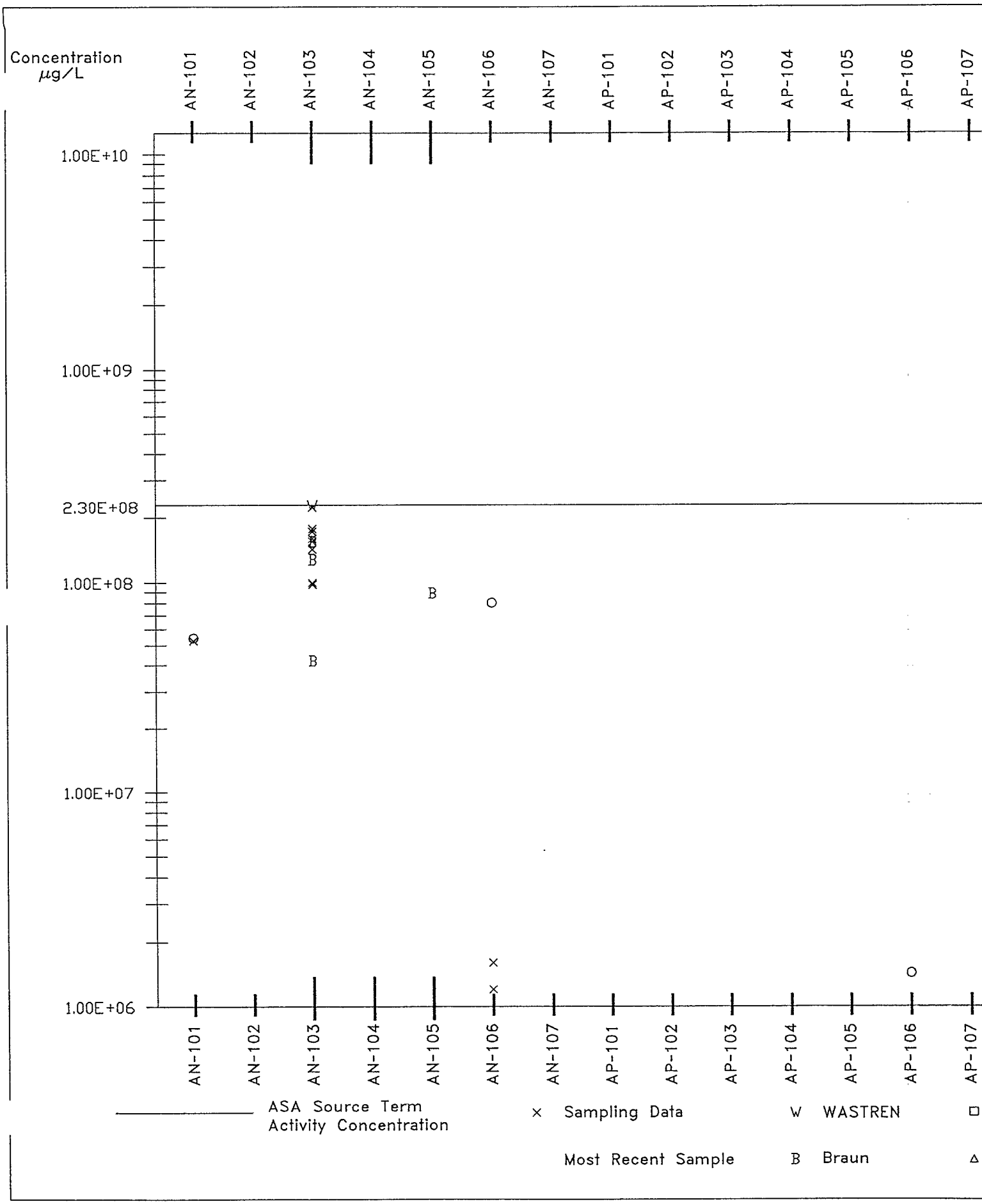
Extented tank lines represent Flamable Gas Watch List Tanks.

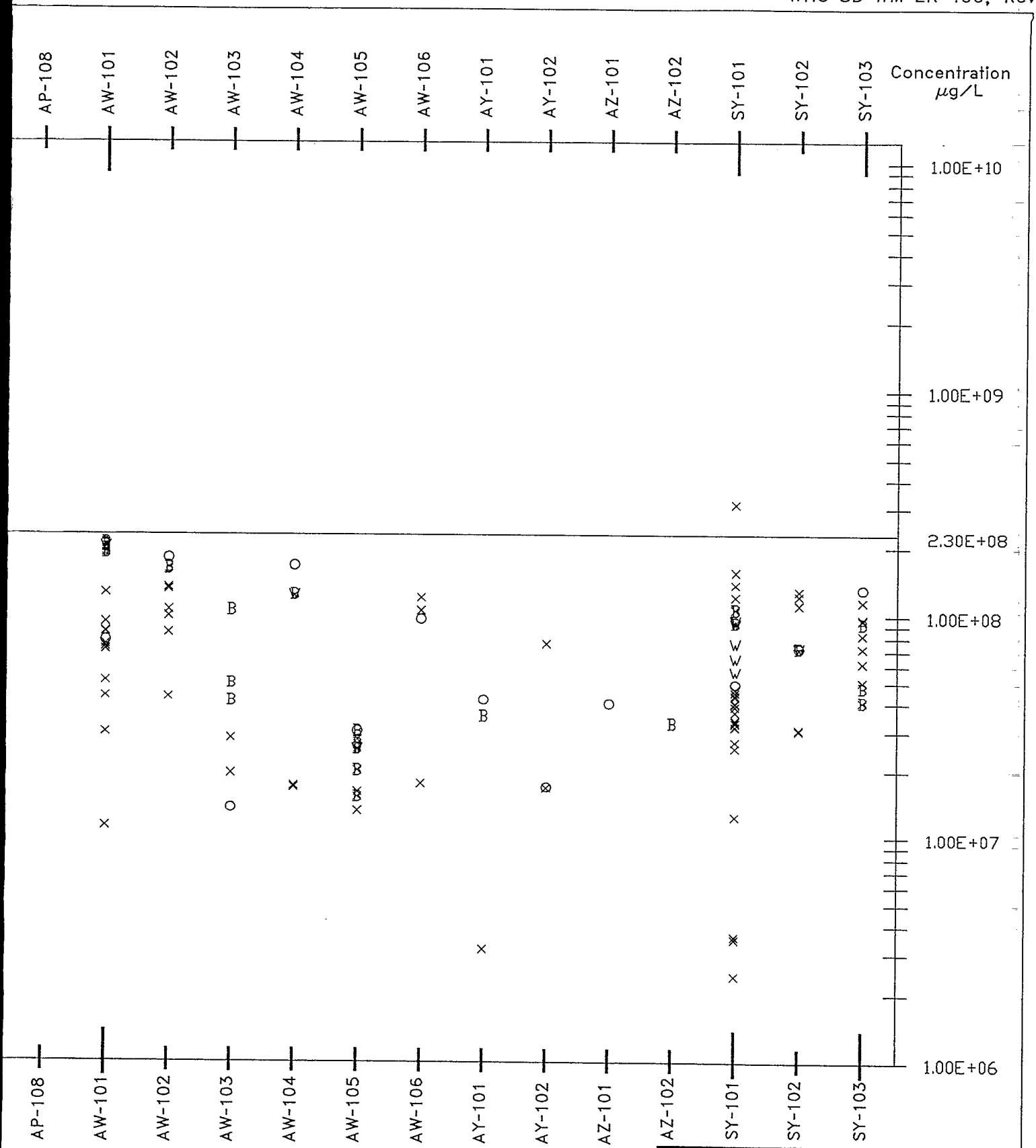
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
NaOH Sodium Hydroxide Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CC77 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+10
1.00E+09
2.30E+08
1.00E+08
1.00E+07
1.00E+06
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
WASTREN
Braun



HTCE Inventory

TRAC

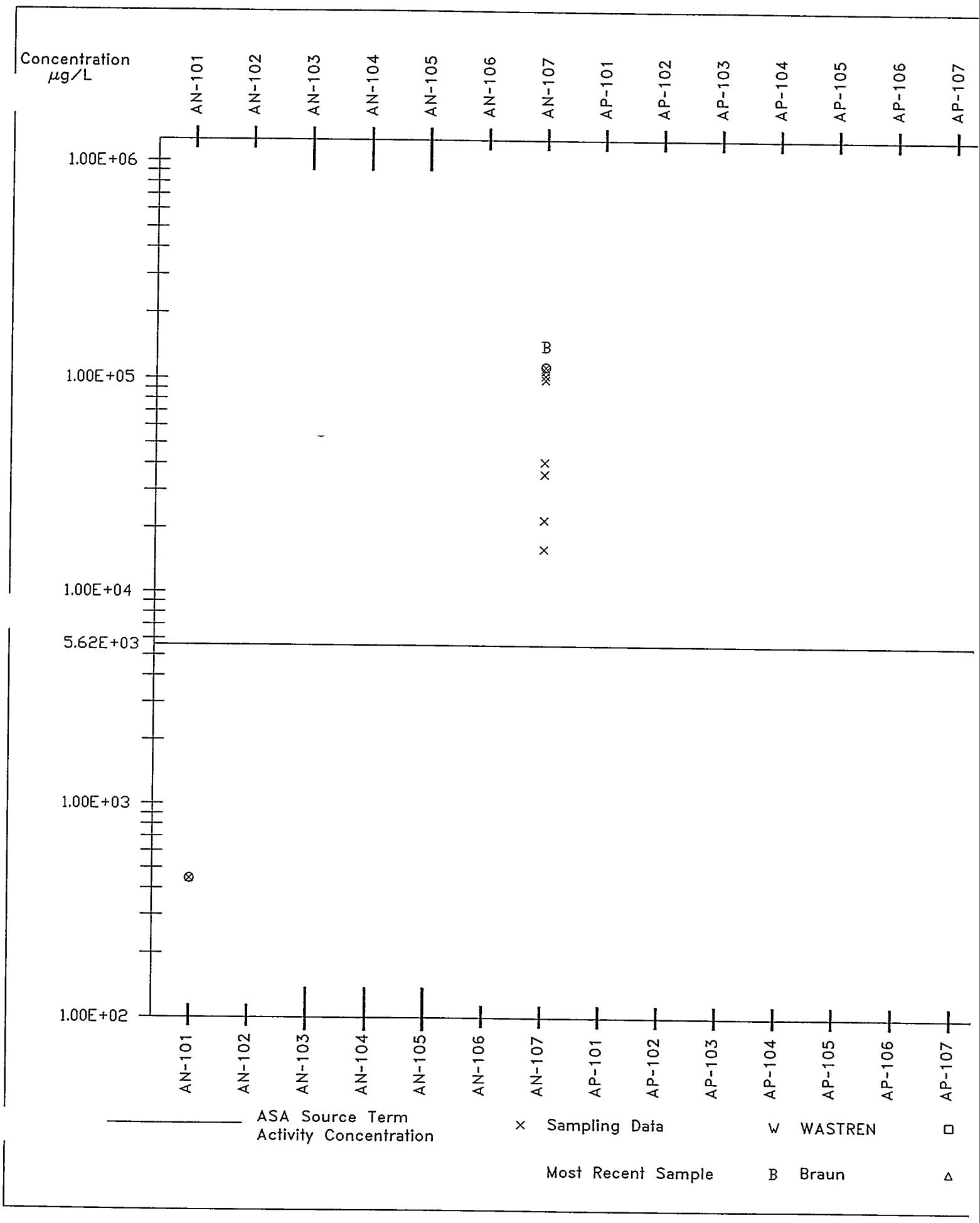
Extented tank lines represent Flamable Gas Watch List Tanks.

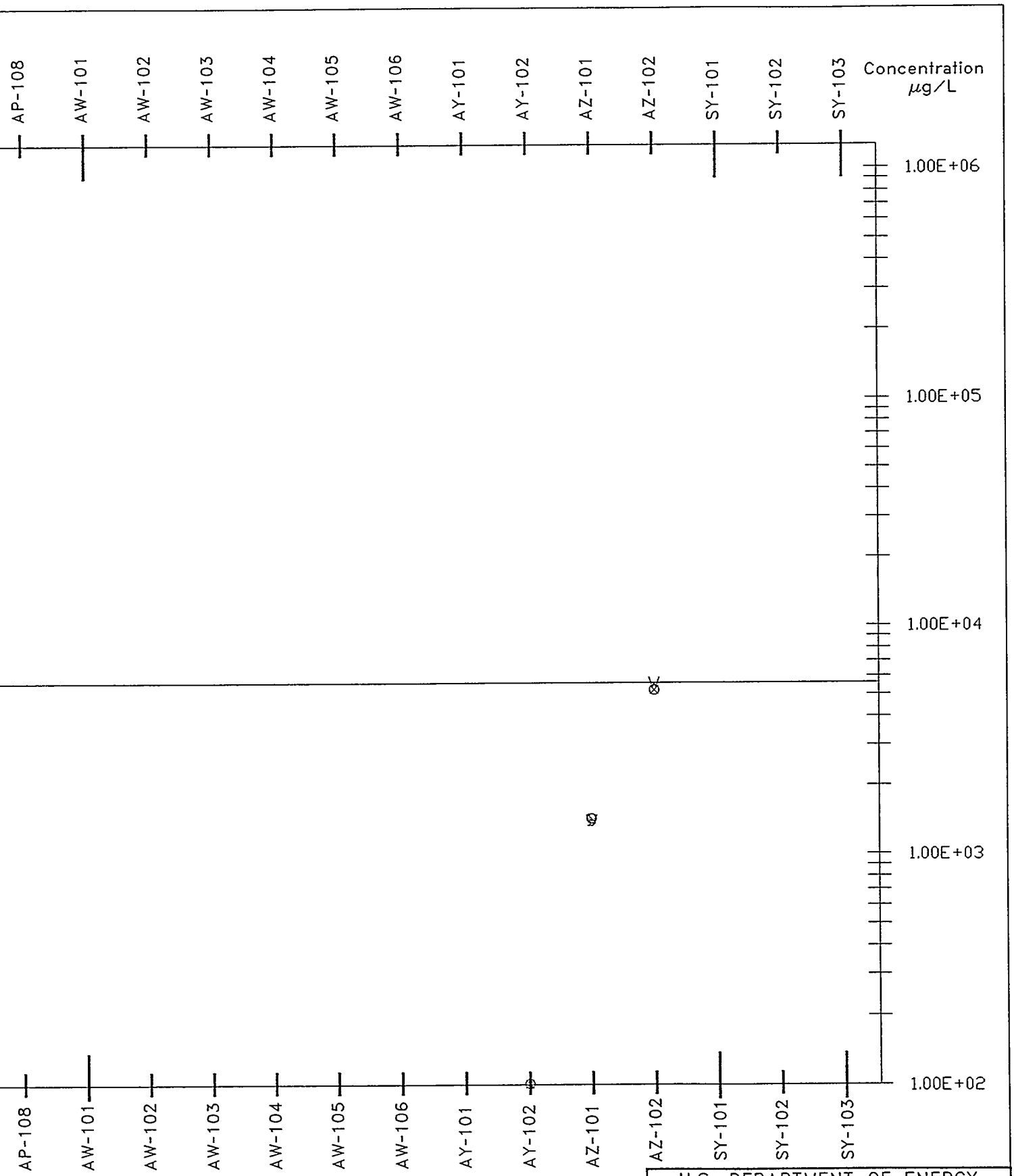
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
NaOH - Sodium Hydroxide Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No.	JOB NO.	Date
ES-VAL-CC78	E01595	4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+06
1.00E+05
1.00E+04
5.62E+03
1.00E+03
1.00E+02
B
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun



HTCE Inventory

TRAC

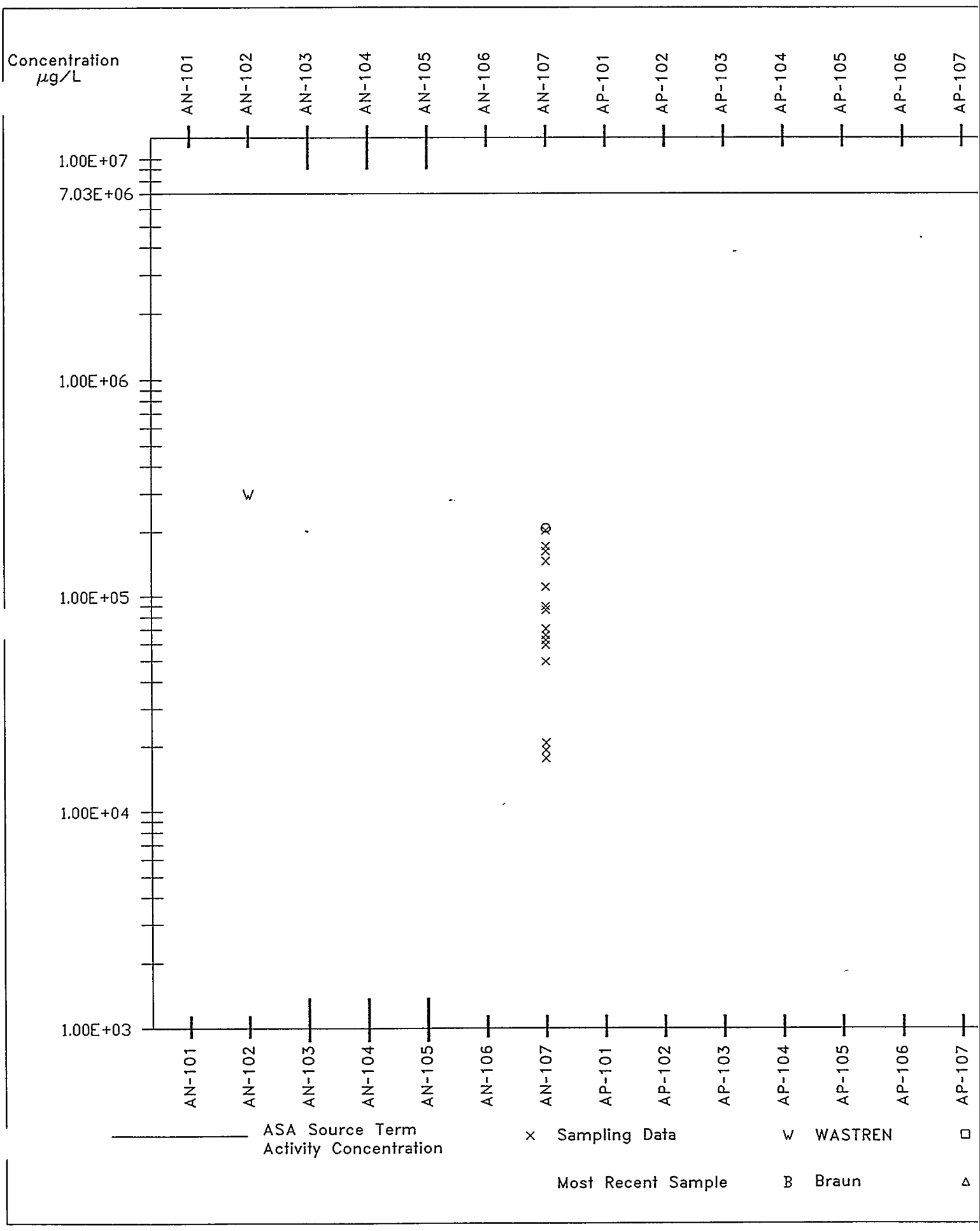
Extented tank lines represent Flamable Gas Watch List Tanks.

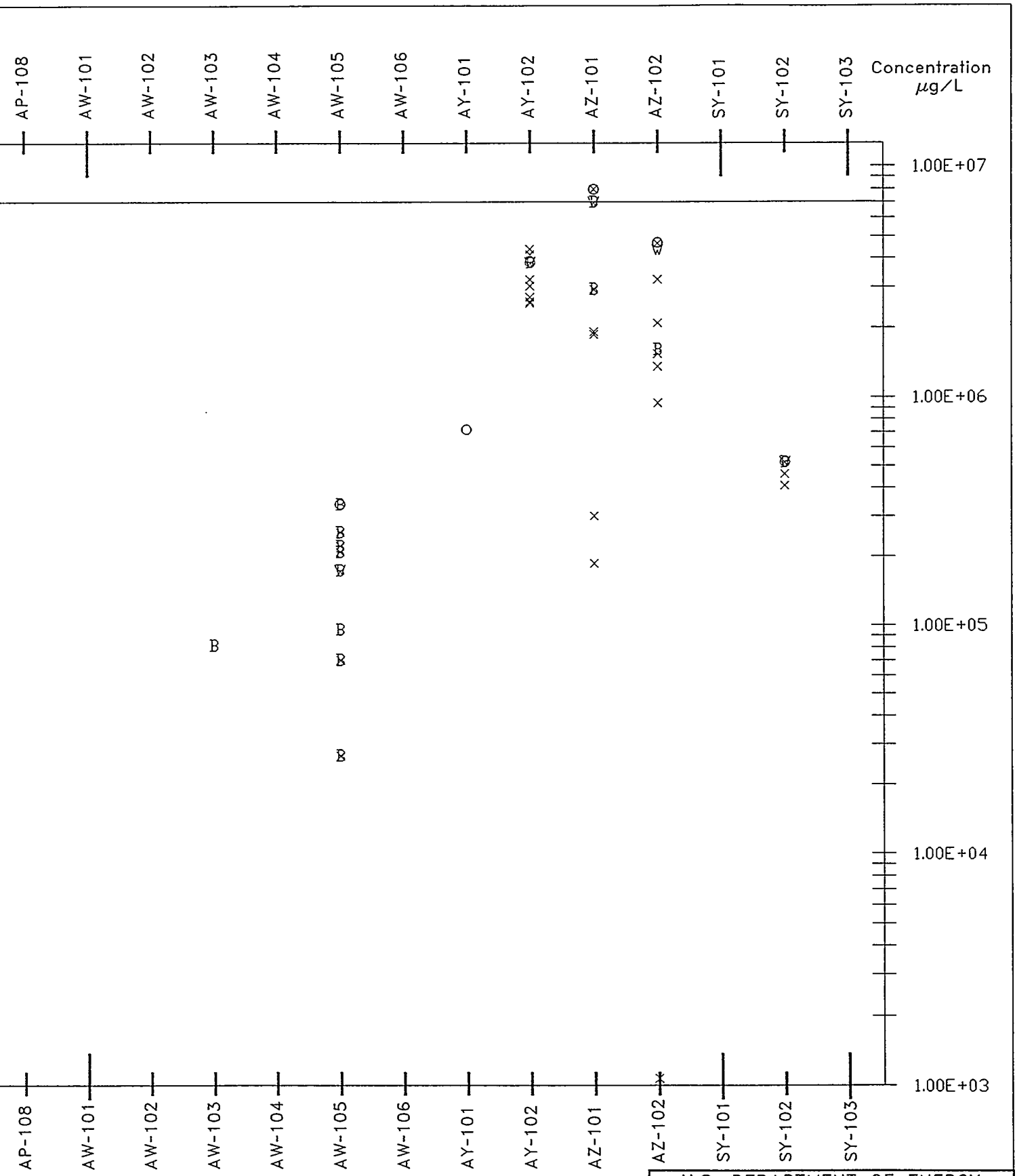
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Nd - Neodymium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CC79 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+07
7.03E+06
1.00E+06
1.00E+05
1.00E+04
1.00E+03
W
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



HTCE Inventory

TRAC

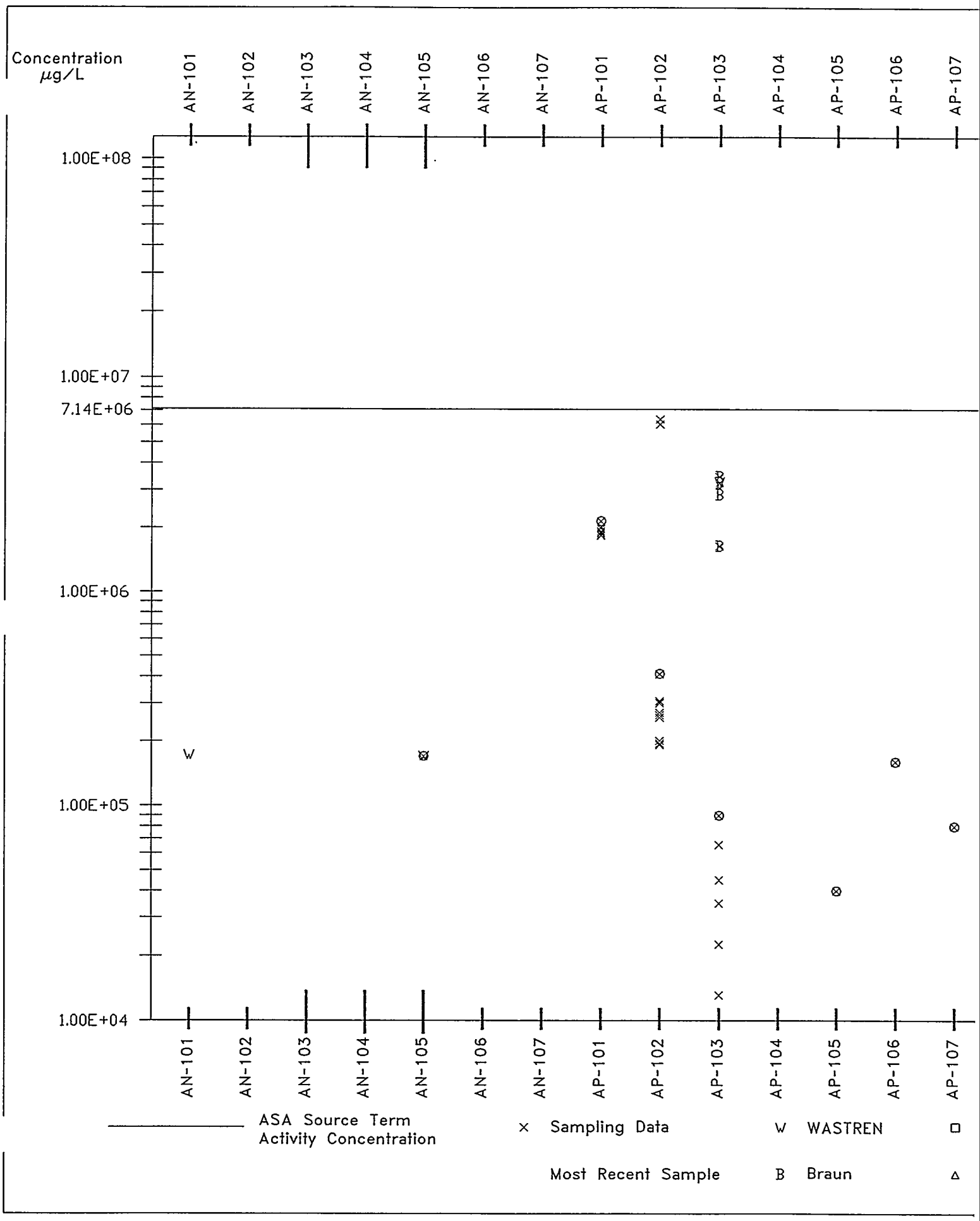
Extented tank lines represent Flamable Gas Watch List Tanks.

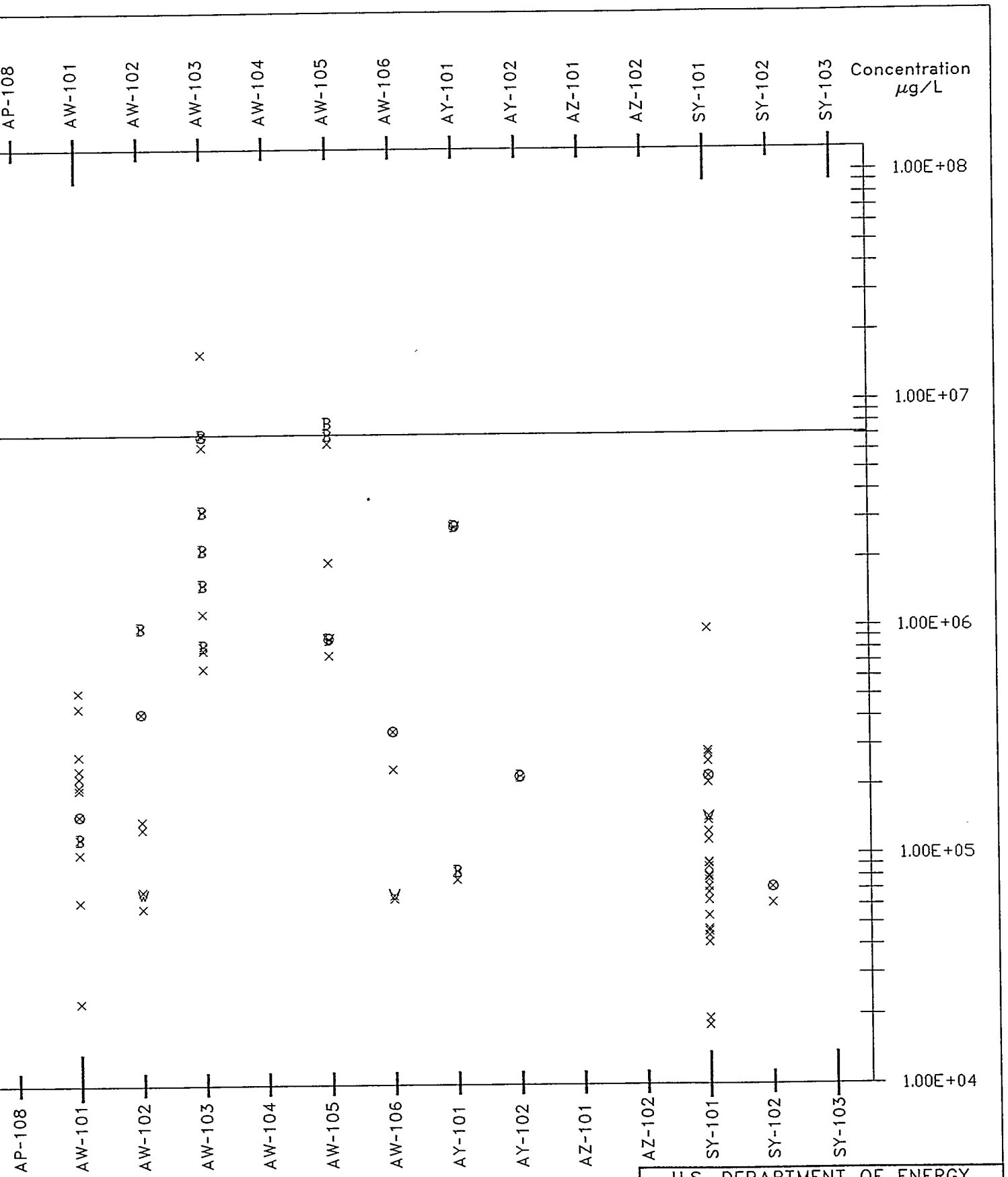
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Nd - Neodymium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC80 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+08
1.00E+07
7.14E+06
1.00E+06
1.00E+05
1.00E+04
W
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
B Braun



TCE Inventory

RAC

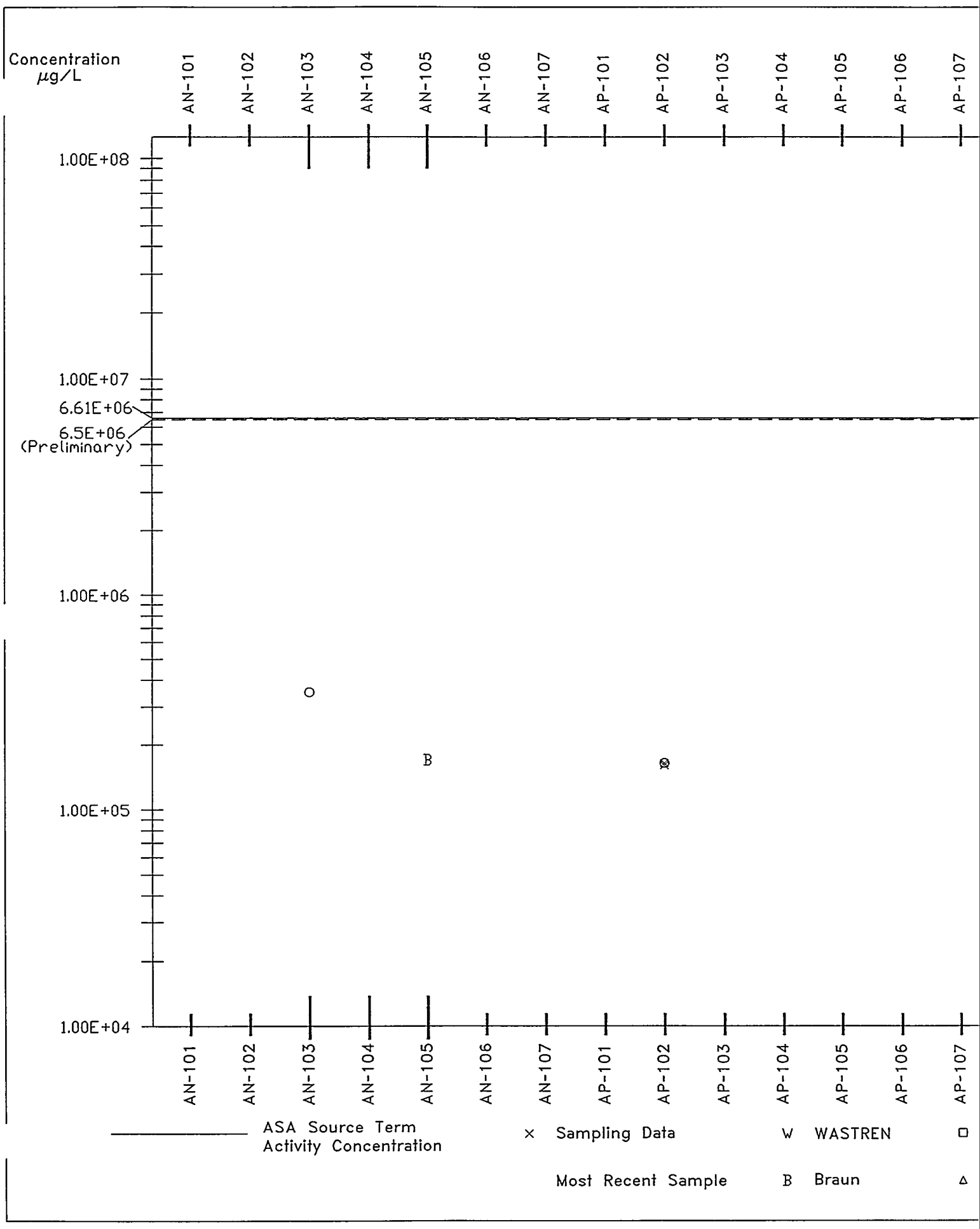
Extented tank lines represent Flamable Gas Watch List Tanks.

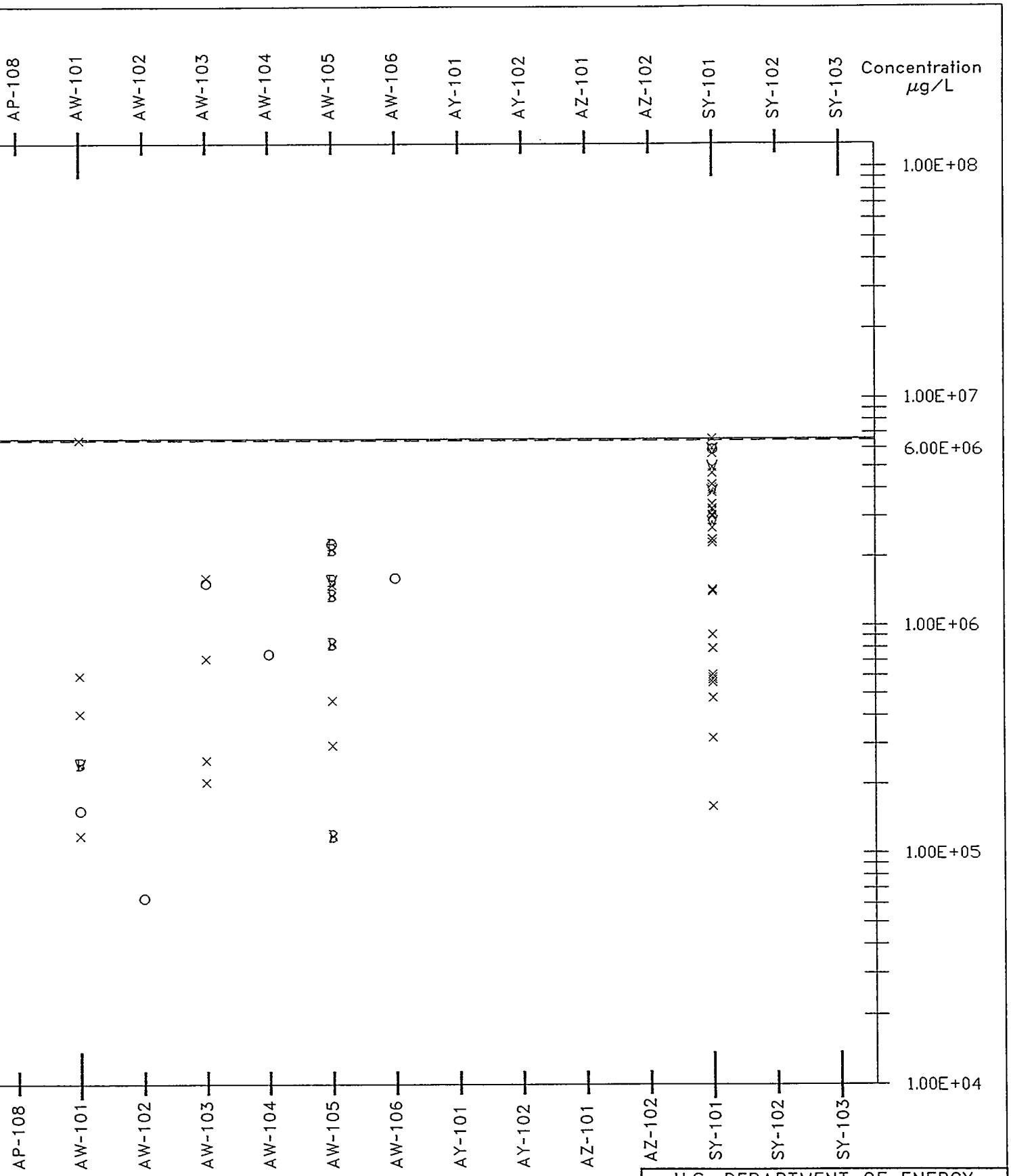
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
NH3 - Ammonia Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC81 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+08
1.00E+07
6.61E+06
6.5E+06
(Preliminary)
1.00E+06
1.00E+05
1.00E+04
B
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
Most Recent Sample
B Braun



TCE Inventory

RAC

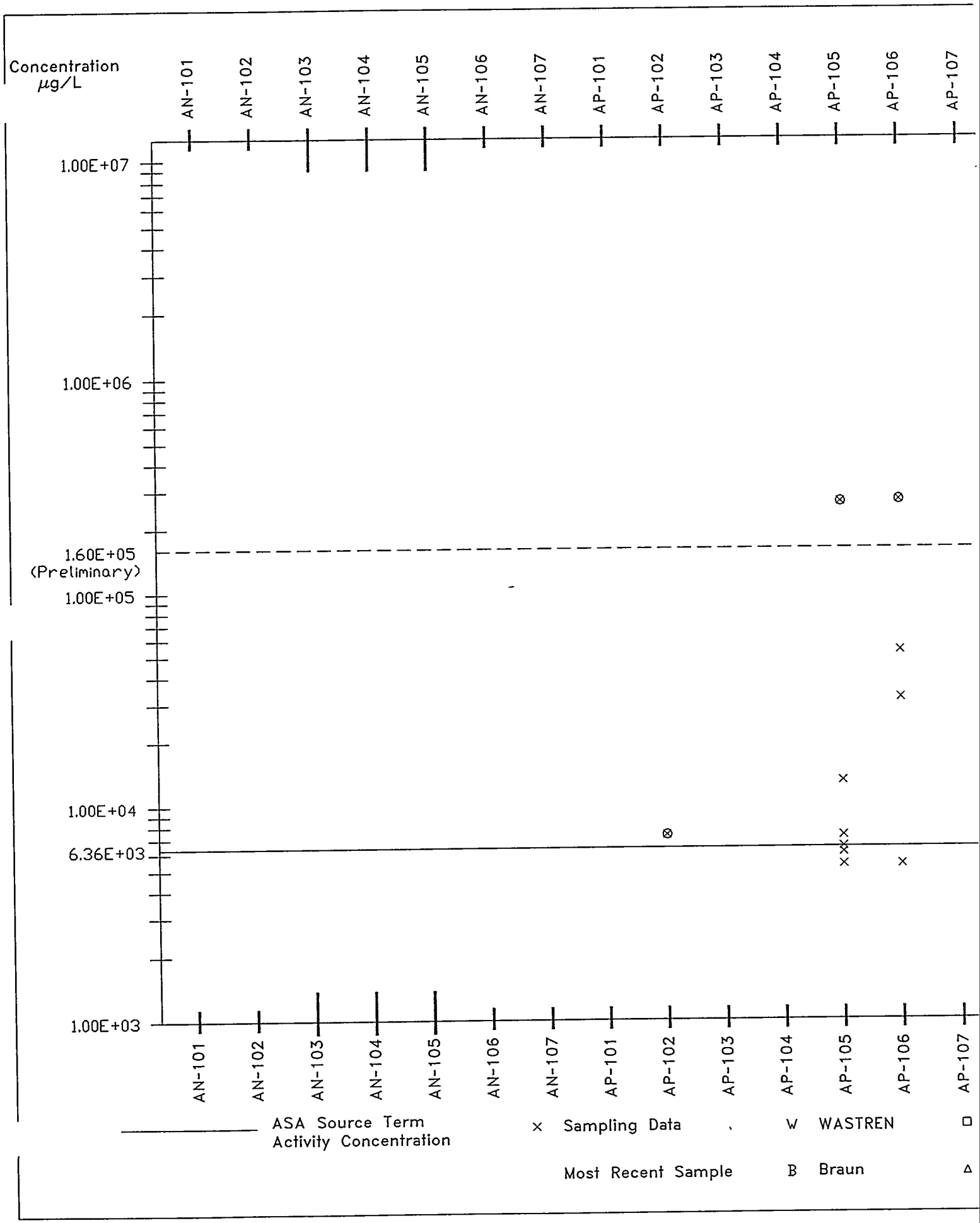
Extented tank lines represent Flamable Gas Watch List Tanks.

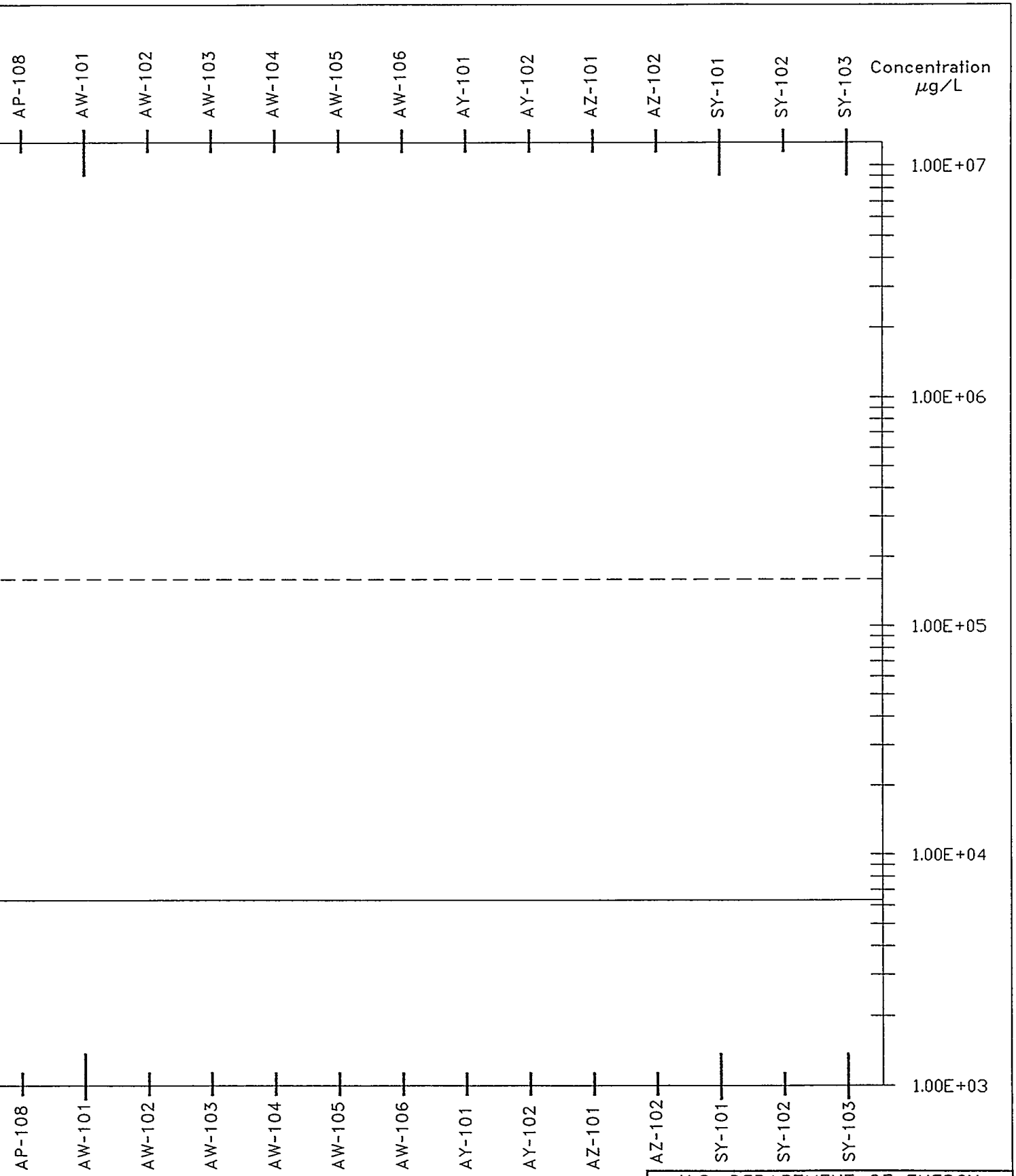
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
NH3 - Ammonia Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC82 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+07
1.00E+06
1.60E+05
(Preliminary)
1.00E+05
1.00E+04
6.36E+03
1.00E+03
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



TCE Inventory

RAC

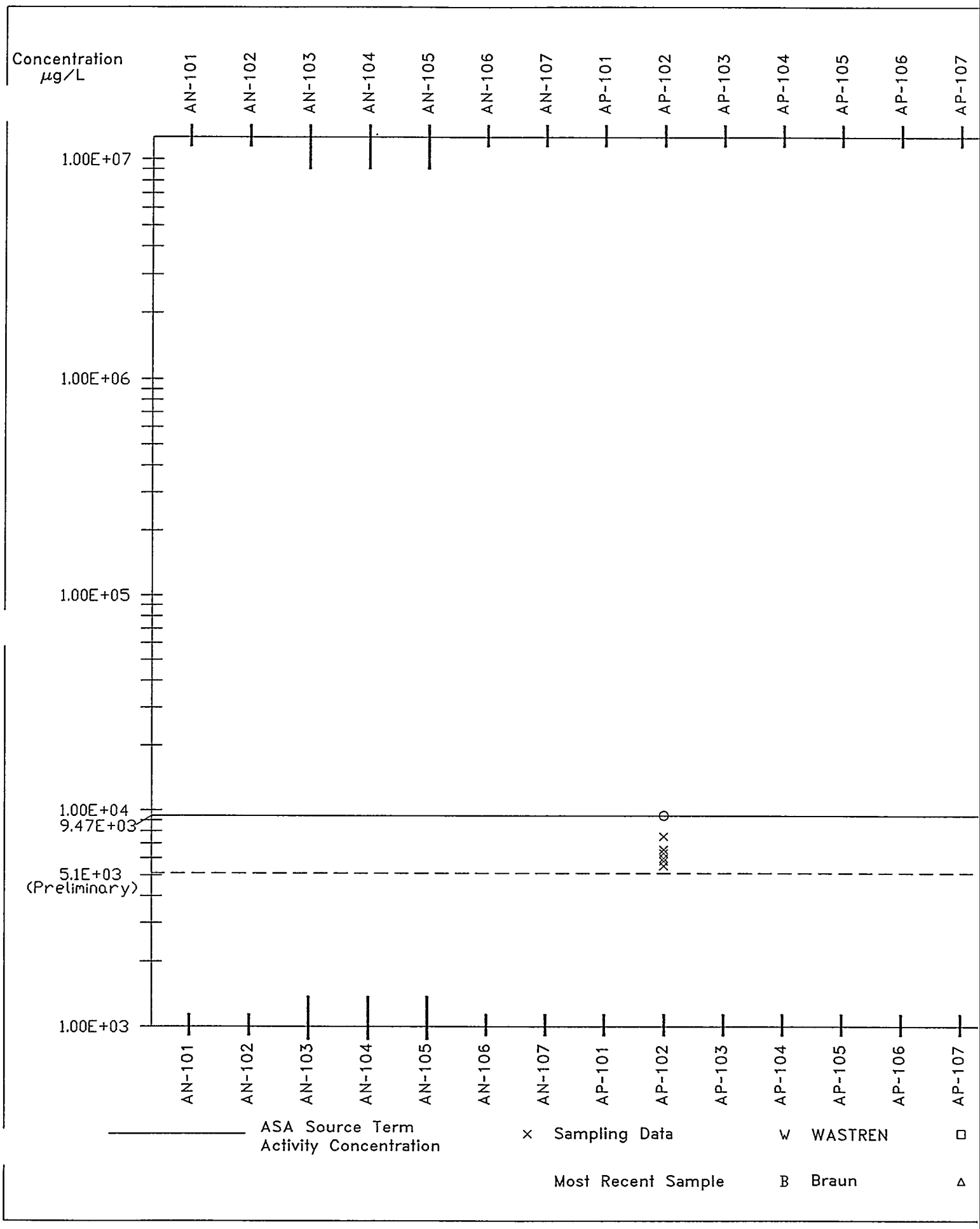
Extented tank lines represent Flamable Gas Watch List Tanks.

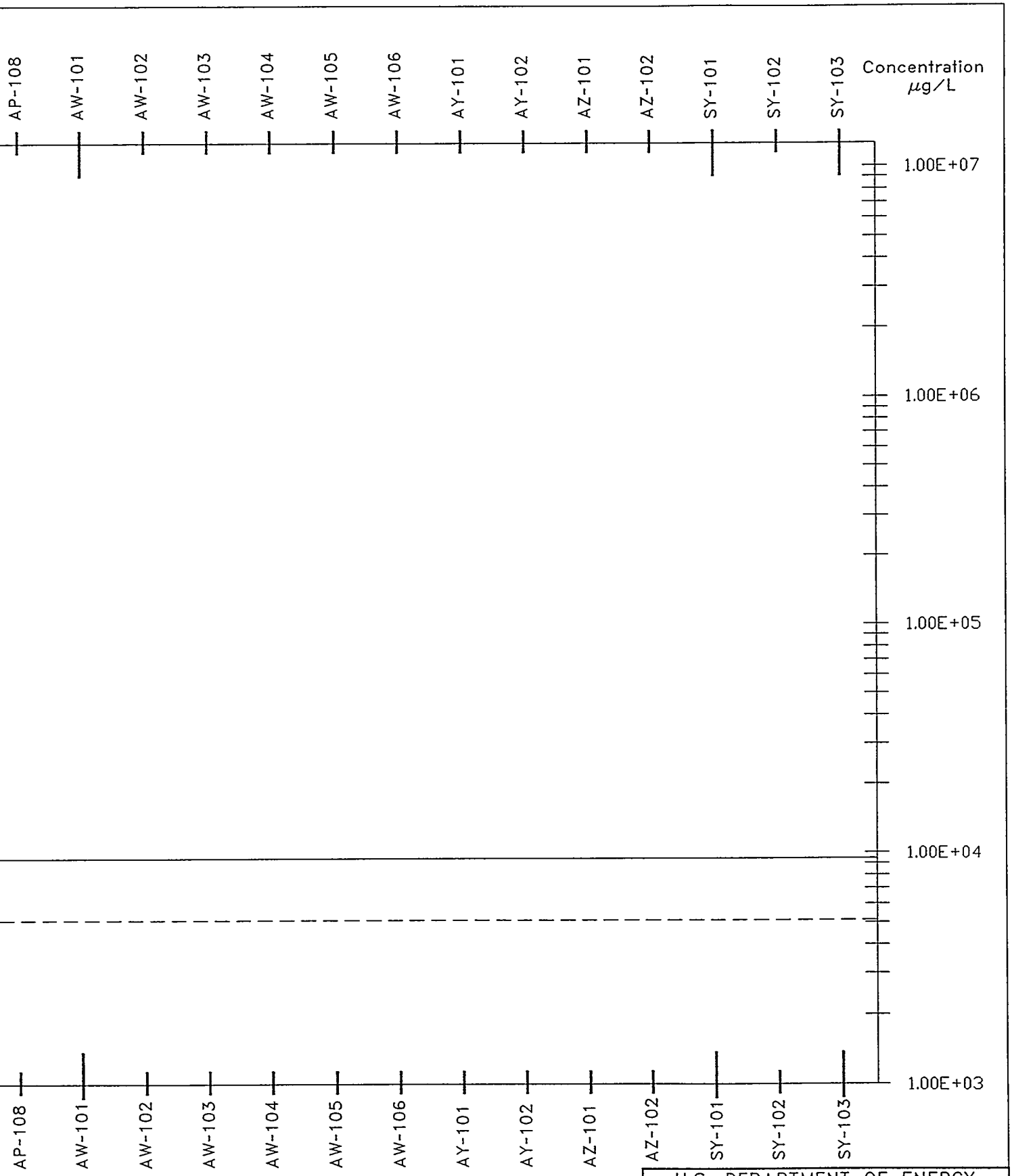
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Sb - Antimony Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC83 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+07
1.00E+06
1.00E+05
1.00E+04
9.47E+03
5.1E+03
(Preliminary)
1.00E+03
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



TCE Inventory

RAC

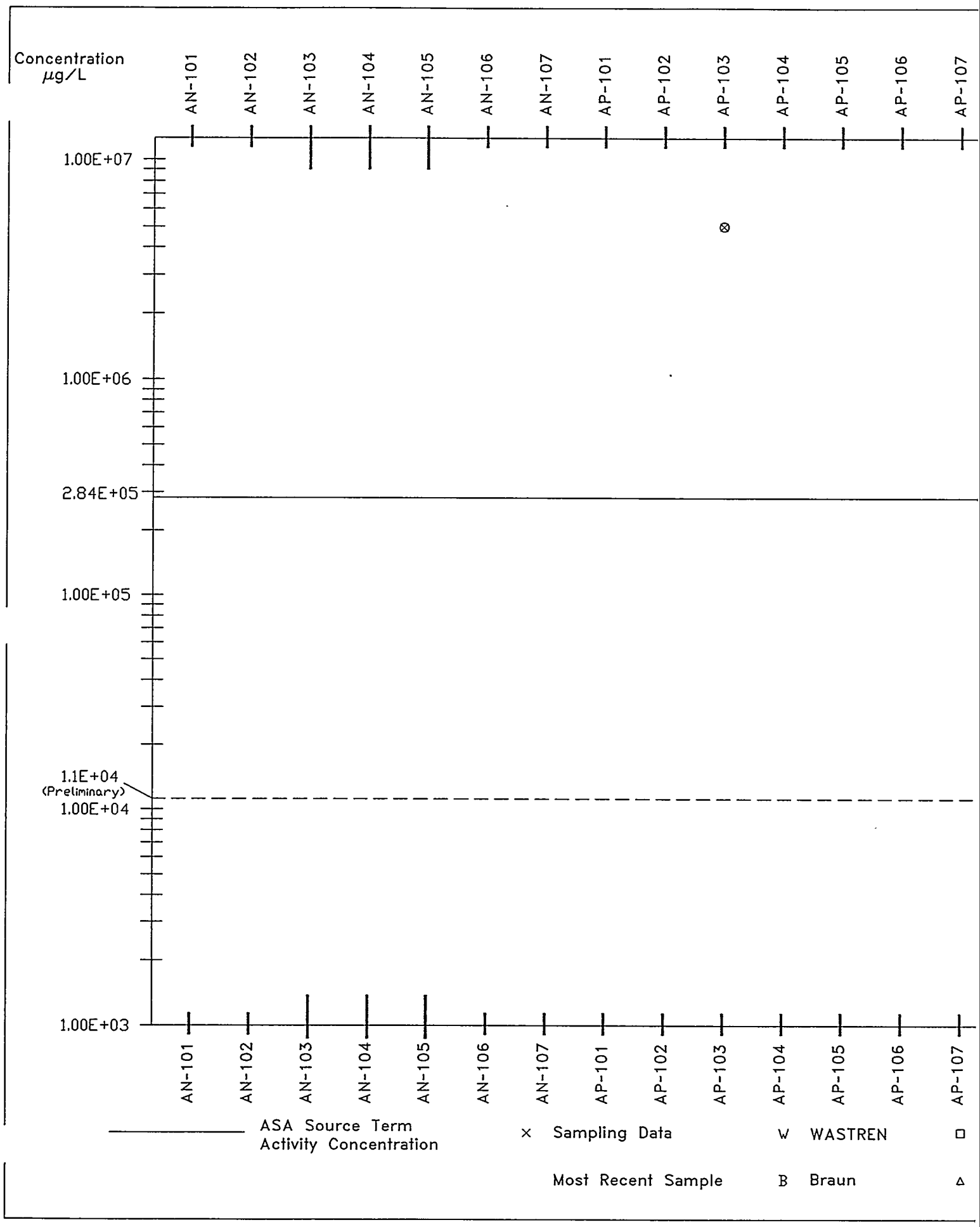
Extented tank lines represent Flamable Gas Watch List Tanks.

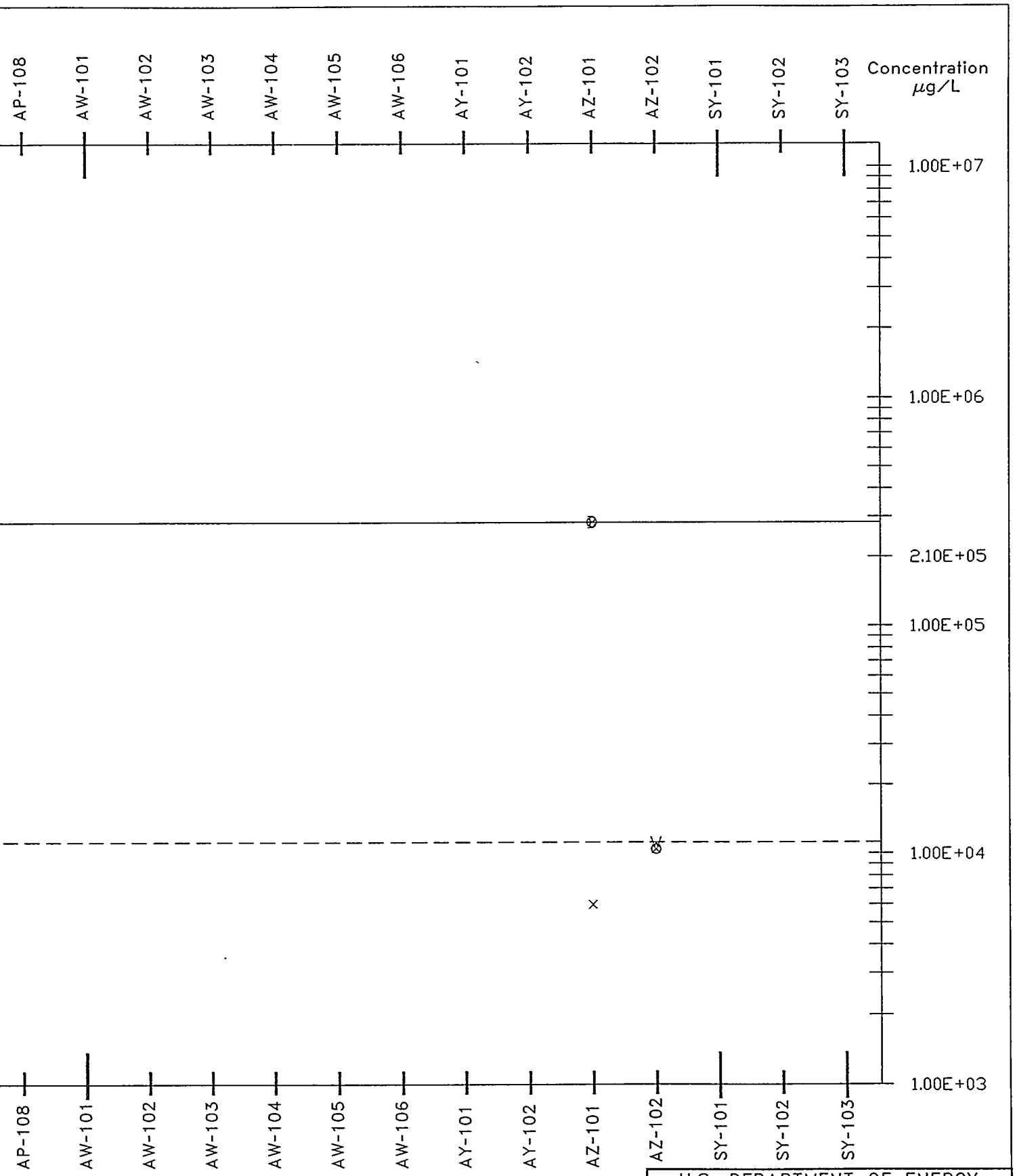
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Sb - Antimony Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CC84 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+07
1.00E+06
2.84E+05
1.00E+05
1.1E+04
(Preliminary)
1.00E+04
1.00E+03
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□
Most Recent Sample
B Braun
△



HTCE Inventory

TRAC

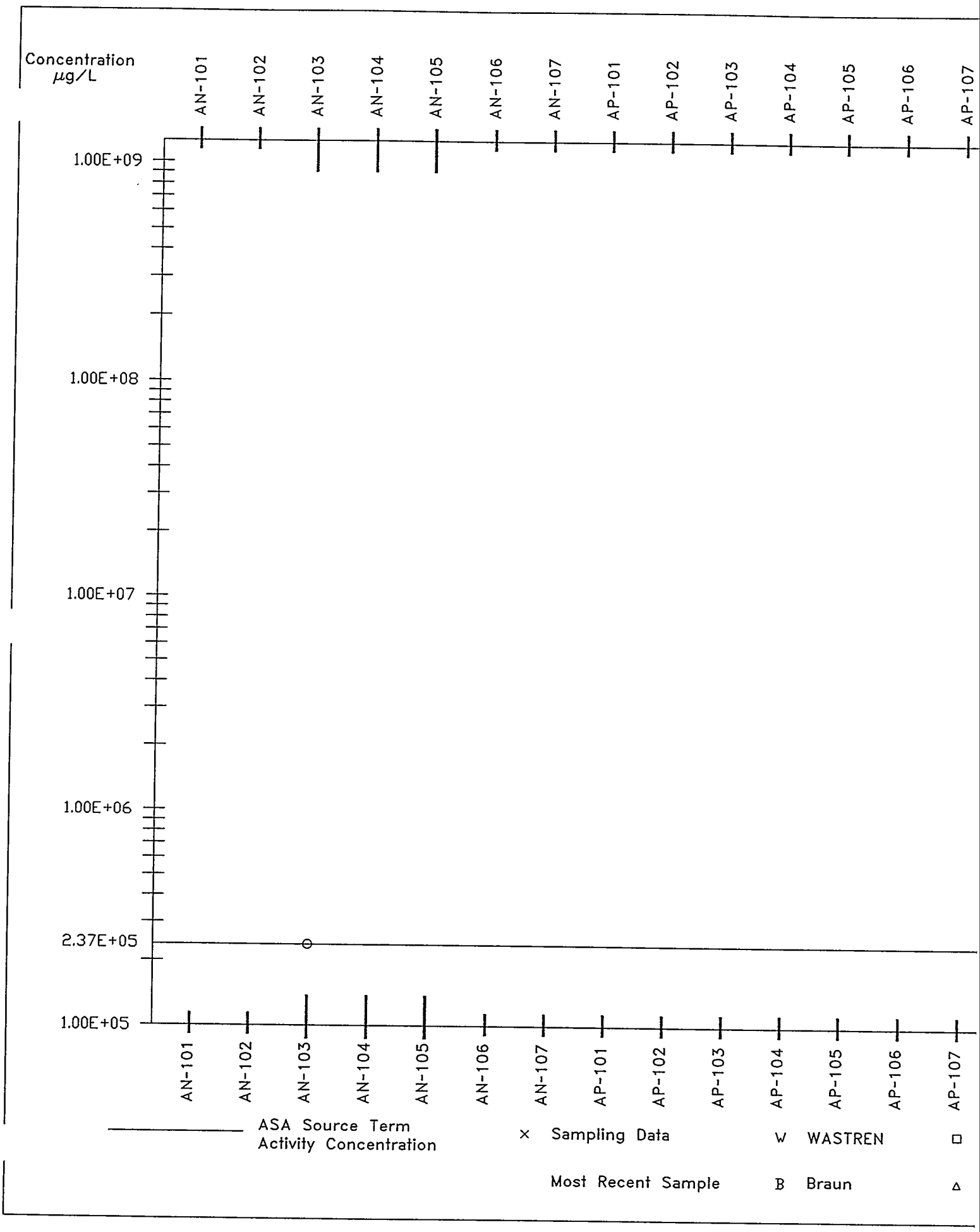
Extented tank lines represent Flamable Gas Watch List Tanks.

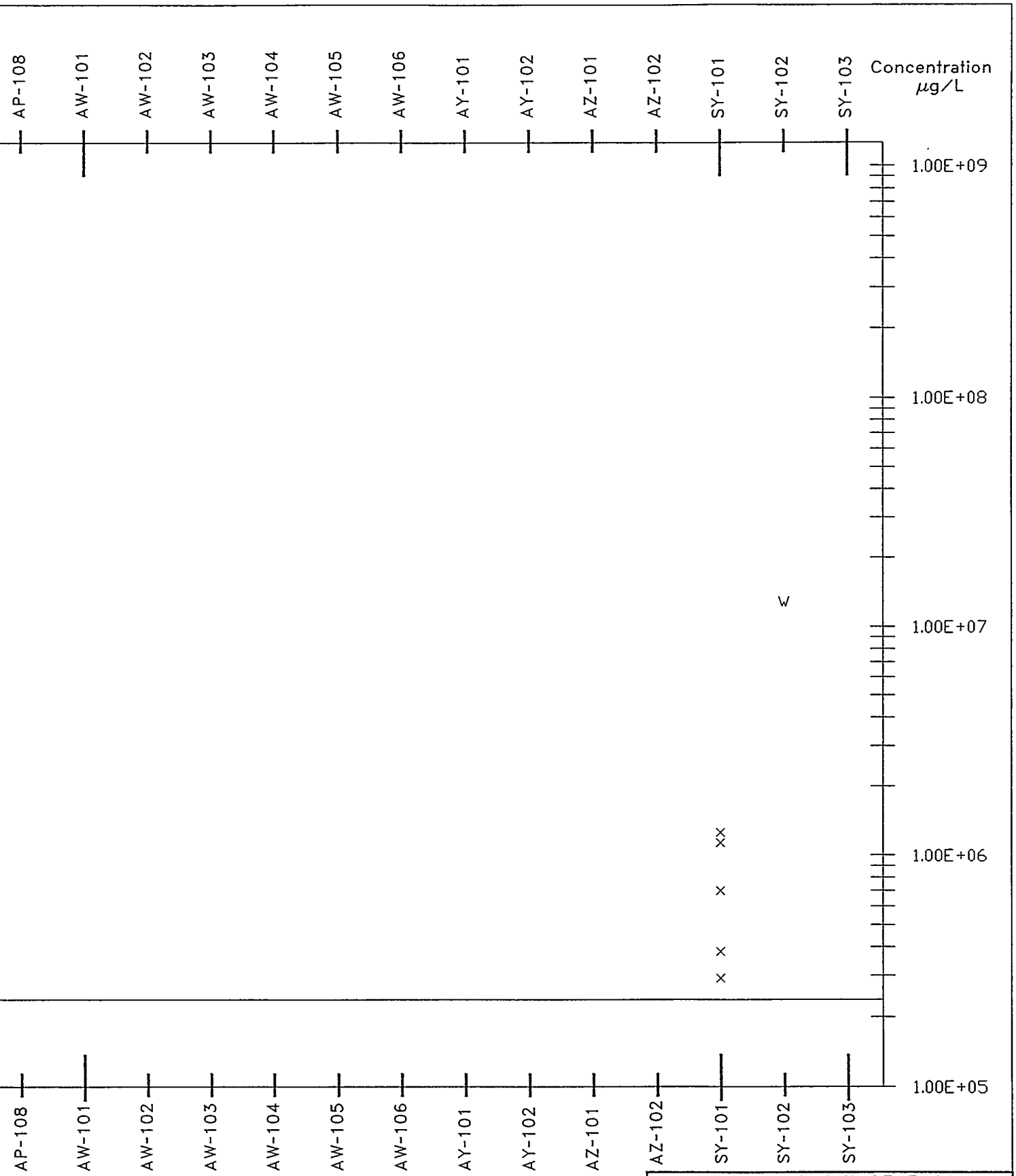
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Se - Selenium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC85 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+09
1.00E+08
1.00E+07
1.00E+06
2.37E+05
1.00E+05
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□
Most Recent Sample
B Braun
△



TCE Inventory

RAC

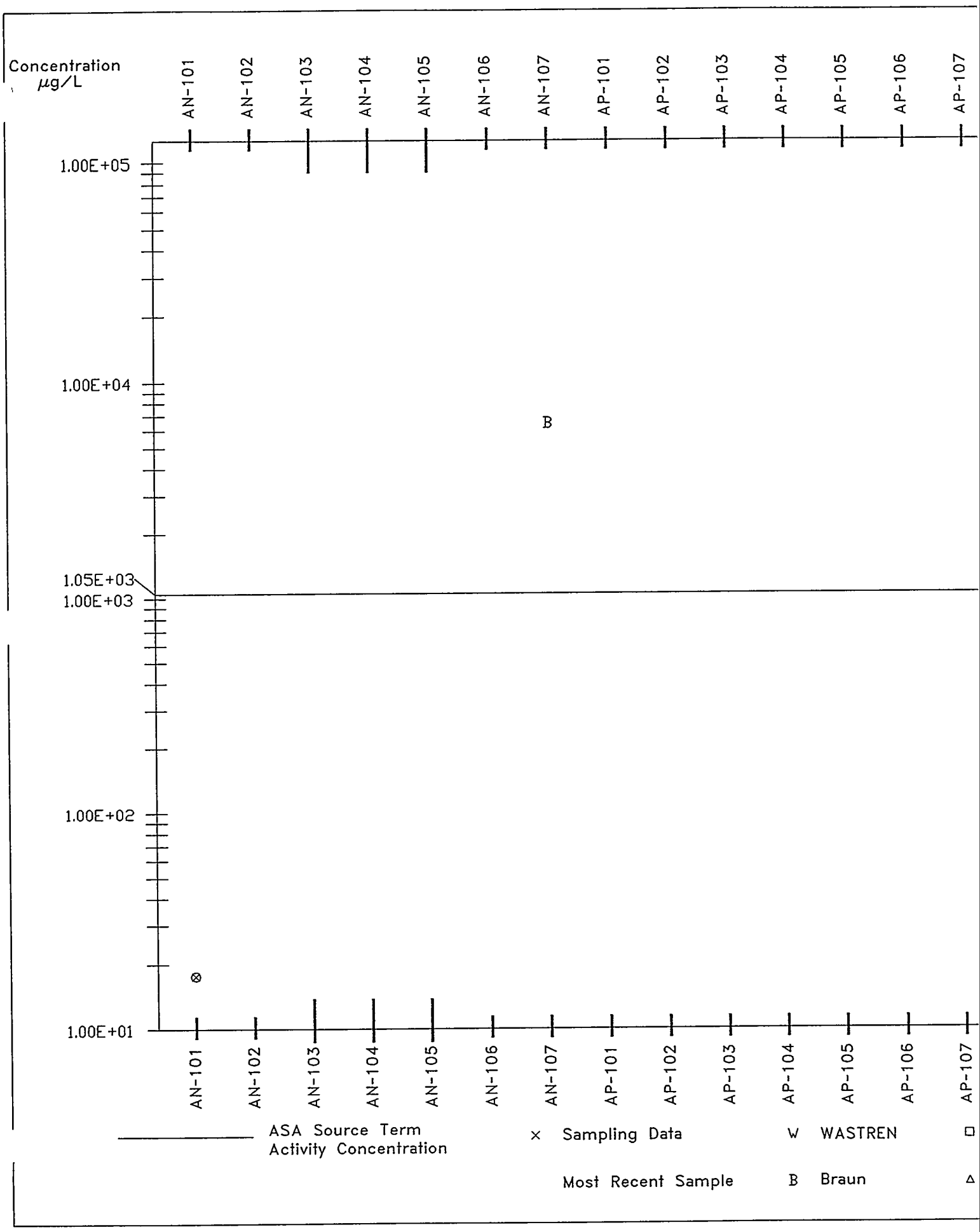
Extented tank lines represent Flamable Gas Watch List Tanks.

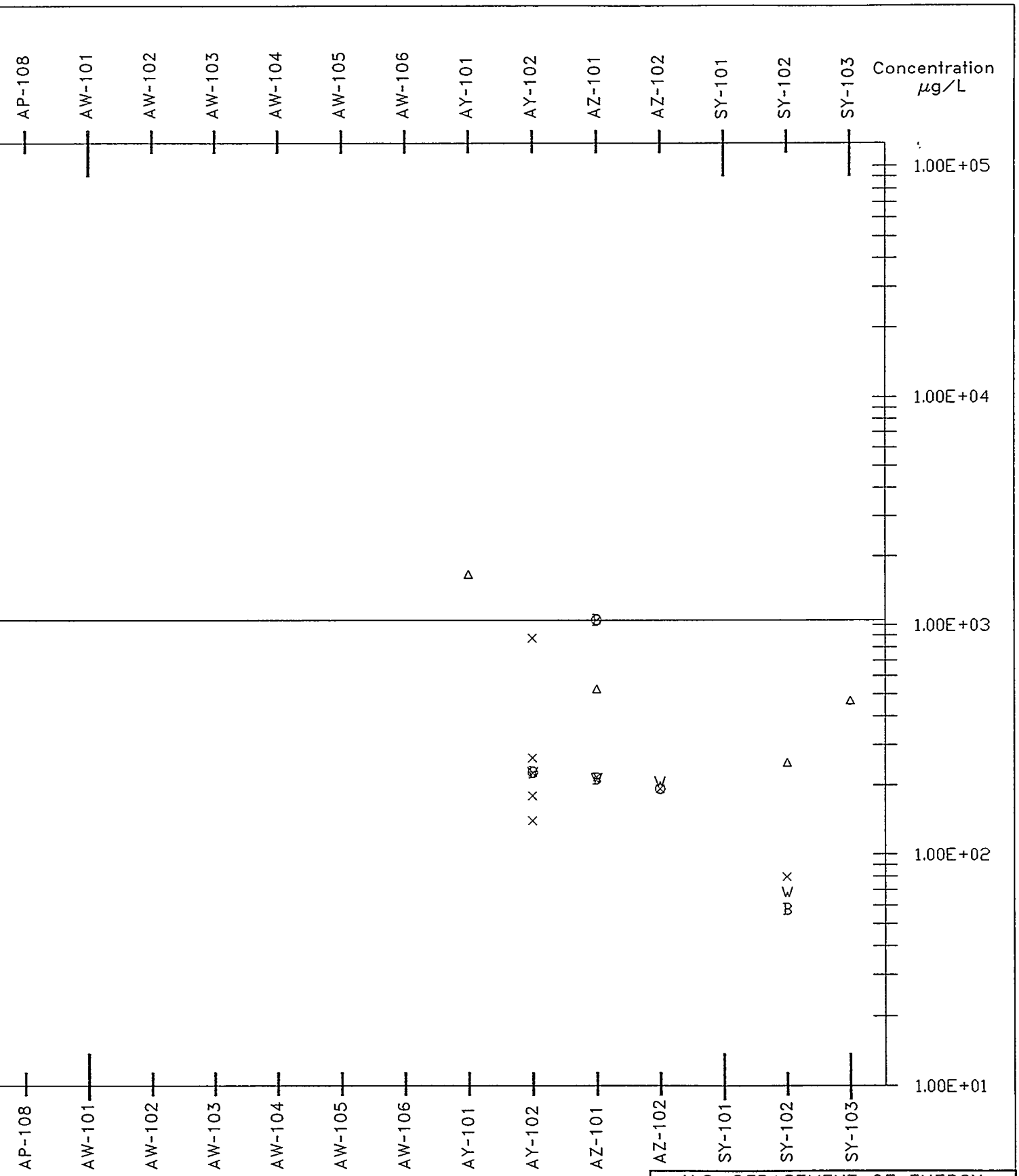
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Se - Selenium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC86 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+05
1.00E+04
1.05E+03
1.00E+03
1.00E+02
1.00E+01
B
ASA Source Term
Activity Concentration
Sampling Data
WASTREN
Most Recent Sample
Braun



HTCE Inventory

TRAC

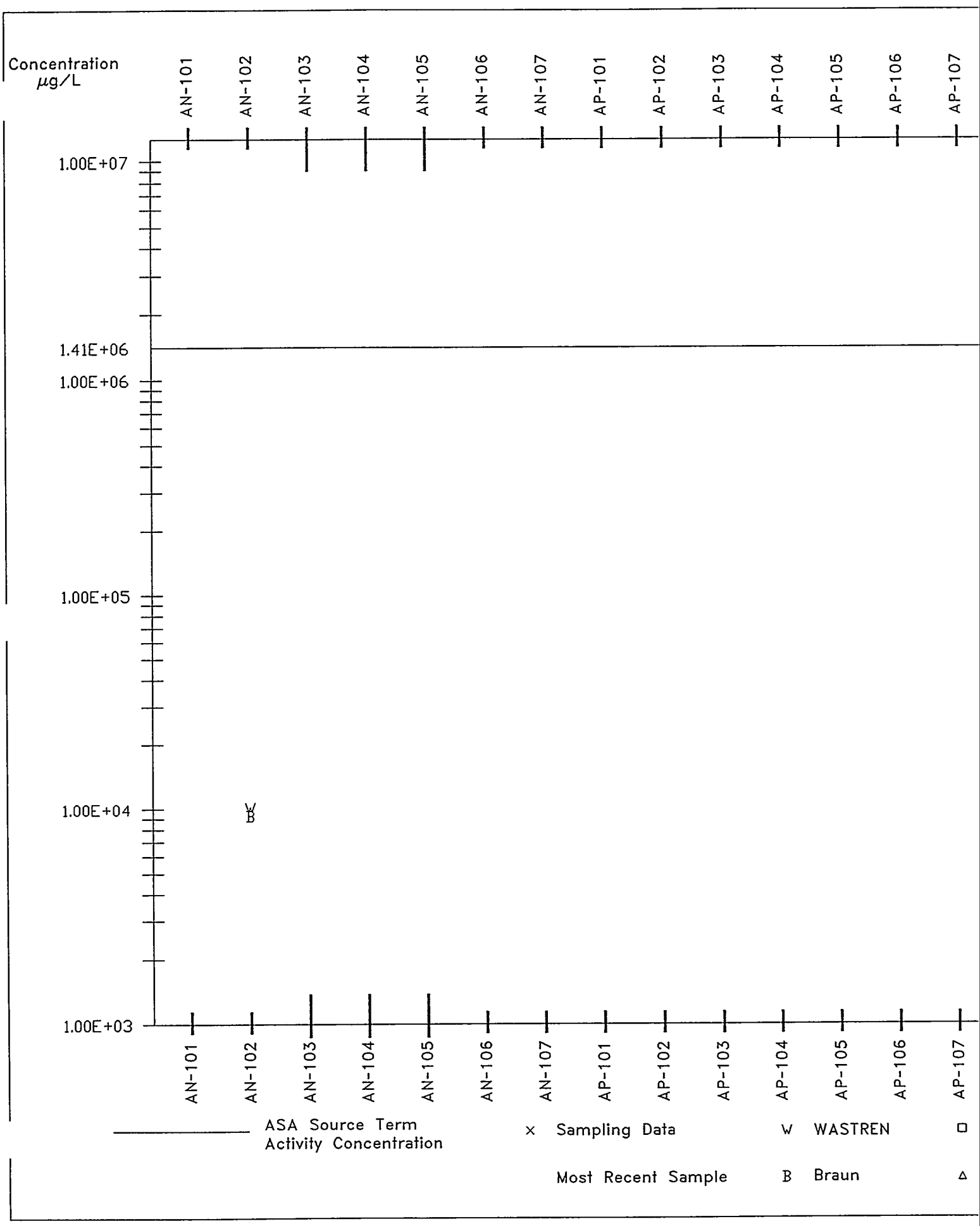
Extented tank lines represent Flamable Gas Watch List Tanks.

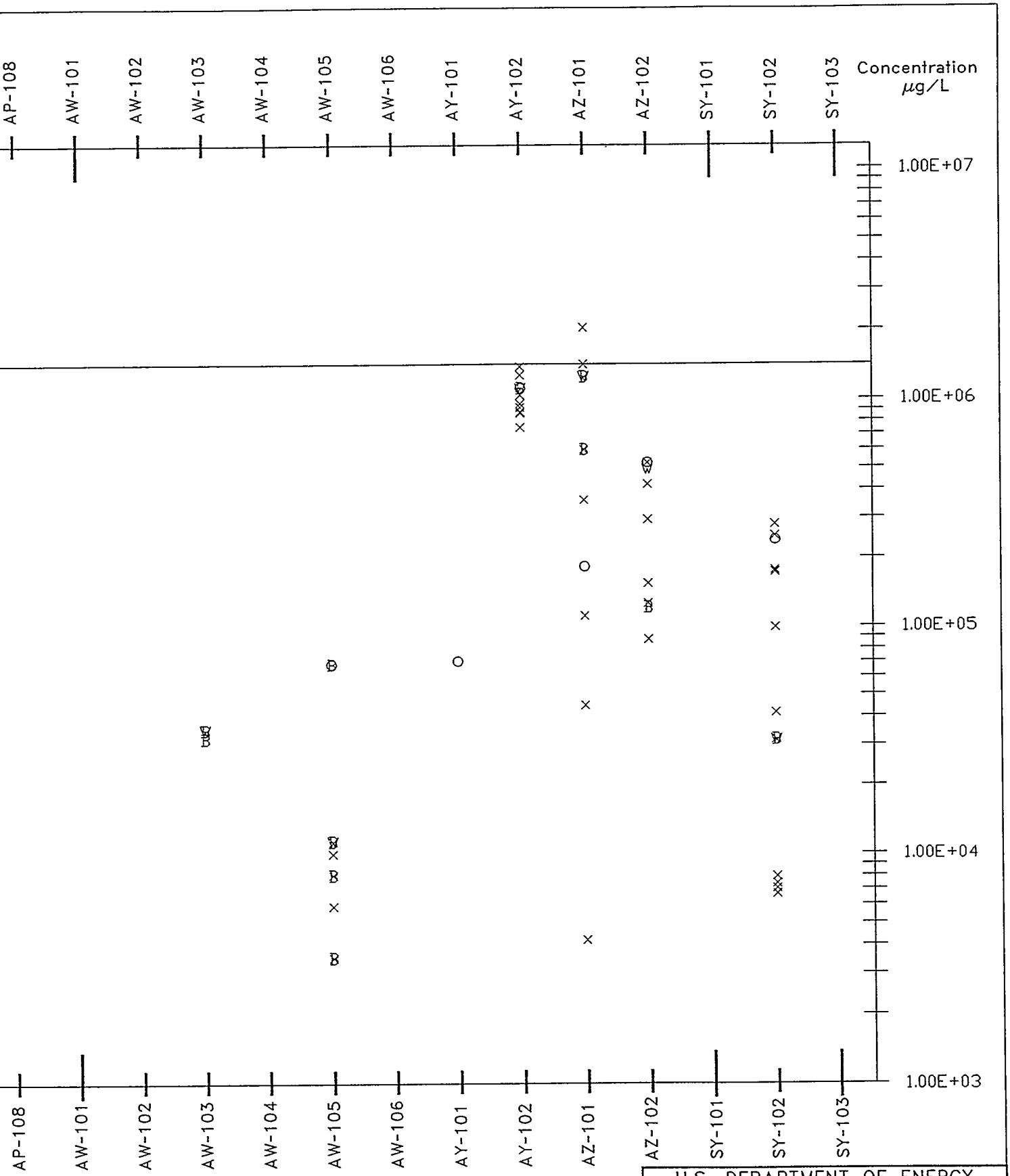
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Sr - Strontium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC87 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+07
1.41E+06
1.00E+06
1.00E+05
1.00E+04
1.00E+03
W
B
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□
Most Recent Sample
B Braun
△



TCE Inventory

RAC

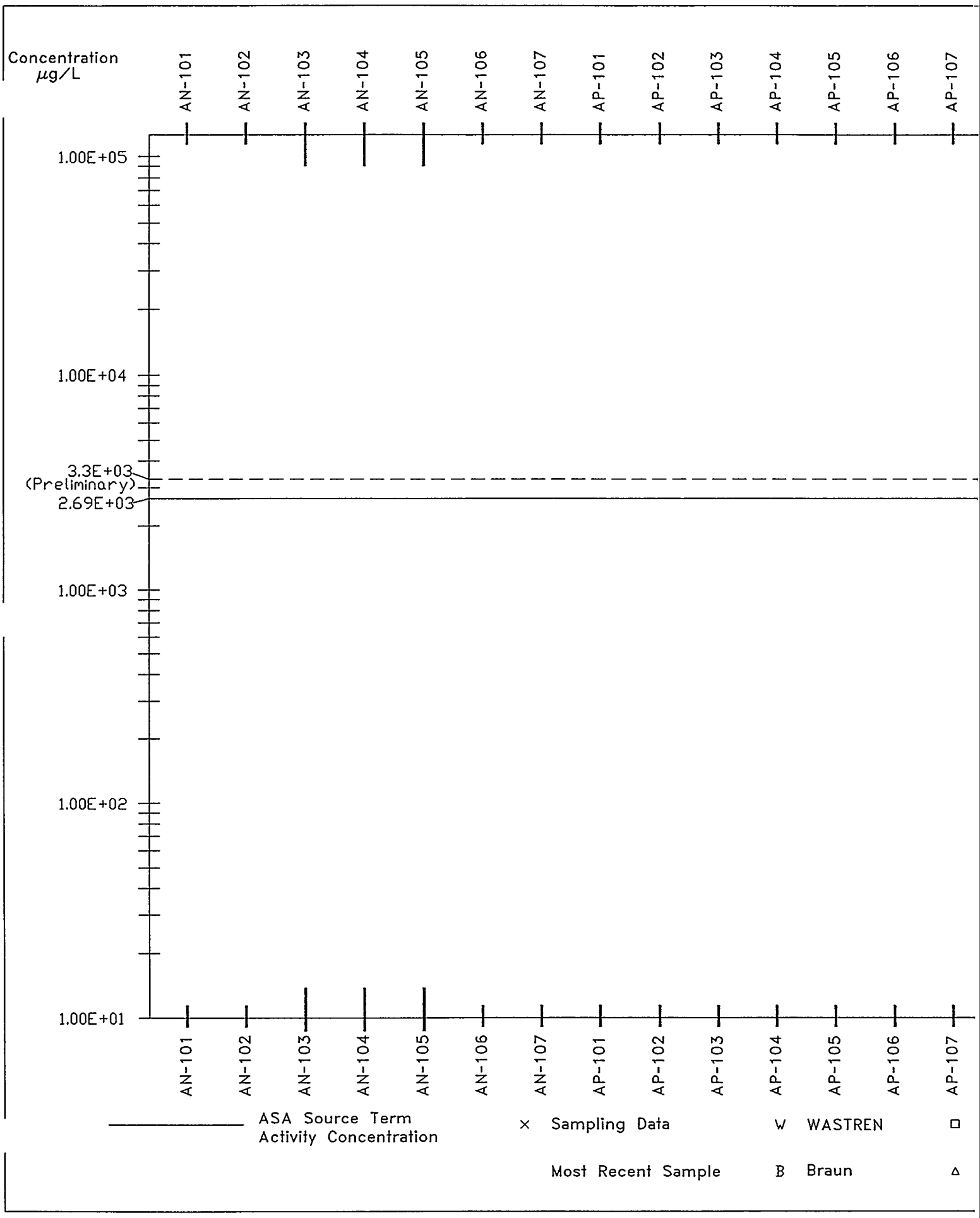
Extented tank lines represent Flamable Gas Watch List Tanks.

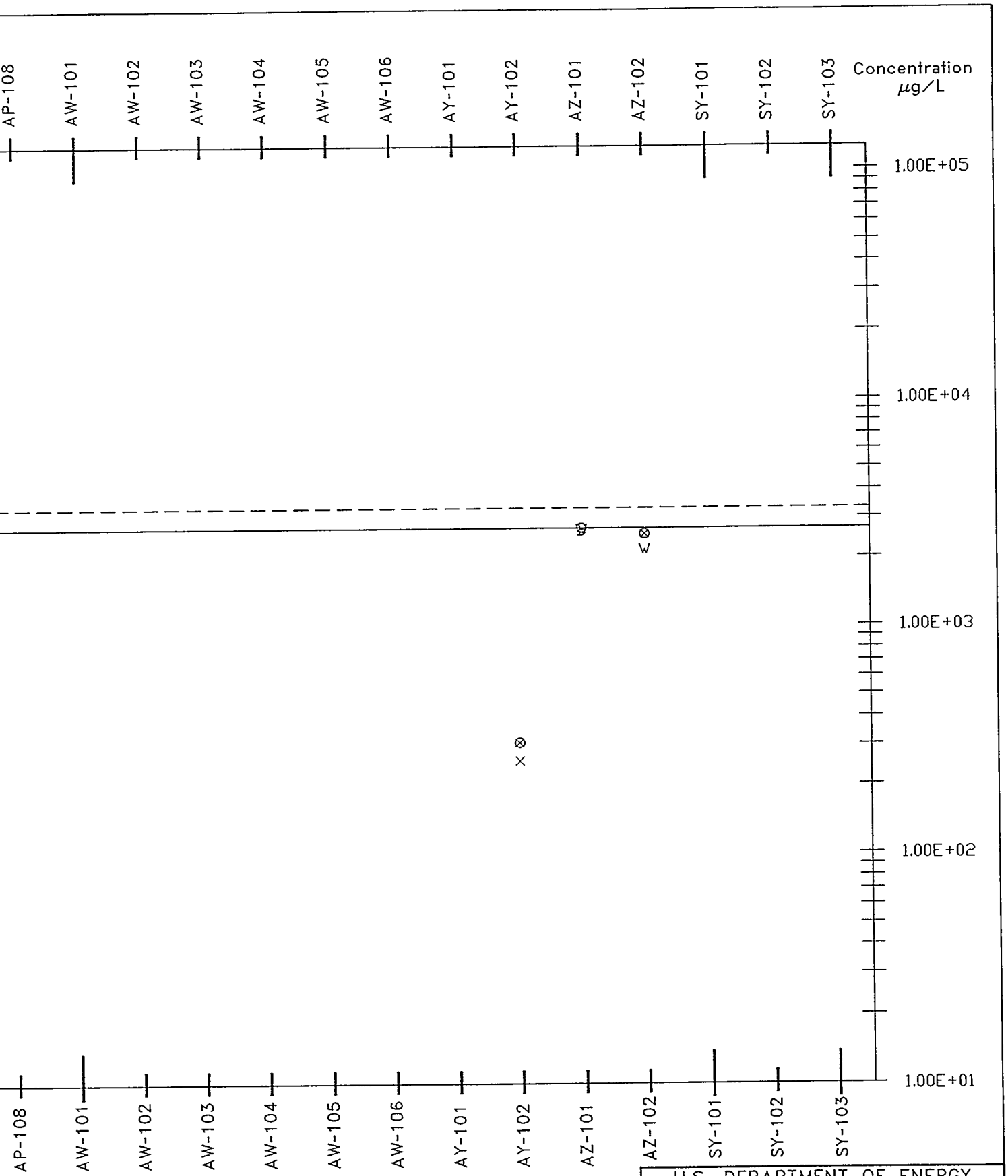
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Sr - Strontium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC88 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+05
1.00E+04
3.3E+03
(Preliminary)
2.69E+03
1.00E+03
1.00E+02
1.00E+01
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□
Most Recent Sample
B Braun
△



TCE Inventory

RAC

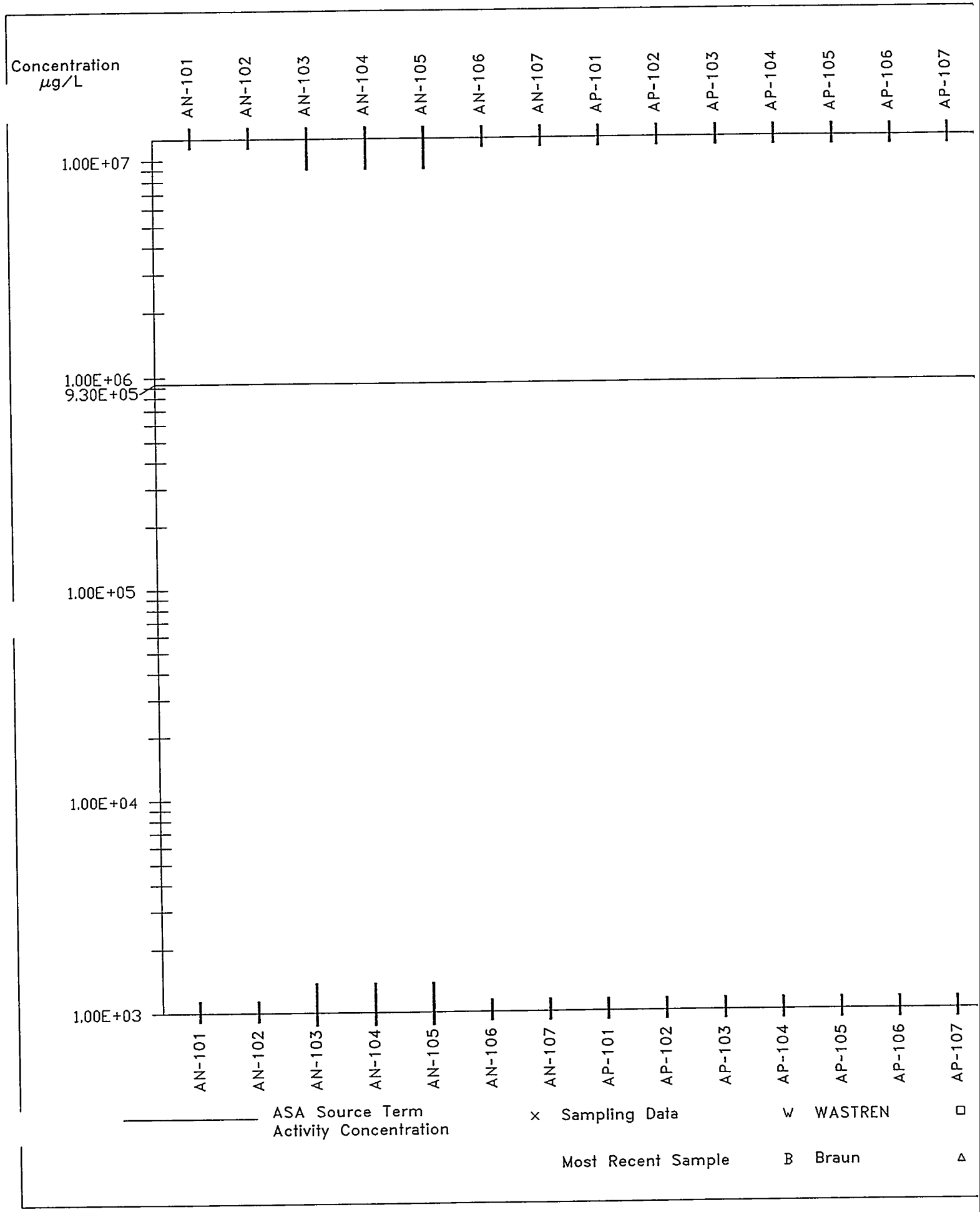
Extented tank lines represent Flamable Gas Watch List Tanks.

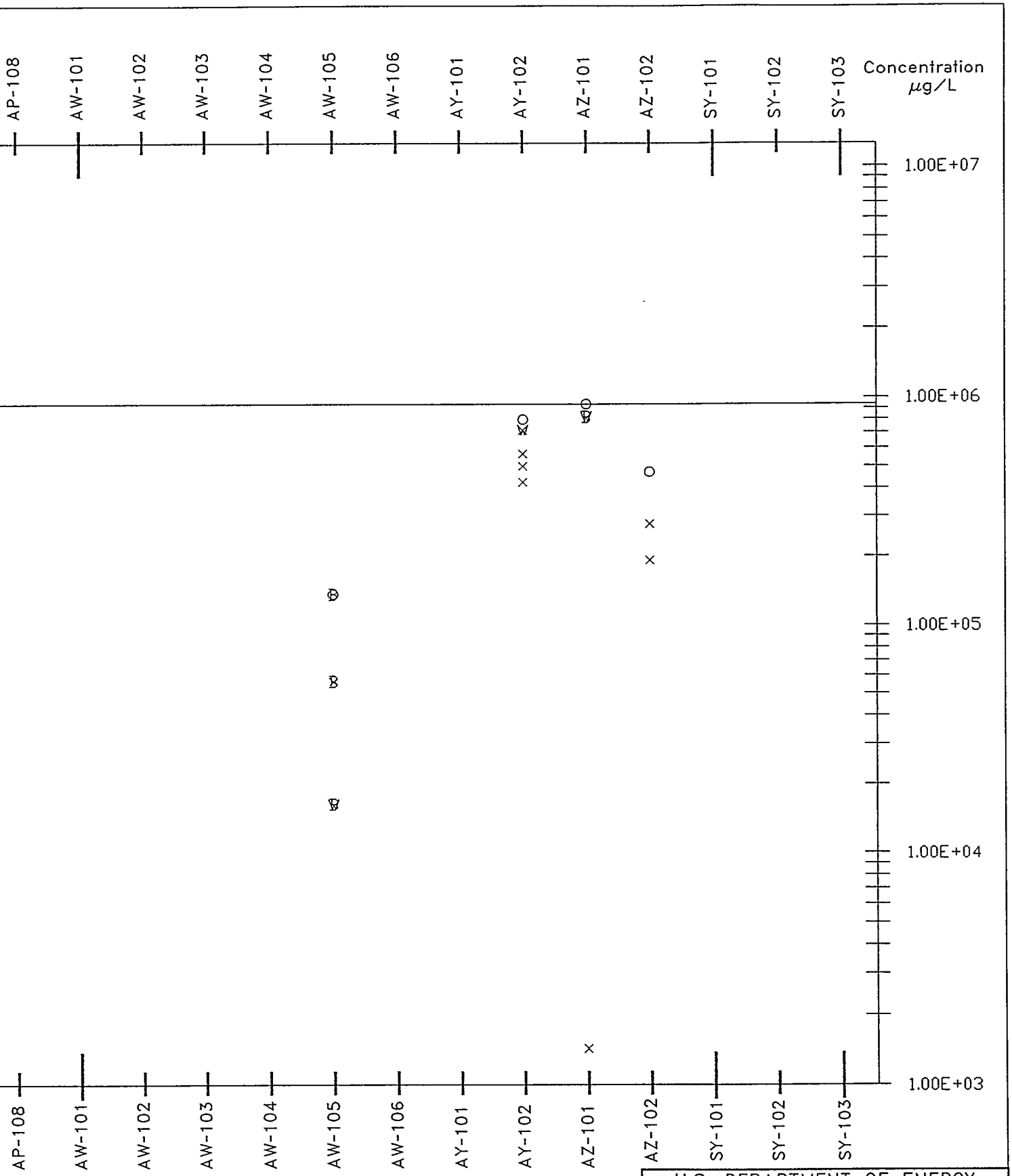
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Te - Tellurium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC89 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+07
1.00E+06
9.30E+05
1.00E+05
1.00E+04
1.00E+03
ASA Source Term
Activity Concentration
x Sampling Data
W WASTREN
Most Recent Sample
B Braun



TCE Inventory

RAC

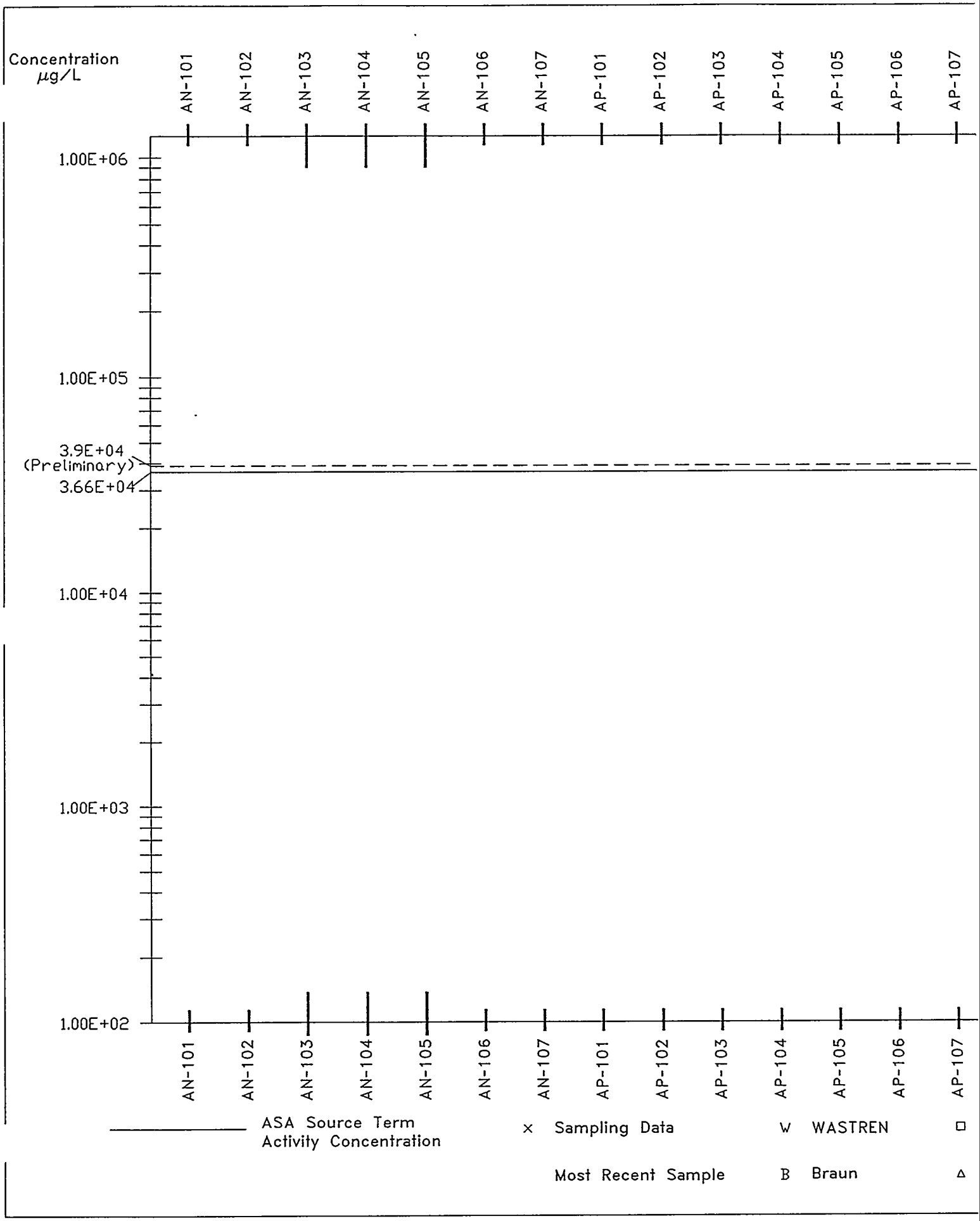
Extented tank lines represent Flamable Gas Watch List Tanks.

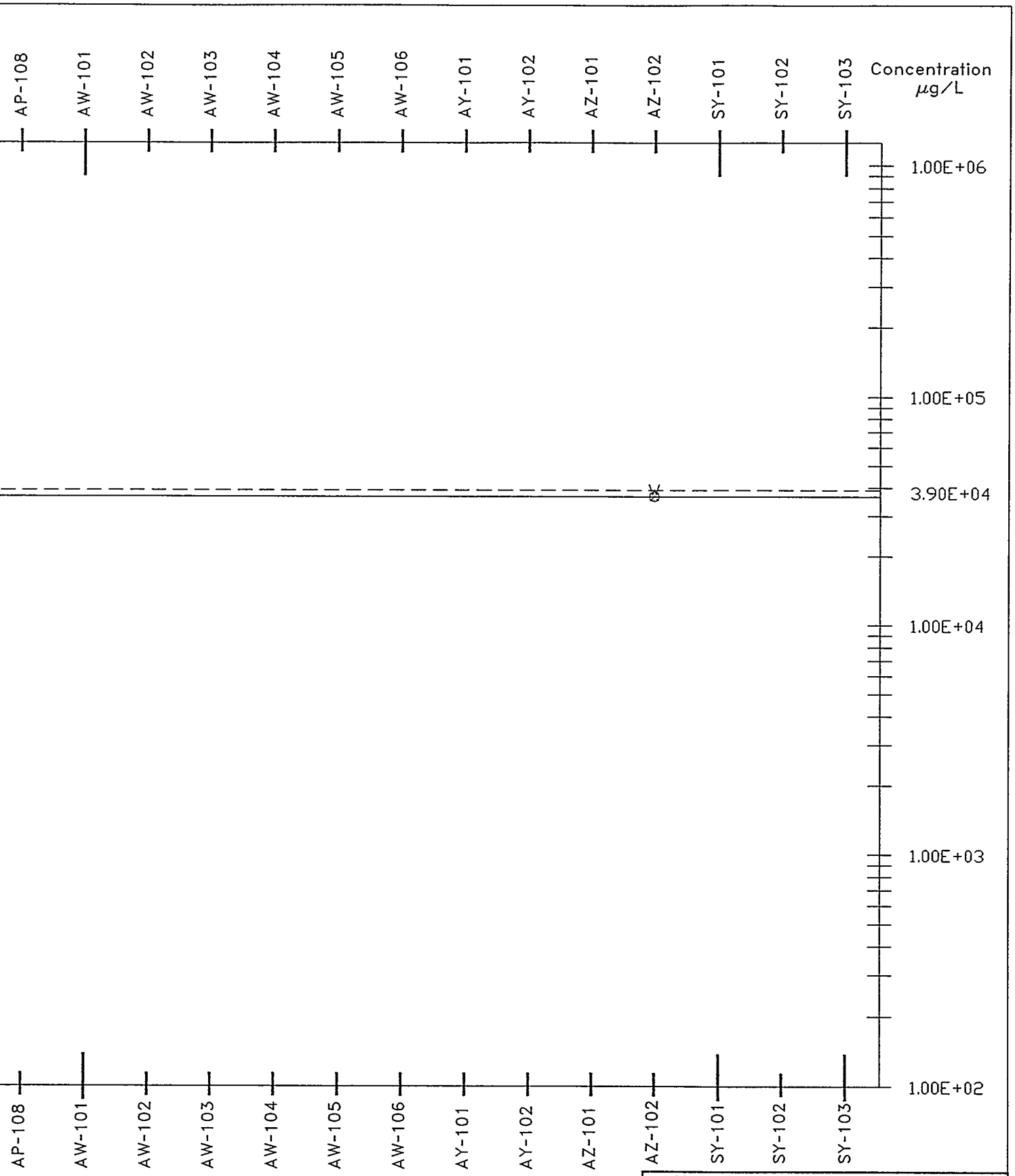
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Te - Tellurium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC90 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+06
1.00E+05
3.9E+04
(Preliminary)
3.66E+04
1.00E+04
1.00E+03
1.00E+02
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□
Most Recent Sample
B Braun
△



TCE Inventory

RAC

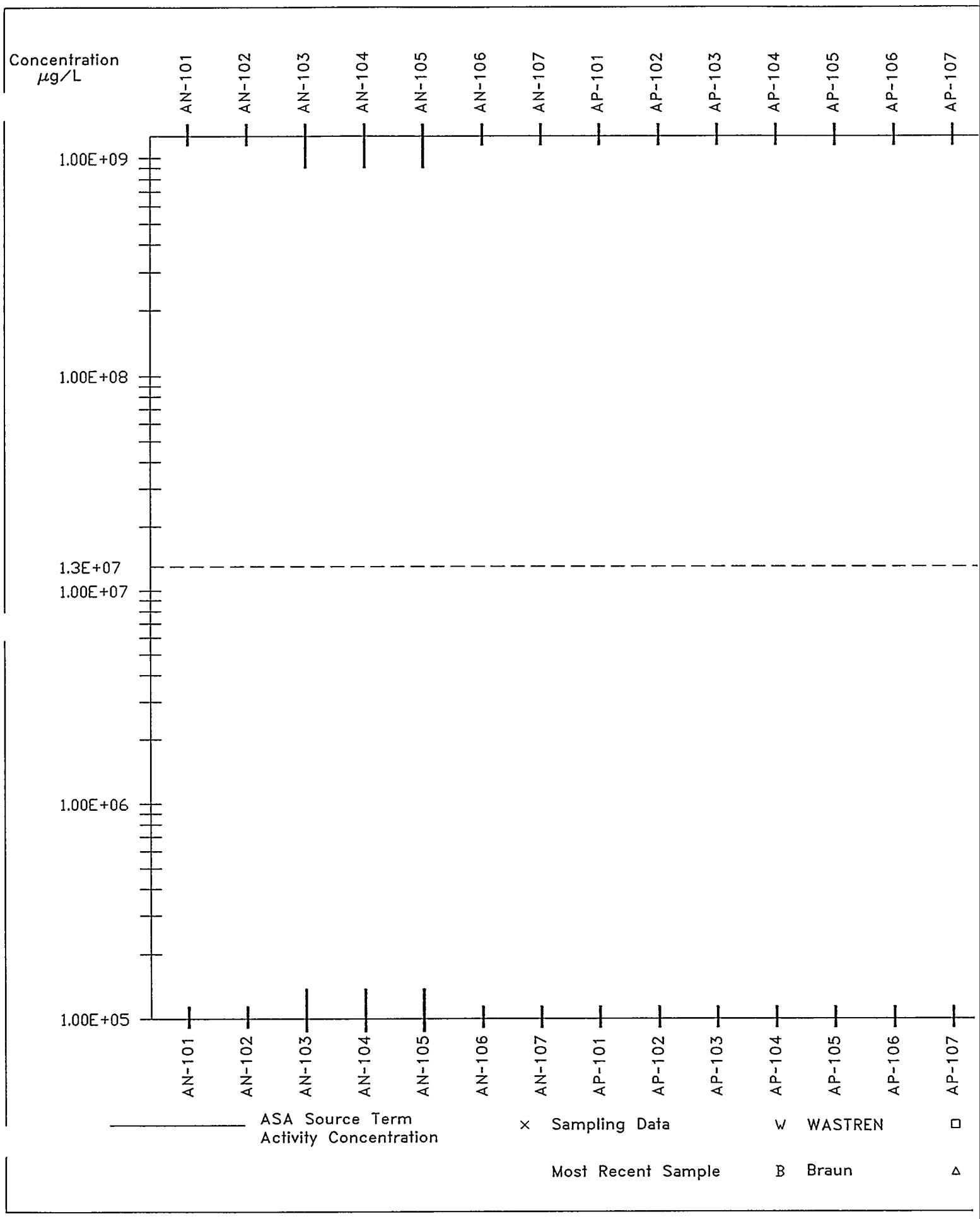
Extented tank lines represent Flamable Gas Watch List Tanks.

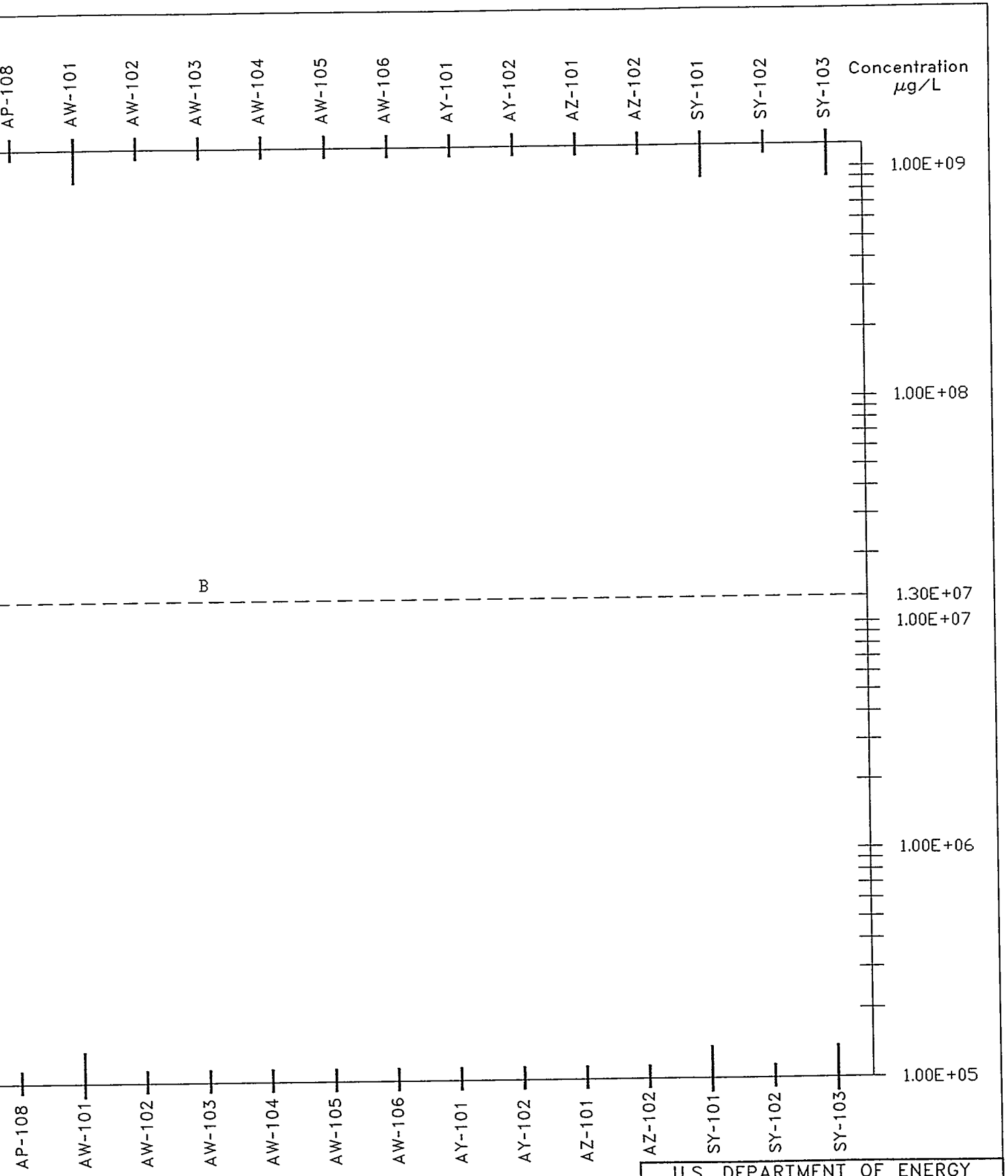
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Tl - Thallium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC91 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+09
1.00E+08
1.3E+07
1.00E+07
1.00E+06
1.00E+05
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□
Most Recent Sample
B Braun
△



TCE Inventory

TRAC

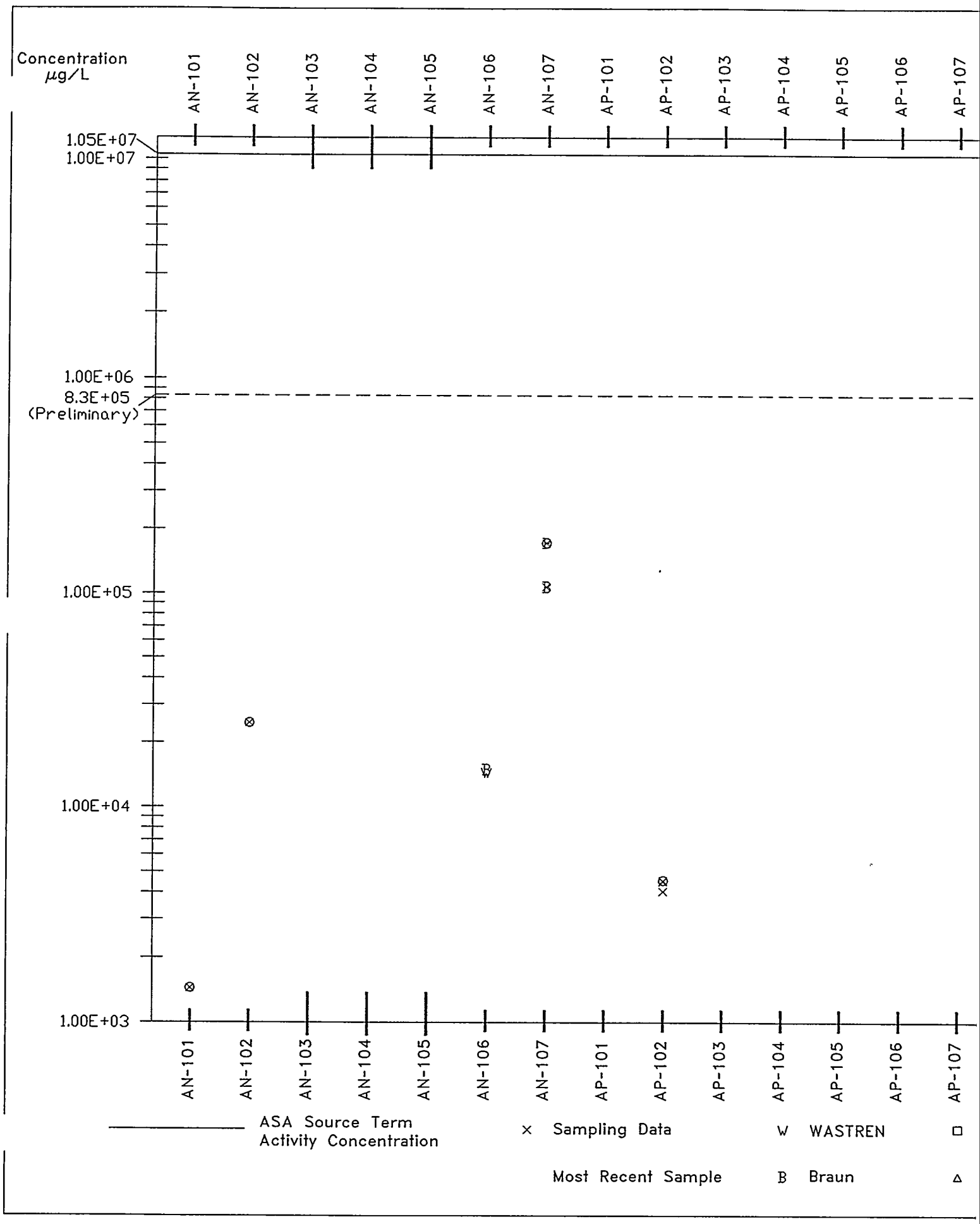
Extented tank lines represent Flamable Gas Watch List Tanks.

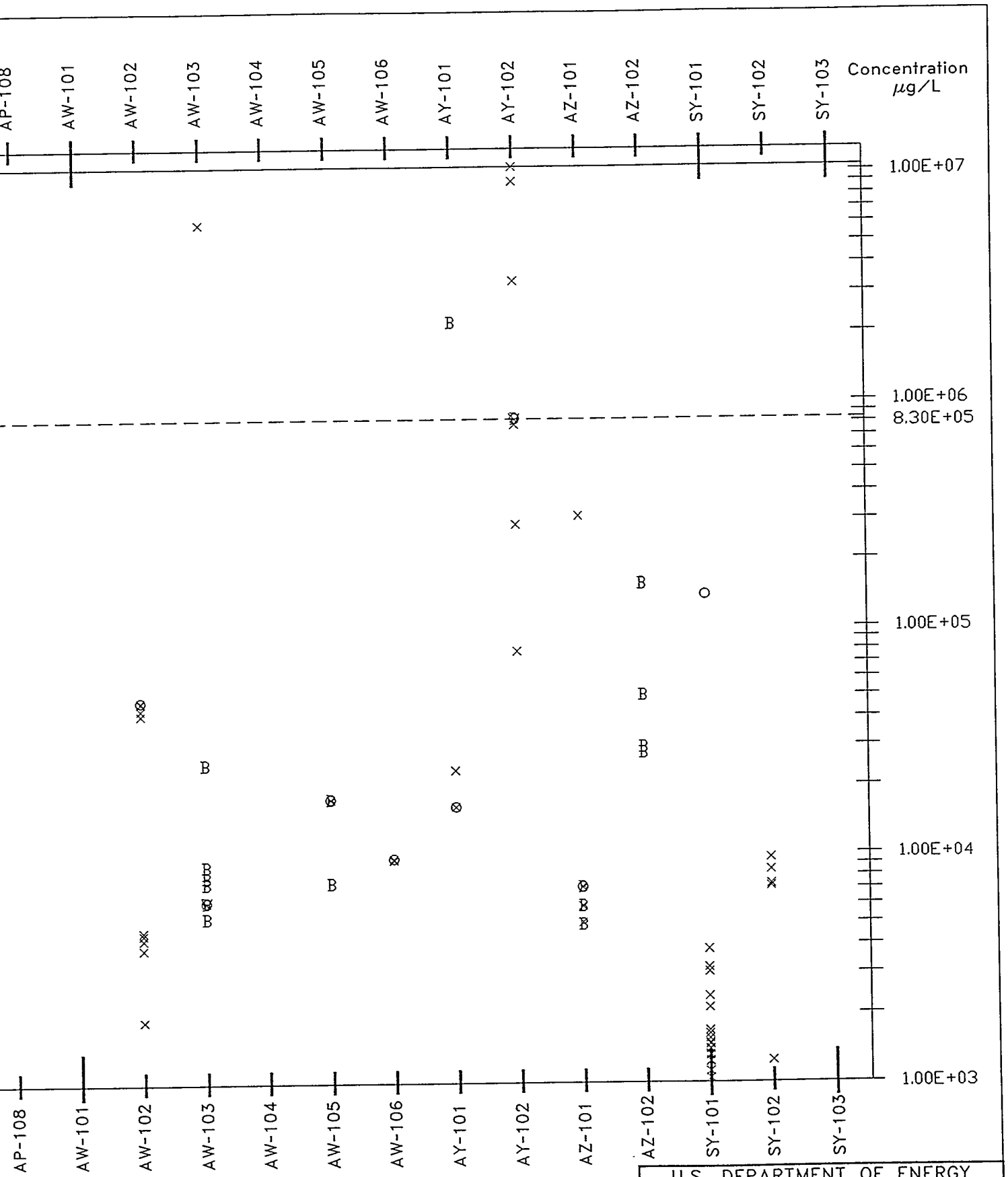
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
Tl - Thallium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC92 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.05E+07
1.00E+07
1.00E+06
8.3E+05
(Preliminary)
1.00E+05
1.00E+04
1.00E+03
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun



TCE Inventory

RAC

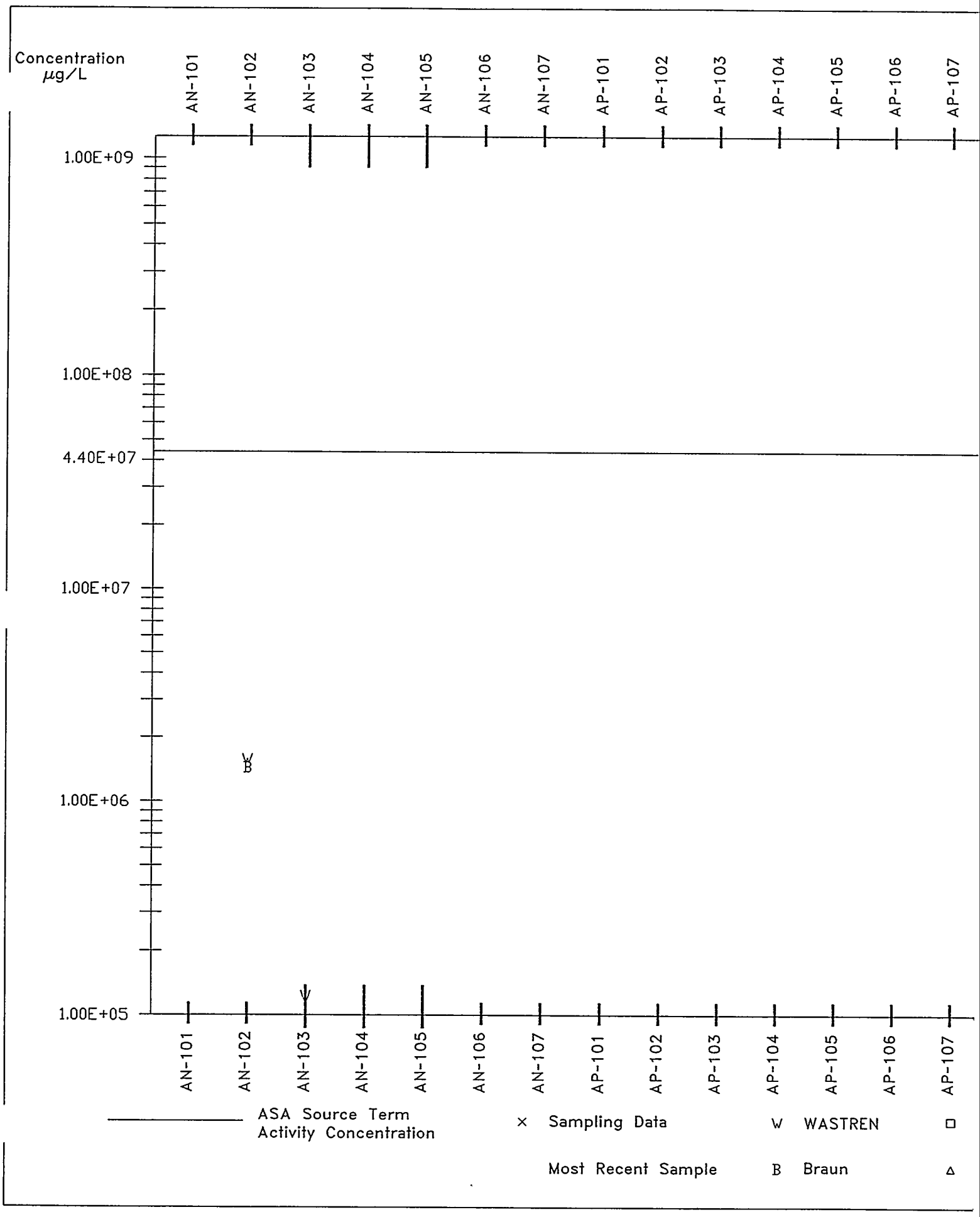
Extented tank lines represent Flamable Gas Watch List Tanks.

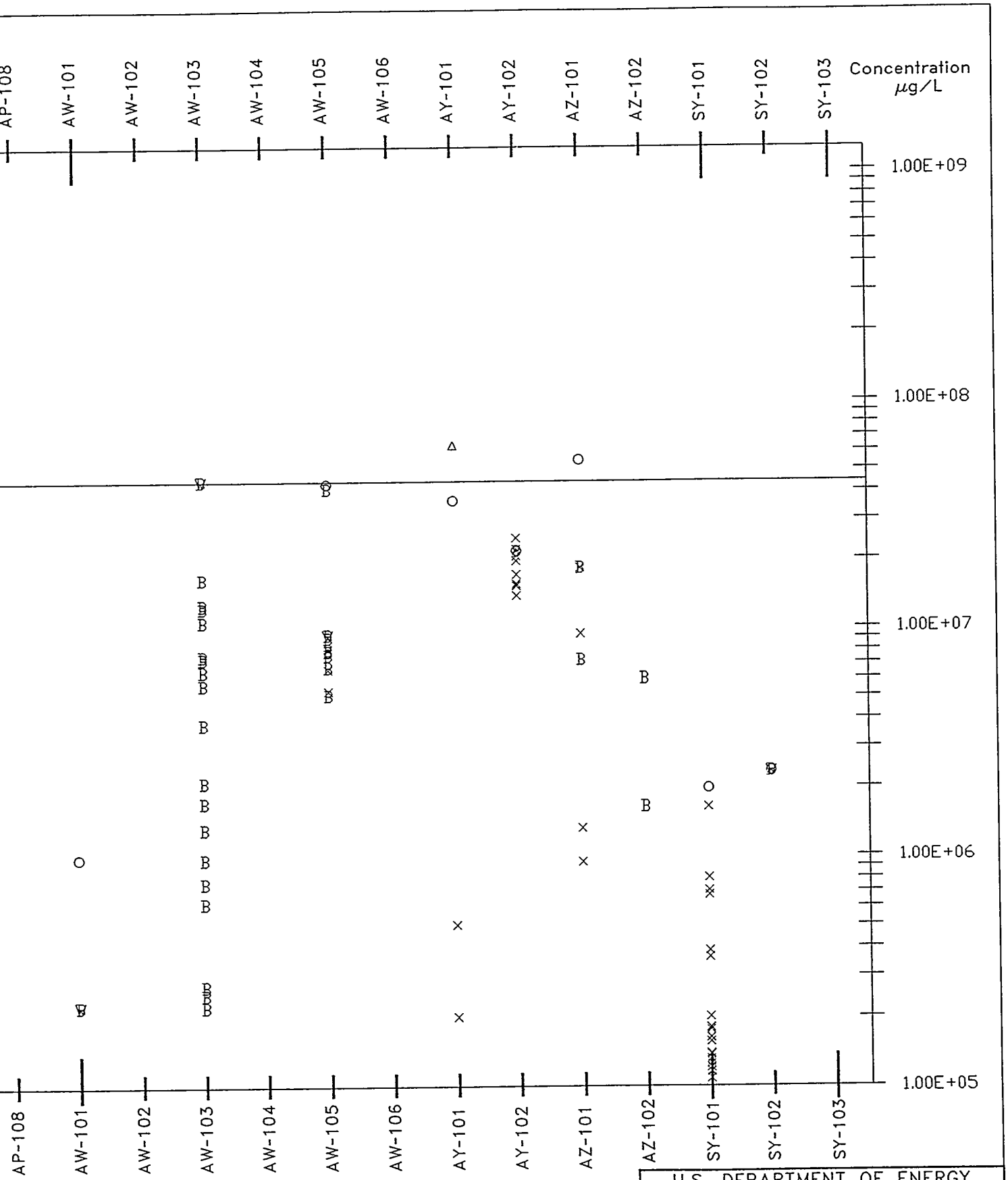
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
U - Uranium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No ES-VAL-CC93 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+09
1.00E+08
4.40E+07
1.00E+07
1.00E+06
1.00E+05
W
B
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□
Most Recent Sample
B Braun
△



TCE Inventory

RAC

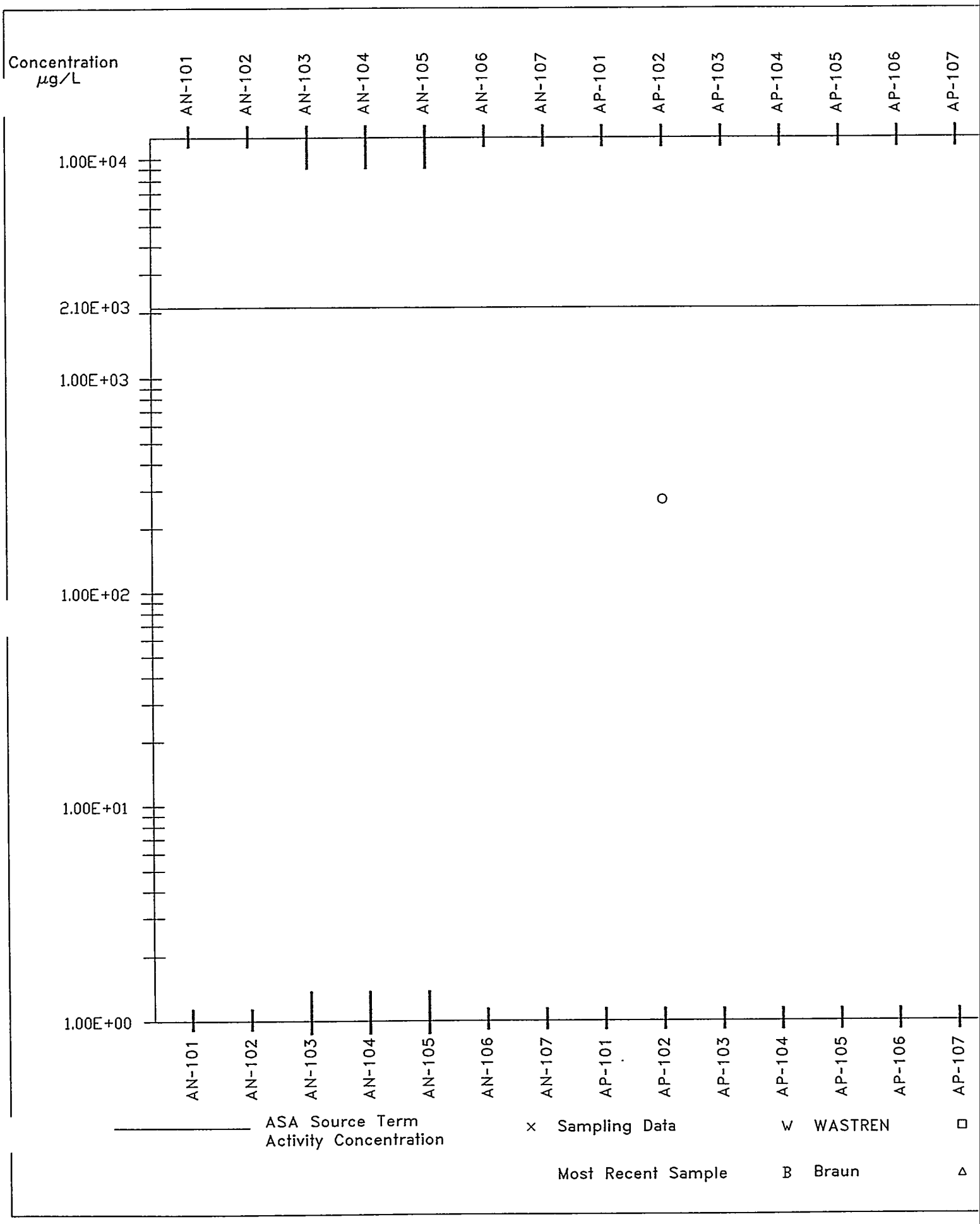
Extented tank lines represent Flamable Gas Watch List Tanks.

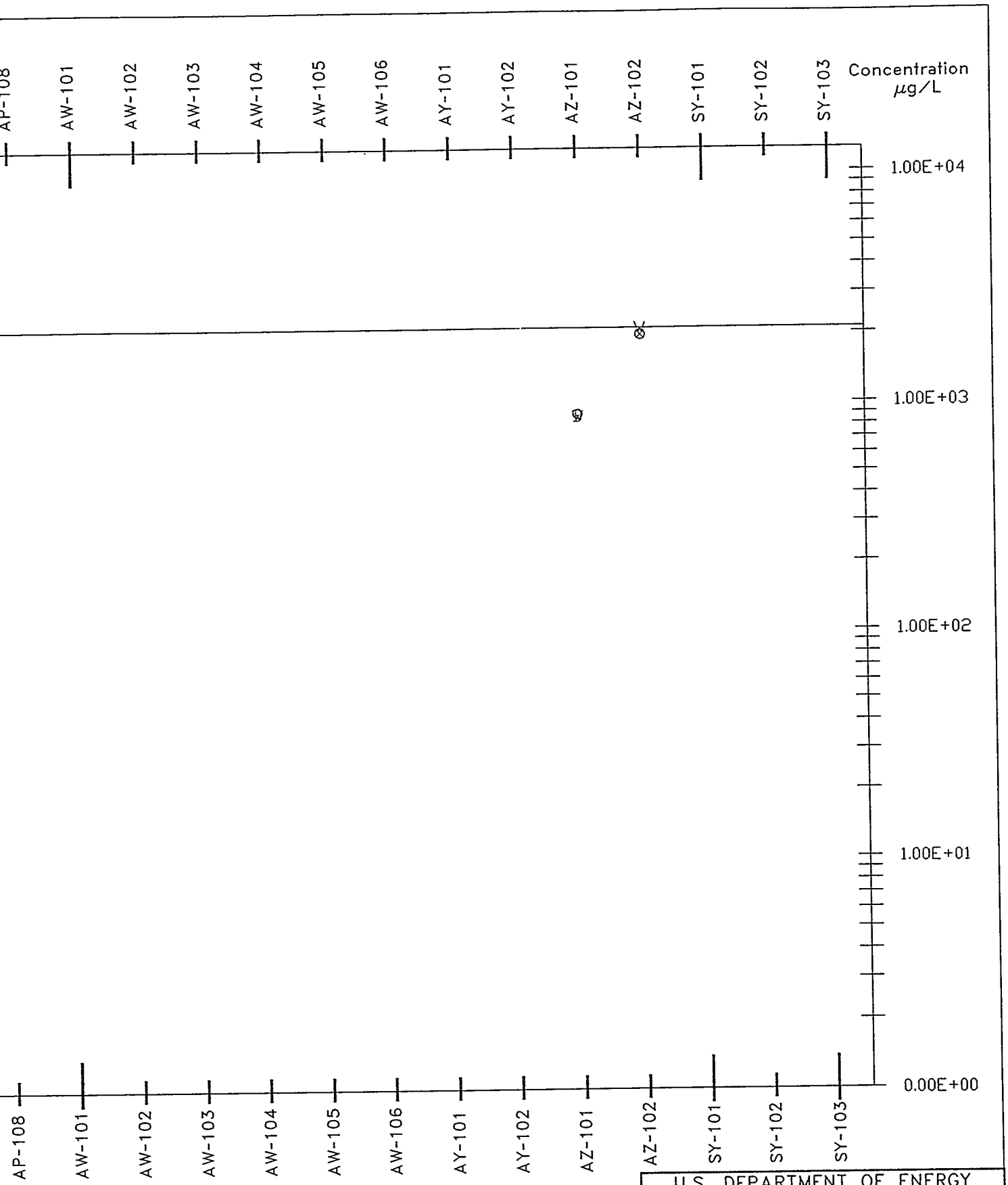
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
U - Uranium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC94 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
1.00E+04
2.10E+03
1.00E+03
1.00E+02
1.00E+01
1.00E+00
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
ASA Source Term
Activity Concentration
Sampling Data
Most Recent Sample
W WASTREN
B Braun



TCE Inventory

RAC

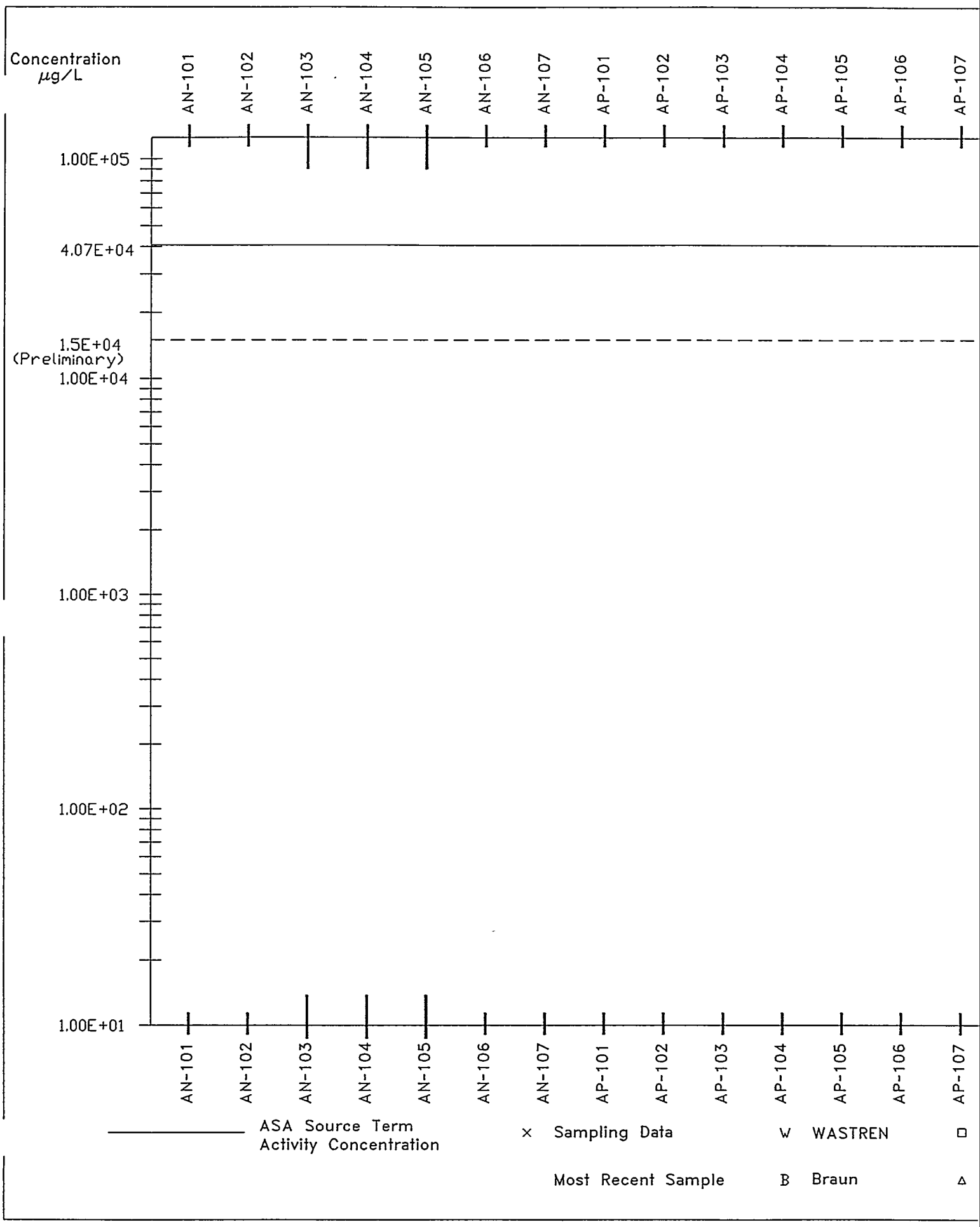
Extented tank lines represent Flamable Gas Watch List Tanks.

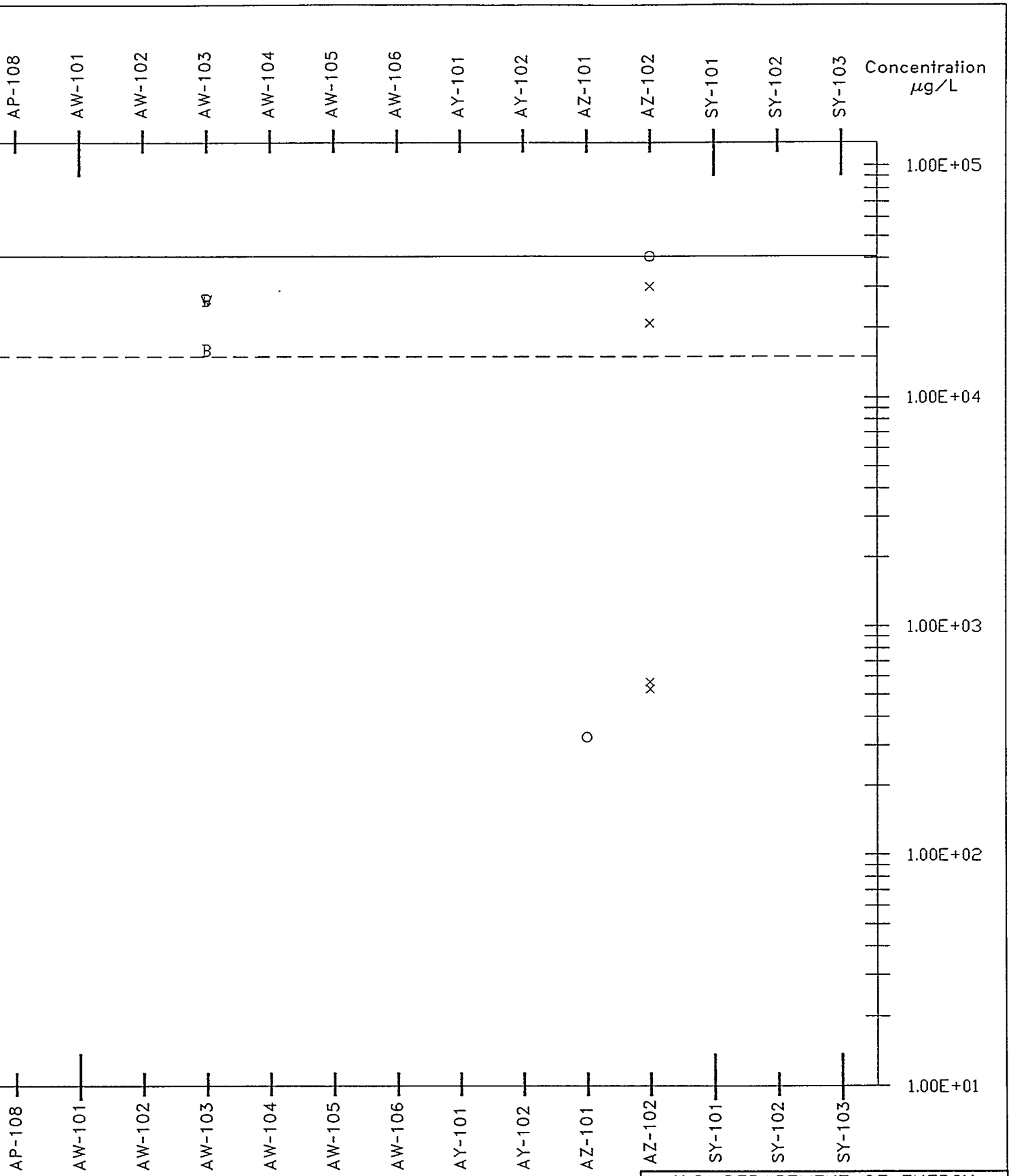
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
V - Vanadium Liquid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC95 | JOB NO. E01595 | Date 4/95


Concentration
µg/L
AN-101
AN-102
AN-103
AN-104
AN-105
AN-106
AN-107
AP-101
AP-102
AP-103
AP-104
AP-105
AP-106
AP-107
1.00E+05
4.07E+04
1.5E+04
(Preliminary)
1.00E+04
1.00E+03
1.00E+02
1.00E+01
ASA Source Term
Activity Concentration
× Sampling Data
W WASTREN
□
Most Recent Sample
B Braun
△



TCE Inventory

RAC

Extented tank lines represent Flamable Gas Watch List Tanks.

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

DOUBLE-SHELL WASTE TANKS
V - Vanadium Solid

PROJECT TANK WASTE SOURCE TERM INVENTORY VALIDATION

Drawing No. ES-VAL-CC96 | JOB NO. E01595 | Date 4/95

Appendices C and D are in Volume II

APPENDIX E

Source Term Concentrations

Table 1: Accident Source Term Activity Concentrations for Accidents Involving Release of Solid or Liquid Tank Waste (Based on the Maximum Sample Activity Concentrations)

Nuclide	Activity Concentration, Bq/L								
	SST Liq	SST Sol	DST Liq[a]	DST Sol[a]	AWF Liq[b]	AWF Sol[b]	SST Flam.[c]	DST Flam.[d]	SST Liq A[e]
^{14}C	1.0E+05	1.2E+05	2.3E+05	1.6E+05	5.8E+04	1.0E+05	0.0E+00	7.4E+04	1.0E+05
^{60}Co	**1.2E+07**	**5.3E+08**	**9.6E+06**	**1.6E+07**	**4.6E+07**	**2.8E+08**	**3.5E+04**	**1.3E+06**	**9.0E+05**
^{79}Se	0.0E+00	1.7E+04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
^{90}Sr	**1.1E+10**	**1.7E+12**	**5.1E+09**	**2.5E+10**	**4.5E+09**	**3.0E+12**	**1.4E+10**	**5.3E+09**	**2.3E+09**
^{90}Y	**1.1E+10**	**1.7E+12**	**5.1E+09**	**2.5E+10**	**4.5E+09**	**3.0E+12**	**1.4E+10**	**5.3E+09**	**2.3E+09**
^{99}Tc	1.7E+07	1.2E+10	1.1E+07	6.2E+07	1.2E+07	2.8E+08	5.4E+05	6.3E+06	1.7E+07
^{106}Ru	3.3E+03	2.4E+05	0.0E+00	0.0E+00	0.0E+00	0.0E+00	4.2E+03	0.0E+00	3.3E+03
^{125}Sb	5.3E+04	2.8E+08	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.3E+05	0.0E+00	5.3E+04
^{129}I	1.0E+04	6.4E+06	2.0E+04	2.0E+04	4.4E+01	4.1E+06	0.0E+00	2.0E+04	1.0E+04
^{134}Cs	2.1E+05	2.6E+06	1.1E+07	1.7E+07	2.4E+04	0.0E+00	4.9E+05	1.7E+07	1.3E+05
^{137}Cs	**2.3E+10**	**7.5E+10**	**6.1E+10**	**6.1E+10**	**1.3E+11**	**9.3E+10**	**2.0E+10**	**6.1E+10**	**2.3E+10**
^{144}Ce	4.3E+01	1.6E+03	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	4.3E+01
^{147}Pm	0.0E+00	0.0E+00	5.7E+07	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
^{154}Eu	**2.7E+09**	**6.6E+09**	**4.8E+07**	**2.5E+08**	**1.6E+08**	**1.5E+10**	**3.3E+08**	**0.0E+00**	**5.1E+07**
^{155}Eu	7.5E+07	6.4E+06	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
^{237}Np	**0.0E+00**	**3.2E+07**	**2.3E+05**	**5.7E+05**	**7.3E+04**	**7.6E+06**	**0.0E+00**	**1.7E+03**	**0.0E+00**
^{238}Pu	**9.3E+04**	**1.9E+08**	**1.8E+06**	**7.2E+07**	**2.8E+03**	**4.3E+07**	**2.2E+06**	**7.1E+05**	**9.3E+04**
^{239}Pu[f]	**3.6E+07**	**4.4E+08**	**4.3E+06**	**1.6E+09**	**1.2E+06**	**4.4E+08**	**5.1E+06**	**1.7E+06**	**5.7E+06**
^{241}Pu	**2.8E+08**	**3.5E+09**	**2.0E+07**	**4.1E+09**	**1.3E+05**	**1.6E+09**	**4.0E+07**	**1.3E+07**	**4.5E+07**
^{241}Am	**3.7E+07**	**3.6E+08**	**3.4E+07**	**2.7E+09**	**5.9E+05**	**1.1E+10**	**3.3E+07**	**1.3E+07**	**8.0E+04**
^{243}Cm	0.00e+00	0.0E+00	1.70e+02	0.0E+00	0.0E+00	3.0E+03	0.0E+00	0.0E+00	0.0E+00
^{244}Cm	**0.0E+00**	**0.0E+00**	**1.3E+05**	**1.1E+07**	**0.0E+00**	**6.5E+07**	**0.0E+00**	**1.3E+04**	**0.0E+00**

Bold indicates radionuclides that ICF KH provided data for.

[a] Double shell tank excluding the Aging Waste Facility (AWF Tanks).

[b] Aging Waste Facility (AWF) Tanks (Tank Farms 241-AY and 241-AZ).

[c] SST Flammable Gas Watchlist Combined Liquid and Solid.

[d] DST Flammable Gas Watch list Combined Liquid and Solid.

[e] SST Liquids excluding 6 non-interim stabilized tanks (C-106, C-107, T-104, U-105, U-107, U-109) and 1 interim stabilized tank (AX-102).

[f] The ^{239}Pu activity concentration also includes ^{240}Pu.

Table 2: Tank Waste Material Toxic Chemical Concentrations

Composites Concentrations (g/L)					
Analyte	SST SOLIDS	SST LIQUIDS	DST SOLIDS	DST LIQUIDS	204-AR LIQUIDS
Ammonia (NH_3)	**1.5**	**1.1**	**6.5**	**7.1**	
Antimony (Sb)	**1.5**	**.037**	**0.005**	**0.16**	
Arsenic (As)	**1.2**	**0.003**	**5.7**	**0.0087**	**0.0002**
Barium (Ba)	**40**	**0.053**	**2.9**	**0.017**	**0.01**
Beryllium (Be)	**.026**	**0.0003**	**0.14**	**0.0017**	**0.00004**
Cadmium (Cd)	**1.7**	**0.05**	**26**	**0.07**	**0.0065**
Calcium (Ca)	**95**	**1.1**	**26**	**1.3**	
Cerium (Ce)	**0.86**	**1.75**	**2.6**	**0.0122**	
Chromium (Cr^{+3})	**69**	**16**	**68**	**0.0**	**0.067**
Cobalt (Co)	**0.54**	**0.00132**	**0.65**	**0.0088**	
Cyanide (Cn)	**16**	**5.3**	**0.47**	**0.12**	
Dysprosium (Dy)	**0.067**	**0.0**	**0.083**	**0.00089**	
Lanthanum (La)	**33**	**0.19**	**30**	**1.0**	
Mercury (Hg)	**20.1**	**0.084**	**0.11**	**0.00015**	**0.00006**
Neodymium (Nd)	**0.11**	**0.14**	**7.0**	**0.0056**	
Oxalate (C_2O_4)	275	0.0	275	0.0	
Selenium (Se)	**3.5**	**0.080**	**0.24**	**0.011**	
Sodium Hydroxide (NaOH)	**230**	**180**	**230**	**202**	
Sodium (Na)	**470**	**250**	**280**	**210**	
Tellurium (Te)	**0.2**	**0.0**	**0.93**	**0.0033**	
Thallium (Tl)	**5.0**	**0.25**	**13**	**0.039**	
Total Organic Compounds (TOC)	75	40	75	40	1.2
Uranium (U)	**284**	**1.4**	**44**	**0.83**	
Vanadium (V)	**0.13**	**0.0041**	**0.015**	**0.0021**	

Bold indicates analytes that ICF KH provided data for.

APPENDIX F

Complete Tank Waste Chemical Constituent List

Complete Tank Waste Chemical Constituent List

Released: November 17, 1994

Summary and assumptions -

1) Chemical constituents on this list may be found reported as an ion or (where applicable) the element.
2) Compounds found in the reports are also given.
3) This is a complete list of all available quantitative characterization data from Hanford Tank waste sample analyses found in the WHC Characterization library and TCD.
4) No radiological constituents or vapor sample results are included on this list.

All Found Tank Waste Chemical Constituents

1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloro-1,2,2-trifluoroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,2,3-Trimethylbenzene
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloroethene
1,2-Dichloroethylene
1,2-Dichloropropane
1,3,5-Trimethylbenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
1-Butanol
1-Nitrocyclohexene
2,2'-Oxybis (1 - chloropropane)
2,2,6-Trimethyloctane
2,2,8-Trimethyldecane
2,2-Dimethyldecane
2,2-Dimethylheptane
2,3,7-Trimethyloctane
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4,6-Trimethyloctane
2,4-Dichlorophenol
2,4-Dimethylphenol
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,5,6-Trimethyldecane
2,6,6-Trimethyloctane
2,6-bis(1,1-Dimethyl)phenol
2,6-bis(1,1-dimethylethyl)-4-methylphenol
2,6-Dibromo-4-nitrophenol
2,6-Dibromophenol

All Found Tank Waste Chemical Constituents

2,6-Dinitrotoluene
2-Butanone
2-Butoxyethanol
2-Chloronaphthalene
2-Chloronitrophenol-d3
2-Chlorophenol
2-Fluoro-4-nitrophenol
2-Fluoronitrophenol
2-Hexanone
2-Methylnaphthalene
2-Methylphenol
2-Nitroaniline
2-Nitrophenol
2-Nitrophenol-d4
3,3'-Dichlorobenzidine
3,3-Dimethylhexane
3-Ethyl-5-methylheptane
3-Methylphenol
3-Nitroaniline
4,6-Dinitro-o-cresol
4-Bromophenylphenyl ether
4-Chloro-3-methylphenol
4-Chloroaniline
4-Chlorophenyl-phenylether
4-Methyl-2-pentanone
4-Methylphenol
4-Nitroaniline
4-Nitrophenol
4-Nitrophenol-d4
6-Ethyl-2-methyl-octane
Acenaphthene
Acenaphthylene
Acetate
Acetic Acid
Acetone
$Al(OH)_3$
Al_2O_3
AlO_2^-
$AlOH^{--}$
Aluminum (Al^{+++})
Ammonia
Ammonium (NH_4^+)
Anorthite
Anthracene
Antimony (Sb)
Arsenic (As)
Barium (Ba^{++})
Benzene
Benzo(a)anthracene

All Found Tank Waste Chemical Constituents

Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(ghi)perylene
Benzo(k)fluoranthene
Benzoic acid
Benzyl alcohol
Beryllium (Be^{++})
bis(2-chloroethoxy) methane
bis(2-chloroethyl) ether
bis(2-chloroisopropyl) ether
bis(2-ethylhexyl) phthalate
bis(3-tertbutyl-4-hydroxy-6-methyl-phenyl) sulfide
Bismuth (Bi^{+++})
Boron (B^{+++})
Bromide (Br^{-})
Bromodichloromethane
Bromoform
Bromomethane
Butanedioic Acid
Butylbenzylphthalate
$C_6H_5O_7^{-}$
$Ca(OH)_2$
Cadmium (Cd^{++})
Calcium (Ca^{++})
Carazole
Carbon (C)
Carbon disulfide
Carbon tetrachloride
Carbonate (CO_3^{-})
$CaSO_4$
$Ce(NO_3)_2$
Cerium (Ce^{+++})
Cesium (Cs)
Chloride (Cl^{-})
Chlorobenzene
Chlorocyclohexene
Chloroethane
Chloroform
Chloromethane
Chromium (Cr^{+++})
Chrysene
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
cis-2-Bromocyclohexanol
Citric Acid
Cobalt (Co)
Copper (Cu)
Cr_2O_3

All Found Tank Waste Chemical Constituents

Cr_2O_7
$CrCl_2$
CrO
CrO_2
CrO_4^-
$CrPO_4$
$Cs(NO_3)_2$
CuO
Cyanide (CN^-)
Cyclohexene
Cyclopentasiloxane
Cyclotetrasiloxane
Cyclotrisiloxane
Decahydro-naphthalene
Decamethlycyclopentasiloxane
Decane
Di-n-butylphosphate (DBP)
Di-n-butylphthalate
Di-n-octylphthalate
Dibenz[a,h]anthracene
Dibenzofuran
Dibromochloromethane
Dichlorocyclohexane
Dichlorohexane
Diethylphthalate
Dimethyl phthalate
Dioctyl adipate
Diphenylamine
Dodecamethylcyclohexasiloxane
Dodecane
Dodecane,4,6-dimethyl
Dysprosium (Dy)
Ethylbenzene
Ethylenediaminetetraacetic Acid (EDTA)
Ethylenediaminetriacetic Acid (ED3A)
Europium
$Fe(CN)_6^{---}$
Fe_2O_3
$FeCl_3*6H_2O$
FeOH
FeOOH
Fluoranthene
Fluorene
Fluoride (F^-)
Gadolinium (Gd)
Glutaric Acid
$Glycolate^-$
Heptadecane
Heptanedioic Acid

All Found Tank Waste Chemical Constituents
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Hexadecane
Hexadecanoic acid (9Cl)
Hexadecanoic acid ester
Hexamethyldisiloxane
Hexanedioic Acid
Hexanoic Acid
Hexavalent Chromium (Cr^{++++++})
Hexone
Hydrogen (H)
Hydroxide (OH^-)
Iminodiacetic Acid (IDA)
Indeno(1,2,3-cd)pyrene
Iodine (I)
Iron (Fe)
Isophorone
Isopropylbenzene
K_2CO_3
K_3UF_7
$KHCO_3$
KNO_3
KOH
Lanthanum (La^{+++})
Lead (Pb^{++})
Lithium (Li^+)
Magnesium (Mg^{++})
Manganese (Mn^{++++})
Mercury (Hg)
Methoxytrimethylsilane
Methylenechloride
$MgCl_2$
MgO
MnO_2
Molybdenum (Mo)
N,N-bis(2-hydroxyethyl)dodecanamide
N-(2-hydroxyethyl) ethylenediaminetriacetic Acid (HEDTA)
N-(2-hydroxyethyl) iminodiacetic Acid (HEIDA)
N-(methyl) ethylenediamine-N,N'-diacetic Acid (MeEDD'A)
N-(methylamine) iminodiacetic Acid (MAIDA)
N-(methyliminocarboxy) ethylene diamine-N-acetic Acid (MICEDA)
n-(trifluoroacetyl)-n,0,0',0
N-[2-(methylidene)ethyl] iminocarboxyacetic Acid (MEICA)
N-nitroso-di-n-dipropylamine
N-nitrosodiphenylamine
n-paraffin hydrocarbons (NPH)

All Found Tank Waste Chemical Constituents

$Na_2B_4O_7*10H_2O$
$Na_2C_2O_4$
$Na_2CO_3(H_2O)$
Na_2CrO^3
Na_2SiO_3
Na_2SO_4
$Na_3PO_4(12H_2O)$
$Na_4Fe(CN)_6$
$NaAlO_2$
NaCl
NaF
$NaNO_2$
$NaNO_3$
$NaNO_4$
NaOH
$NaOOCCH_3$
Naphthalene
Neodymium (Nd)
Neptunium (Np)
Nickel (Ni^{++})
$NiSO_4$
Nitrate (NO_3^-)
Nitrilotriacetic Acid (NTA)
Nitrite (NO_2^-)
Nitrobenzene
Nitrosoiminodiacetic Acid
NO CO
Nonane
Nonanedioic Acid
Octanedioic Acid
Oxalate
Oxalic Acid
Palladium (Pd)
Pentachlorophenol
Pentacosane
Pentadecane
Phenanthrene
Phenol
Phosphate (PO_4^-)
Phosphine Oxide
Phosphite (PO_3^-)
Phosphonic acid, dioctadecyl ester (8CI,9CI)
Phosphorus (P)
Platinum (Pt)
Plutonium (Pu)
Potassium (K^+)
Pyrene
Pyridine

All Found Tank Waste Chemical Constituents

Rare Earths
Rhenium (Re)
Rhodium (Rh)
Ruthenium (Ru)
Samarium (Sm)
Selenium (Se)
SeO_4
Silicon (Si)
Silver (Ag^+)
SiO_2^-
SiO^3
SiO_4
SO_2^-
Sodium (Na^+)
$Sr(NO_3)_2$
SrF_2
Strontium (Sr^{++})
Styrene
Sulfate (SO_4^-)
Sulfur
TAD (Total Acid Demand)
Tantalum (Ta)
Tellurium (Te)
Tetrachloroethene
Tetradecane
Tetrahydrofuran
Thallium (Tl)
Thorium (Th)
TIC (Total Inorganic Carbon)
Tin (Sn)
Titanium (Ti)
TOC (Total Organic Carbon)
Toluene
TC (Total Carbon)
trans-1,3-Dichloropropene
Tri-n-butylphosphate (TBP)
Trichloroethene
Tridecane
Trimethylsilanol
Tungsten (W)
Undecane
Undecanedioic Acid
UP_2O_7
Uranium (U)
Urea, 1,3-diethyl-
Vanadium (V)
Vinyl acetate
Vinyl chloride
Water (H_2O)

All Found Tank Waste Chemical Constituents

WO_4
Xylenes (total)
Yttrium (Y)
Zinc (Zn)
Zirconium (Zr)
$Zr(OH)_4$
ZrO

APPENDIX G

Tank Waste Characterization Sample Analysis Lithium (Li) Information Table

Tank Waste Source Term Inventory Validation Chemical Analyte
Lithium Single and Double Shell Tank Liquid and Solid
Tank Waste Characterization Sample Analysis Information Table
Released: December 9, 1994

Tank	Reported Chemical	Date	Sample #	Density	Reported Value	Reported Unit	Code	Sample State	Source	µg/L
Single-Shell Tank Lithium Solid and Liquid										
U110	Li	12/15/89	89-070/1/2		180	ugm/gm	I	Sludge/Composite	Braun	2.88E+05
U110	Li	11/30/89	89-075		112	ugm/gm	G	Sludge	Braun	1.79E+05
U110	Li	12/4/89	89-082/3/4		93	ugm/gm	I	Sludge/Composite	Braun	1.49E+05
U110	Li	11/29/89	89-070		85	ugm/gm	G	Sludge	Braun	1.36E+05
U110	Li	11/29/89	89-072		39	ugm/gm	G	Sludge	Braun	6.24E+04
U110	Li	11/15/89	89-046		38	ugm/gm	G	Sludge	Braun	6.08E+04
BY102	Li	6/3/91	R-8091	1.41	4.00E+01	ppm	P	supernatant	Raw	5.64E+04
BY109	Li	6/3/91	R-8094	1.4	40	ppm	P	Supernate	Braun	5.60E+04
BY109	Li	6/3/91	R-8094	1.4	4.00E+01	ppm	P	supernatant	Raw	5.60E+04
BY105	Li	6/3/91	R-8092	1.4	3.90E+01	ppm	P	supernatant	Raw	5.46E+04
BY106	Li	6/3/91	R-8093	1.47	36	ppm	P	Supernate	Braun	5.29E+04
BY106	Li	6/3/91	R-8093	1.47	3.60E+01	ppm	P	supernatant	Raw	5.29E+04
BY109	Li	11/20/90	R8084	1.3	4.00E+01	ppm	P	supernatant	Raw	5.20E+04
BY106	Li	11/20/90			4.00E+01	ppm	P	supernatant	Raw	4.40E+04
BY105	Li	11/20/90			3.90E+01	PPM	P	supernatant	Raw	4.29E+04
C109	Li	9/1/92	B08T69		2.20E+01	ug/g	S	DUPLICATE RESULT	TCD	3.52E+04
C109	Li	9/1/92	B08T63		1.80E+01	ug/g	S	PRIMARY RESULT	TCD	2.88E+04
C112	Li	3/1/92	B08DN8	1.6	1.80E+01	ug/g	S	DUPLICATE RESULT	TCD	2.88E+04
BY109	Li	6/3/91			2.86E-02	g/L	P	Supernate	Wastren	2.86E+04
T107	Li	3/1/93	B08VD8	1.42	1.97E+01	ug/g	S	PRIMARY RESULT	TCD	2.80E+04
T107	Li	3/1/93	B08VD8	1.42	1.96E+01	ug/g	S	DUPLICATE RESULT	TCD	2.78E+04
T107	Li	3/1/93	B08VB9	1.19	1.98E+01	ug/g	S	DUPLICATE RESULT	TCD	2.36E+04
T107	Li	3/1/93	B08VB9	1.19	1.97E+01	ug/g	S	PRIMARY RESULT	TCD	2.34E+04
T107	Li	3/1/93	B08VB9	1.19	1.97E+01	ug/g	S	PRIMARY RESULT	TCD	2.34E+04
C112	Li	3/1/92	B08DY1	2	1.09E+01	ug/g	S	PRIMARY RESULT	TCD	2.18E+04
C112	Li	3/1/92	B08DY1	2	1.07E+01	ug/g	S	DUPLICATE RESULT	TCD	2.14E+04
U110	Li	11/10/89	89-043		13	ugm/gm	G	Sludge	Braun	2.08E+04
U110	Li	12/4/89	89-084		13	ugm/gm	G	Sludge	Braun	2.08E+04
C112	Li	3/1/92	B08DY1	2	9.60E+00	ug/g	S	DUPLICATE RESULT	TCD	1.92E+04
C112	Li	3/1/92	B08DY1	2	9.60E+00	ug/g	S	PRIMARY RESULT	TCD	1.92E+04
C112	Li	3/1/92	B08DY1	2	8.90E+00	ug/g	S	PRIMARY RESULT	TCD	1.78E+04
C112	Li	3/1/92	B08DY1	2	8.50E+00	ug/g	S	PRIMARY RESULT	TCD	1.70E+04
C112	Li	3/1/92	B08DY1	2	8.40E+00	ug/g	S	PRIMARY RESULT	TCD	1.68E+04
C112	Li	3/1/92	B08DY1	2	8.20E+00	ug/g	S	DUPLICATE RESULT	TCD	1.64E+04
C112	Li	3/1/92	B08DY1	2	8.20E+00	ug/g	S	DUPLICATE RESULT	TCD	1.64E+04
C112	Li	3/1/92	B08DY1	2	8.20E+00	ug/g	S	DUPLICATE RESULT	TCD	1.64E+04
C112	Li	3/1/92	B08DY1	2	7.50E+00	ug/g	S	PRIMARY RESULT	TCD	1.50E+04
T107	Li	3/1/93	B08V43	1.15	1.30E+01	ug/g	S	PRIMARY RESULT	TCD	1.50E+04
C109	Li	9/1/92	B08T69		9.00E+00	ug/g	S	DUPLICATE RESULT	TCD	1.44E+04
C109	Li	9/1/92	B08T69		9.00E+00	ug/g	S	PRIMARY RESULT	TCD	1.44E+04
C109	Li	9/1/92	B08T16	1.3	1.10E+01	ug/g	S	DUPLICATE RESULT	TCD	1.43E+04
AX102	Li	11/14/88			1.39E-02	g/L	P	Supernate	Wastren	1.39E+04
AX102	Li	11/14/88	RAT-AX102-3		0.002	moles/l	P	Supernate	Braun	1.39E+04
T107	Li	3/1/93	B08V39	1.57	8.79E+00	ug/g	S	PRIMARY RESULT	TCD	1.38E+04
C112	Li	3/1/92	B08DY1	2	6.90E+00	ug/g	S	DUPLICATE RESULT	TCD	1.38E+04
T107	Li	3/1/93	B08V39	1.57	8.75E+00	ug/g	S	DUPLICATE RESULT	TCD	1.37E+04
C112	Li	3/1/92	B08DW5		7.80E+00	ug/g	S	PRIMARY RESULT	TCD	1.25E+04
C112	Li	3/1/92	B08DW5		7.60E+00	ug/g	S	DUPLICATE RESULT	TCD	1.22E+04
T107	Li	3/1/93	B08VD2		7.59E+00	ug/g	S	PRIMARY RESULT	TCD	1.21E+04
C109	Li	9/1/92	B08T17	1.2	1.00E+01	ug/g	S	PRIMARY RESULT	TCD	1.20E+04
C112	Li	3/1/92	B08DW5		7.50E+00	ug/g	S	DUPLICATE RESULT	TCD	1.20E+04
T107	Li	3/1/93	B08VF0	1.38	8.64E+00	ug/g	S	DUPLICATE RESULT	TCD	1.19E+04
T107	Li	3/1/93	B08V43	1.15	9.79E+00	ug/g	S	PRIMARY RESULT	TCD	1.13E+04
T107	Li	3/1/93	B08VF0	1.38	7.88E+00	ug/g	S	PRIMARY RESULT	TCD	1.09E+04
C109	Li	9/1/92	B08T17	1.2	9.00E+00	ug/g	S	DUPLICATE RESULT	TCD	1.08E+04

Tank	Reported Chemical	Date	Sample #	Density	Reported Value	Reported Unit	Code	Sample State	Source	µg/L
C109	Li	9/1/92	B08T17	1.2	9.00E+00	ug/g	S	PRIMARY RESULT	TCD	1.08E+04
T105	Li	5/28/93	B08WT4	2.01	5.32E+00	ug/g	S	DUPLICATE RESULT	TCD	1.07E+04
T107	Li	3/1/93	B08V43	1.15	9.10E+00	ug/g	S	DUPLICATE RESULT	TCD	1.05E+04
C109	Li	9/1/92	B08T16	1.3	8.00E+00	ug/g	S	PRIMARY RESULT	TCD	1.04E+04
T107	Li	3/1/93	B08VD2		6.32E+00	ug/g	S	DUPLICATE RESULT	TCD	1.01E+04
T107	Li	3/1/93	B08V43	1.15	8.64E+00	ug/g	S	PRIMARY RESULT	TCD	9.94E+03
T107	Li	3/1/93	B08V44	1.1	8.95E+00	ug/g	S	PRIMARY RESULT	TCD	9.85E+03
C112	Li	3/1/92	B08DN8	1.6	6.10E+00	ug/g	S	DUPLICATE RESULT	TCD	9.76E+03
C109	Li	9/1/92	B08T17	1.2	8.00E+00	ug/g	S	DUPLICATE RESULT	TCD	9.60E+03
C112	Li	3/1/92	B08DN8	1.6	5.90E+00	ug/g	S	PRIMARY RESULT	TCD	9.44E+03
T107	Li	3/1/93	B08V43	1.15	8.19E+00	ug/g	S	PRIMARY RESULT	TCD	9.42E+03
T107	Li	3/1/93	B08V44	1.1	8.50E+00	ug/g	S	DUPLICATE RESULT	TCD	9.35E+03
T107	Li	3/1/93	B08TZ2	1.25	7.47E+00	ug/g	S	PRIMARY RESULT	TCD	9.34E+03
C112	Li	3/1/92	B08DN8	1.6	5.80E+00	ug/g	S	DUPLICATE RESULT	TCD	9.28E+03
C112	Li	3/1/92	B08DN8	1.6	5.80E+00	ug/g	S	PRIMARY RESULT	TCD	9.28E+03
C109	Li	9/1/92	B08T16	1.3	7.00E+00	ug/g	S	PRIMARY RESULT	TCD	9.10E+03
T107	Li	3/1/93	B08V43	1.15	7.90E+00	ug/g	S	DUPLICATE RESULT	TCD	9.09E+03
T107	Li	3/1/93	B08V43	1.15	7.74E+00	ug/g	S	PRIMARY RESULT	TCD	8.90E+03
T107	Li	3/1/93	B08TZ2	1.25	7.09E+00	ug/g	S	PRIMARY RESULT	TCD	8.86E+03
T107	Li	3/1/93	B08V43	1.15	7.39E+00	ug/g	S	DUPLICATE RESULT	TCD	8.50E+03
C112	Li	3/1/92	B08DT4		5.30E+00	ug/g	S	DUPLICATE RESULT	TCD	8.48E+03
T105	Li	5/28/93	B08WT4	2.01	4.18E+00	ug/g	S	DUPLICATE RESULT	TCD	8.40E+03
T107	Li	3/1/93	B08V43	1.15	7.28E+00	ug/g	S	PRIMARY RESULT	TCD	8.37E+03
T105	Li	5/28/93	B08WT4	2.01	4.11E+00	ug/g	S	DUPLICATE RESULT	TCD	8.26E+03
T105	Li	5/28/93	B08WT4	2.01	4.10E+00	ug/g	S	PRIMARY RESULT	TCD	8.24E+03
T107	Li	3/1/93	B08VD2		5.07E+00	ug/g	S	DUPLICATE RESULT	TCD	8.11E+03
T107	Li	3/1/93	B08V43	1.15	7.03E+00	ug/g	S	DUPLICATE RESULT	TCD	8.08E+03
T107	Li	3/1/93	B08TZ2	1.25	6.46E+00	ug/g	S	DUPLICATE RESULT	TCD	8.08E+03
T107	Li	3/1/93	B08VD9	1.3	6.21E+00	ug/g	S	PRIMARY RESULT	TCD	8.07E+03
T105	Li	5/28/93	B08WT4	2.01	3.99E+00	ug/g	S	DUPLICATE RESULT	TCD	8.02E+03
T105	Li	5/28/93	B08WT4	2.01	3.99E+00	ug/g	S	PRIMARY RESULT	TCD	8.02E+03
T105	Li	5/28/93	B08WT4	2.01	3.96E+00	ug/g	S	PRIMARY RESULT	TCD	7.96E+03
T105	Li	5/28/93	B08WT4	2.01	3.94E+00	ug/g	S	PRIMARY RESULT	TCD	7.92E+03
T107	Li	3/1/93	B08V43	1.15	6.86E+00	ug/g	S	DUPLICATE RESULT	TCD	7.89E+03
C112	Li	3/1/92	B08DM7	1.6	4.90E+00	ug/g	S	PRIMARY RESULT	TCD	7.84E+03
C109	Li	9/1/92	B08T16	1.3	6.00E+00	ug/g	S	DUPLICATE RESULT	TCD	7.80E+03
T107	Li	3/1/93	B08VD2		4.87E+00	ug/g	S	PRIMARY RESULT	TCD	7.79E+03
T107	Li	3/1/93	B08VF0	1.38	5.55E+00	ug/g	S	PRIMARY RESULT	TCD	7.66E+03
T107	Li	3/1/93	B08VD9	1.3	5.80E+00	ug/g	S	DUPLICATE RESULT	TCD	7.54E+03
T107	Li	3/1/93	B08TZ2	1.25	5.65E+00	ug/g	S	PRIMARY RESULT	TCD	7.06E+03
T105	Li	5/28/93	B08WT4	2.01	3.51E+00	ug/g	S	DUPLICATE RESULT	TCD	7.06E+03
C112	Li	3/1/92	B08DM7	1.6	4.40E+00	ug/g	S	DUPLICATE RESULT	TCD	7.04E+03
T107	Li	3/1/93	B08TZ2	1.25	5.59E+00	ug/g	S	PRIMARY RESULT	TCD	6.99E+03
T107	Li	3/1/93	B08TZ2	1.25	5.53E+00	ug/g	S	DUPLICATE RESULT	TCD	6.91E+03
C112	Li	3/1/92	B08DM7	1.6	4.30E+00	ug/g	S	PRIMARY RESULT	TCD	6.88E+03
C112	Li	3/1/92	B08DT4		4.30E+00	ug/g	S	PRIMARY RESULT	TCD	6.88E+03
C112	Li	3/1/92	B08DM7	1.6	4.10E+00	ug/g	S	DUPLICATE RESULT	TCD	6.56E+03
C109	Li	9/1/92	B08T16	1.3	5.00E+00	ug/g	S	DUPLICATE RESULT	TCD	6.50E+03
C109	Li	9/1/92	B08T16	1.3	5.00E+00	ug/g	S	PRIMARY RESULT	TCD	6.50E+03
C109	Li	9/1/92	B08T63		4.00E+00	ug/g	S	DUPLICATE RESULT	TCD	6.40E+03
C109	Li	9/1/92	B08T63		4.00E+00	ug/g	S	PRIMARY RESULT	TCD	6.40E+03
T107	Li	3/1/93	B08TZ2	1.25	5.09E+00	ug/g	S	DUPLICATE RESULT	TCD	6.36E+03
T107	Li	3/1/93	B08VF0	1.38	4.57E+00	ug/g	S	DUPLICATE RESULT	TCD	6.31E+03
C112	Li	3/1/92	B08DM7	1.6	3.90E+00	ug/g	S	DUPLICATE RESULT	TCD	6.24E+03
C109	Li	9/1/92	B08T17	1.2	5.00E+00	ug/g	S	DUPLICATE RESULT	TCD	6.00E+03
T107	Li	3/1/93	B08VB9	1.19	4.98E+00	ug/g	S	DUPLICATE RESULT	TCD	5.93E+03
C112	Li	3/1/92	B08DM7	1.6	3.70E+00	ug/g	S	DUPLICATE RESULT	TCD	5.92E+03

Tank	Reported Chemical	Date	Sample #	Density	Reported Value	Reported Unit	Code	Sample State	Source	µg/L
C112	Li	3/1/92	B08DM7	1.6	3.70E+00	ug/g	S	PRIMARY RESULT	TCD	5.92E+03
T105	Li	10/26/93	RAT-T105-2B	2.01	2.94	ugm/gm	I	Sludge/Composite	Braun	5.91E+03
C112	Li	3/1/92	B08DN6	1.3	4.30E+00	ug/g	S	PRIMARY RESULT	TCD	5.59E+03
T107	Li	3/1/93	B08TZ2	1.25	4.45E+00	ug/g	S	DUPLICATE RESULT	TCD	5.56E+03
T107	Li	3/1/93	B08TZ2	1.25	4.40E+00	ug/g	S	PRIMARY RESULT	TCD	5.50E+03
C112	Li	3/1/92	B08DM7	1.6	3.40E+00	ug/g	S	PRIMARY RESULT	TCD	5.44E+03
T107	Li	3/1/93	B08TZ2	1.25	4.34E+00	ug/g	S	DUPLICATE RESULT	TCD	5.43E+03
T105	Li	5/28/93	B08WT2		4.87E+00	ug/g	L	PRIMARY RESULT	TCD	5.36E+03
T107	Li	3/1/93	B08VR2	1.73	2.97E+00	ug/g	S	PRIMARY RESULT	TCD	5.14E+03
T107	Li	3/1/93	B08VR2	1.73	2.96E+00	ug/g	S	DUPLICATE RESULT	TCD	5.12E+03
C112	Li	3/1/92	B08DN6	1.3	3.80E+00	ug/g	S	DUPLICATE RESULT	TCD	4.94E+03
C112	Li	3/1/92	B08DN6	1.3	3.80E+00	ug/g	S	DUPLICATE RESULT	TCD	4.94E+03
T107	Li	3/1/93	B08VB9	1.19	4.05E+00	ug/g	S	DUPLICATE RESULT	TCD	4.82E+03
C109	Li	9/1/92	B08T17	1.2	4.00E+00	ug/g	S	DUPLICATE RESULT	TCD	4.80E+03
C109	Li	9/1/92	B08T17	1.2	4.00E+00	ug/g	S	PRIMARY RESULT	TCD	4.80E+03
T105	Li	5/28/93	B08WT4	2.01	2.37E+00	ug/g	S	PRIMARY RESULT	TCD	4.76E+03
T107	Li	3/1/93	B08VB9	1.19	3.97E+00	ug/g	S	PRIMARY RESULT	TCD	4.72E+03
C112	Li	3/1/92	B08DN6	1.3	3.60E+00	ug/g	S	PRIMARY RESULT	TCD	4.68E+03
T107	Li	3/1/93	B08TZ3	0.95	4.69E+00	ug/g	S	DUPLICATE RESULT	TCD	4.46E+03
T105	Li	5/28/93	B08WT2		3.87E+00	ug/g	L	DUPLICATE RESULT	TCD	4.26E+03
T105	Li	5/28/93	B08WT2	0.89	4.32E+00	mg/kg	S	DUPLICATE RESULT	TCD	3.84E+03
T107	Li	3/1/93	B08VB9	1.19	3.14E+00	ug/g	S	PRIMARY RESULT	TCD	3.74E+03
T105	Li	5/28/93	B08WT2	0.89	4.16E+00	mg/kg	S	PRIMARY RESULT	TCD	3.70E+03
C109	Li	9/1/92	B08T17	1.2	3.00E+00	ug/g	S	PRIMARY RESULT	TCD	3.60E+03
T107	Li	3/1/93	B08V44	1.1	2.90E+00	ug/g	S	PRIMARY RESULT	TCD	3.19E+03
T107	Li	3/1/93	B08V44	1.1	2.89E+00	ug/g	S	DUPLICATE RESULT	TCD	3.18E+03
T107	Li	3/1/93	B08TZ3	0.95	3.31E+00	ug/g	S	PRIMARY RESULT	TCD	3.14E+03
T107	Li	3/1/93	B08VF0	1.38	1.58E+00	ug/g	S	PRIMARY RESULT	TCD	2.18E+03
T107	Li	3/1/93	B08VF0	1.38	1.57E+00	ug/g	S	DUPLICATE RESULT	TCD	2.17E+03
T107	Li	3/1/93	B08VF0	1.38	1.50E+00	ug/g	S	DUPLICATE RESULT	TCD	2.07E+03
T107	Li	3/1/93	B08VF0	1.38	1.48E+00	ug/g	S	DUPLICATE RESULT	TCD	2.04E+03
T107	Li	3/1/93	B08VF0	1.38	1.39E+00	ug/g	S	PRIMARY RESULT	TCD	1.92E+03
T107	Li	3/1/93	B08VF0	1.38	1.34E+00	ug/g	S	PRIMARY RESULT	TCD	1.85E+03
T107	Li	3/1/93	B08VF0	1.38	1.33E+00	ug/g	S	DUPLICATE RESULT	TCD	1.84E+03
T107	Li	3/1/93	B08VF0	1.38	1.22E+00	ug/g	S	PRIMARY RESULT	TCD	1.68E+03
T107	Li	3/1/93	B08VD2		9.04E-01	ug/g	S	PRIMARY RESULT	TCD	1.45E+03
T107	Li	3/1/93	B08VD2		7.93E-01	ug/g	S	DUPLICATE RESULT	TCD	1.27E+03
T105	Li	5/28/93	B08WT2	0.89	4.11E-01	ug/g	S	PRIMARY RESULT	TCD	3.66E+02
T105	Li	5/28/93	B08WT2	0.89	4.10E-01	ug/g	S	DUPLICATE RESULT	TCD	3.65E+02
Double-Shell Tank Lithium Solid and Liquid										
AW103	Li	1/23/90			0.165	g/L	G	Sludge	Wastren	1.65E+05
AW103	Li	1/23/90	RAT-AW103-1	1.75	0.000094	gm/gm	S	Solids	Braun	1.65E+05
AZ101	Li	9/1/89	RAT-AZ101-4A	1.2	0.0001	mmol/gm	P	Supernate	Braun	8.33E+02
AZ102	Li	Aug 89			9.01E-05	g/L	P	Supernatant	Wastren	9.01E+01
AZ102	Li	9/1/89			1.10E-02	umol/g	P	Supernate	Raw	8.40E+01
AY102	Li	9/30/80		1	8.00E-06	M	P	Supernate	Raw	5.55E+01
SY102	Li	6/30/89		1.52	1.00E-06	mmol/g	L	yellow liquid	Raw	1.06E+01
SY102	Li	10/1/88			9.02E-06	g/L	P	Supernatant	Wastren	9.02E+00
SY102	Li	10/1/88	102-SY-1-2		0.000001	mmol/gm	P	Supernate	Braun	7.64E+00

Note: 1) Assumed density of 1.6 g/ml used for solid, and 1.1 g/ml for liquid to complete µg/L conversion if none given.
2) Information regarding column contents and codes is contained on the summary page included in Appendices C and D.

APPENDIX H

Samples References

Tank 241-A-101

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Tank Farm Samples T-5315," June 25, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8936 101-A," December 17, 1974.

Internal Memorandum, J. E. Horton to D. C. Lini, "Concentration Laboratory Assistance," April 1, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to D. H. Miyasaki, "Analysis of 101-A Tank Residual Sludge," April 9, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. L. Walser to D. G. Harlow, "TK-101-A Sludge Strontium Content," April 29, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to D. H. Miyasaki, "Analysis of Additional Residual Sludge Samples from Tank 101-A," April 30, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, D. F. Shepard to R. L. Walser, "Ninety-Five Percent Upper Limit Strontium Content Sludge in TK-101-A," April 30, 1976.

Internal Memorandum, Battelle Pacific Northwest Laboratories, Kirkland B. Stewart to Robert Zinsli, "The Statistical Analysis of Strontium Content of Sludge in TK-101-A," May 21, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, D. C. Bartholomew to G. Burton, Jr. "Statistical Evaluation of Strontium Content in Tank 101-A Sludge," July 9, 1976.

Internal Memorandum, T. A. Lane to K. G. Carothers, "Hot Boildown of Cross-Site Transfer Waste First Pass Product, Feed and Product Compositions," #60120-79-044 J, March 14, 1979.

Internal Letter, Rockwell International, Author: Manager-Special Analysis, "Analyses of Tank Farm Samples Serial No. T-3970 Tank: 101-A," Date Received: October 2, 1979.

Internal Letter, Rockwell International, Author: Manager-Special Analysis, "Analyses of Tank Farm Samples Serial No. T-3971 Tank: 101-A," Date Received: October 3, 1979.

Internal Letter, H. J. Eding to C. H. Delegard, "Hot" Boildowns of Wastes In Tanks 101-A and 101-AY," #65413-79-170, October 16, 1979.

Internal Letter, Rockwell Hanford Operations, C. H. Delegard to H. J. Eding, "Hot Boildown of Tank 101-A Waste Sample," Document No. 65124-79-005, November 2, 1979.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to M. C. Teats, "101-A Hot Boildown," Document No. 65453-80-241, August 22, 1980.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to M. C. Teats, "Solids in 101-A Waste," Document No. 65453-80-267, September 22, 1980.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to M. C. Teats, "Composition of 101-A Waste," Document No. 65453-80-302; October 13, 1980.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to M. C. Teats, "101-A Waste Sample," Document No. 65453-80-336, November 13, 1980.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to M. C. Teats, "101-A Waste Sample Characteristics," Document No. 65453-80-337, November 17, 1980.

Internal Letter, Rockwell International, M. T. Jansky to J. R. Wetch, "Technitium Content of Hanford Waste," #65453-81-026, January 29, 1981.

Occurrence Report, Rockwell Hanford Operations, Author: W. M. Lindsay, "Radiation Peak in Dry Well 10-01-04 Exceeding the Increase Criterion," March 23, 1981.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to J. S. Schofield, "Pu and Am Analyses of Various Tank Farm Samples," Document No. 65453-81-184, May 26, 1981.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to T. D. Kirkpatrick, "Waste Samples from Tank 101-A (7879 & 7898)," Document No. 65453-84-003," January 3, 1984.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Internal Memorandum, Westinghouse Hanford Company, C. A. Jurgensmeier to H. Babad, "Results of Single-Shell/Double-Shell Data Research," Document No. 28110-PCL91-046, May 30, 1991.

Tank 241-A-102

Internal Memorandum, To: H. C. Rathvon, "Chemical and Radiochemical Analyses of TK-241-A-102 Sludge Data Sheet" May 31, 1963.

Internal Memorandum, D. A. Dodd to J. C. Womack, "Characterization of 102-A Sludge" January 16, 1973.

Internal Memorandum, Author: J. S. Buckingham, "Chemical Composition of Salt Cake Produced in the 242-S Evaporator," ARH-ST-110 A, December 18, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-7252 Tank: 102-A," October 20, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, S. S. Koegler to R. E. Felt, "A and AX Tank Sludge Heat Generation Rates," February 12, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to J. W. Bailey, "Analysis of 102-A Tank Residual Sludge," September 28, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, D. F. Shepard to O. R. Rasmussen, "Ninety-Five Percent Upper Limit Strontium Content in TK-102-A," September 29, 1976.

Internal Memorandum, J. E. Horton to D. C. Lini, "Engineering Assistance," November 1976.

Internal Memorandum, T. A. Lane to K. G. Carothers, "Hot Boildown of Cross-Site Transfer Waste First Pass Product," #60120-79-044 J, March 14, 1979.

Internal Letter, Rockwell International, C. H. Delegard to D. R. Jorgenson, "Hot Boildown of Tank 102-A Waste Sample" #65124-79-170, October 23, 1979.

Internal Memorandum, Rockwell International, Author: Manager, Services, "Analytical Results" December 8, 1979.

Internal Letter, Rockwell International, M. T. Jansky to H. J. Eding, "Hot Boildown of Tank 102-A Liquor," #65124-80-113, March 13, 1980.

Internal Letter, Rockwell International, M. T. Jansky and D. L. Herting to D. E. Bowers and M. C. Teats, "Hot boildown of 102-A Waste Liquor," #65453-80-200, July 17, 1980.

Internal Letter, Rockwell International, M. T. Jansky and D. L. Herting to D. E. Bowers and M. C. Teats, "Hot boildown of Tank 101-AX Waste," #65453-80-201, July 18, 1980.

Internal Letter, Rockwell International, M. T. Jansky to M. C. Teats, "Hot Boildown of Tank 102-A Waste" #65453-80-213, August 4, 1980.

Internal Letter, Rockwell International, M. T. Jansky to M. C. Teats, "Composition of Waste in Tank 102-A," #65453-80-395, December 23, 1980.

Internal Letter, Rockwell International, M. T. Jansky to J. S. Schofield, "Pu and Am Analyses of Various Tank Farm Samples," #65453-81-184, May 26, 1981.

Internal Letter, Rockwell International, R. G. Clark to R. L. Weiss, "I-129 Analytical Data," #65452-86-100, July 14, 1986.

Table, T. S. Vail to J. C. Bergam, "BX-Farm Core Sampling Recoverability," September 23, 1986.

Supporting Document, Author R. L. Weiss, "Data Transmittal Package for 241-A-102 Waste Tank Characterization," SD-RE-TI-201, January 21, 1988.

DSI, V. C. Boyles to R. Weiss, "Analysis Requirements for Tank 241-A-102," March 10, 1989.

Internal Memorandum, Westinghouse Hanford Company, R. L. Weiss to V. C. Boyles, "Analysis of Liquid Sample from Tank 241-A-102," #12712-PCL89-112, May 2, 1989.

Internal Memorandum, Westinghouse Hanford Company, R. L. Weiss to V. C. Boyles, "Analysis of Liquid Sample from Tank 241-A-102," #12712-PCL89-112 Rev.1, May 9, 1989.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Tank 241-A-103

Internal Memorandum, Atlantic Richfield Hanford Co., D. A. Dodd to J. C. Womack, "Tank 103-A Sludge Characterization," December 18, 1972.

Internal Memorandum, Author: J. S. Buckingham, "Chemical Composition of Salt Cake Produced in the 242-S Evaporator," ARH-ST-110 A, December 18, 1974.

Internal Memorandum, Atlantic Richfield Hanford Co., S. S. Koegler to R. E. Felt, "A & AX Tank Sludge Heat Generation Rates," February 12, 1976.

Internal Memorandum, J. E. Horton to D. C. Lini, "Engineering Assistance," January 24, 1977.

Internal Memorandum, Atlantic Richfield Hanford Co., J. E. Horton to J. W. Bailey, "Analysis of 103-A Tank Residual Sludge," January 24, 1977.

Internal Letter, T. A. Lane to K. G. Carothers, "Hot Boildown of Cross-Site Transfer Waste First Pass Product" #60120-79-044 J, March 14, 1979.

Internal Letter, Rockwell Hanford Operations, T. A. Lane to D. R. Jorgenson, "Tank 103-A Hot Boildown" No. 65120-79-123 J, August 2, 1979.

Internal Letter, Rockwell International, Author: Manager Services 222-S Laboratory, "Analytical Results A-103, Sample: T-9951," March 19, 1980.

DSI, To: Harold, "103-A Sample Analysis," March 20, 1980.

Internal Letter, Rockwell International, G. T. Dukelow to Distribution, "Tank Status Change," #65260-80-1183, August 14, 1980.

Internal Memorandum, Rockwell International, J. L. Deichman to J. J. Schreiber, "Removal of Single-Shell Tanks from Active Service," August 18, 1980.

DSI, M. C. T. to Opal or Hank (Vacation Backup), "Soft Sludge Sample Analysis," September 12, 1980.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to M. C. Teats, "Analyses Tank 103-A Waste," No. 65453-80-266, September 22, 1980.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to M. C. Teats, "Solids in Tank 103-A Waste," No. 65453-80-287, October 2, 1980.

Internal Letter, Rockwell International, R. G. Clark to R. L. Weiss, "I-129 Analytical Data," #65452-86-100, July 14, 1986.

Internal Memorandum, T. S. Vail to J. C. Bergam, "BX-Farm Core Sampling Recoverability," September 23, 1986.

DSI, D. R. Groth to File, "Contents of Tank 103-A," May 11, 1987.

Internal Memorandum, Westinghouse Hanford Company, R. L. Weiss to S. L. Lindberg, "Interim Report on Waste Tank Characterization Analysis of Tank 241-A-103," No. 65453-87-118, August 18, 1987.

Internal Memorandum, Westinghouse Hanford Company, G. D. Forehand to S. L. Lindberg, "CERCLA Designation TK-103A," #65960-87-618, August 19, 1987.

Supporting Document, Westinghouse Hanford Company, Author: R. L. Weiss, "Data Transmittal Package for 241-A-103 Waste Tank Characterization," Document No. SD-RE-TI-198, January 8, 1988.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single Shell Tank Waste," #82316-90-032, April 27, 1990.

Tank 241-A-104

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. E. Walser, "Analysis of Tank Farm 104-A Samples, Sample: T-2893" March 25, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to J. C. Womack, "Characterization of Sludge From Tank 104-A," September 4, 1974.

Internal Memorandum, Author: J. S. Buckingham, "Chemical Composition of Salt Cake Produced in the 242-S Evaporator," ARH-ST-110 A, December 18, 1974.

Internal Memorandum, U. S. Dept of Energy to O. J. Elgert "Status of Tank 241-A-104 Contract E(45-1)-2130," July 10, 1975.

Internal Memorandum, U. S. Dept of Energy to O. J. Elgert "Status of Tank 241-A-104 Contract E(45-1)-2130," July 10, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton, J. S. Buckingham to R. E. Van der Cook, "Leaching Strontium from Acid Insoluble PUREX Waste Solids," Document No. 54-6000-030 (10-68), April 22, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, S. S. Koegler to R. E. Felt, "A & AX Tank Sludge Heat Generation Rates," February 12, 1976.

Internal Memorandum, J. W. Bailey to Distribution, "Tank Status Update," #60412-78-0434, October 2, 1978.

Supporting Document, Author: R. L. Weiss, "Data Transmittal Package for 241-A-104 Waste Tank Characterization," No. SD-RE-TI-207, January 21, 1988.

Internal Memorandum, Westinghouse Hanford Company, R. D. Gibby to V. D. Maupin, "High Heat Single-Shell Tanks," #13316-89-042, April 20, 1989.

Tank 241-A-105

Report, Atlantic Richfield Hanford Company, S. J. Beard, P. Hasch, G. Jensen, E. C. Watson, Jr., "PUREX TK-105-A Waste Storage Tank Liner Instability and its Implications on Waste Containment and Control," Document No. ARH-78, October 31, 1967.

Internal Memorandum, Atlantic Richfield Hanford Company, C. M. Walker to C. J. Francis, "Composition & Density of the 105-A Solids," January 12, 1972.

Internal Letter, W. W. Schulz/C. W. Hobbick to C. J. Francis/C. M. Walker, "Composition and Density of the 105-A Solids," Document No. 00198, January 12, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, S. S. Koegler to R. E. Felt, "A And AX Tank Sludge Heat Generation Rates," February 12, 1976.

Report, Rockwell Hanford Operations, Woodward-Clyde Consultants, "An Estimate of Bottom Topography, Volume and Other Conditions in Tank 105 A, Hanford Washington (WCC Project 13974A-0300)," March 24, 1978.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to A. J. DiLiberto, "105-A Vent Sample," Document No. 65453-84-116, April 23, 1984.

Tank 241-A-106

Internal Memorandum, J. P. Duckworth to E. F. Stell, "PUREX 106-A Tank Sludge Monitor and Collecting Sampler," July 17, 1961.

Internal Letter, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Tank Farm Samples: Sample T-5316," July 25, 1974.

Internal Letter, Rockwell International, J. L. Starr to F. M. Jungfleisch, "Analysis of Tank 106-A Sludge," November 10, 1977.

Internal Letter, Rockwell International, Author; Manager Services 222-S Laboratory, "Analytical Results, Sample No. T-4818," October 27, 1979.

Internal Letter, Rockwell International, M. T. Jansky and D. L. Herting to H. J. Eding, "Hot Boildown of Tank 106-A Waste," #65453-080-156, May 23, 1980.

Internal Letter, Rockwell International, G. T. Dukelow to Distribution, "Tank Status Change," Document # 65260-80-1183 August 14, 1980.

Internal Letter, Rockwell International, R. G. Clark to R. L. Weiss, "I-129 Analytical Data," Document No. 65452-86-100, July 14, 1986.

Core Sampling, T. S. Vail to J. C. Bergam, "BX-Farm Core Sampling Recoverability," September 23, 1986.

Supporting Document, R. L. Weiss, "Data Transmittal Package for 2441-A-106 Waste Tank Characterization," Document # SD-RE-TI-200, January 21, 1988.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," Document # 82316-90-032, April 27, 1990.

Tank 241-AN 105

Supporting Document, Rockwell Hanford Operations, E. G. Gratney, "242-A Evaporator/Crystallizer FY'84 Campaign 84-5 Post Run Document," Document No. SD-WM-PE-022, September 1985.

Tank 241-AP-101

Supporting Document, Westinghouse Hanford Company, D. S. De Lorenzo, B. C. Simpson, "Tank Characterization Report for Double-Shell Tank 241-AP-101," Document No. WHC-SD-WM-ER-357 Rev.0, August 1994.

Tank 241-AP-102

Supporting Document, Westinghouse Hanford Company, D. S. De Lorenzo, B. C. Simpson, "Tank Characterization Report for Double-Shell Tank 241-AP-102," Document No. WHC-SD-WM-ER-358 Rev.0, August 1994.

Tank 241-AP-103

Supporting Document, Westinghouse Hanford Company, D. S. De Lorenzo, B. C. Simpson, "Tank Characterization Report for Double-Shell Tank 241-AP-103," Document No. WHC-SD-WM-ER-359 Rev.0, July 1994.

Tank 241-AP-105

Supporting Document, Westinghouse Hanford Company, D. S. De Lorenzo, B. C. Simpson, "Tank Characterization Report for Double-Shell Tank 241-AP-105," Document No. WHC-SD-WM-ER-360 Rev.0, August 1994.

Tank 241-AP-106

Supporting Document, Westinghouse Hanford Company, D. S. De Lorenzo, B. C. Simpson, "Tank Characterization Report for Double-Shell Tank 241-AP-106," Document No. WHC-SD-WM-ER-361 Rev.0, August 1994.

Tank 241-AP-107

Supporting Document, Westinghouse Hanford Company, D. S. De Lorenzo, B. C. Simpson, "Tank Characterization Report for Double-Shell Tank 241-AP-107," Document No. WHC-SD-WM-ER-362 Rev.0, August 1994.

Tank 241-AW-101

Internal Letter, Rockwell International, R. Maffeo to M. C. Teats, "Analysis of 101-AW BM's. Two ft. below surface. Serial No. T-1048," Document No. 12510-81-368, December 30, 1981.

Internal Letter, Rockwell International, R. Maffeo to M. C. Teats, "Analysis of 101-AW BM's. Six ft. below surface. Serial No. T-1049," Document No. 12510-81-369, December 30, 1981.

Internal Letter, Rockwell International, M. T. Jansky to N. L. Pontius, "Feeds for 242A Evaporator Run 84-4," Document No.65453-84-092, April 3, 1984.

Internal Letter, Rockwell International, M. T. Jansky to N. L. Pontius, "Additional Laboratory Support for Run 84-4," Document No. 65453-84-098, April 6, 1984.

Internal Letter, Rockwell International, M. T. Jansky to N. L. Pontius, "Viscosity Versus Temperature for Samples from Tank 101AW," Document No. 65453-84-141, June 1, 1984.

Report Analysis, "General Tank Information for Tank 101-AW," November 09, 1984.

Internal Letter, Rockwell International, B. M. Mauss to E. G. Gratny, "Chemical Compositions of 102-AY, 101-AW, 105-AN, and 104-AW," Document No. 65453-84-348, November 9, 1984.

Internal Letter, Rockwell International, M. T. Jansky to D. M. Tulberg, "Chemical Composition of Tank 101-AW Waste," Document No. 65453-84-356, November 20, 1984.

Supporting Document, Rockwell Hanford Operations, E. G. Gratney, "242-A Evaporator/Crystallizer FY'84 Campaign 84-5 Post Run Document," Document No. SD-WM-PE-022, September 1985.

Internal Letter, Rockwell International, B. M. Mauss to R. T. Kimura, "242-A Evaporator Campaign 86-1: Laboratory Analyses," Document No. 65453-86-023, February 20, 1986.

Internal Letter, Rockwell International, B. M. Mauss to R. T. Kimura, "86-3 Evaporator Campaign: Laboratory Analyses Data," Document No. 65453-86-060, April 29, 1986.

Internal Letter, Rockwell International, B. M. Mauss to R. T. Kimura, "86-5 Evaporator Campaign: Laboratory Analyses of Samples," Document No. 65453-86-114, September 18, 1986.

Internal Letter, Rockwell International, D. E. McKenney to L. C. Brown, "Double-Shell Slurry Feed Storage in Tank AW-101," Document No. 65611-87-009, January 20, 1987.

Internal Memorandum, Westinghouse Hanford Company, W. R. Richmond to D. R. Bratzel, "Analysis of 101-AW Heel Samples," Document No. 65641-87-024, February 12, 1987.

Internal Memorandum, Westinghouse Hanford Company, R. L. Weiss to W. G. Richmond, "Analysis of 101-AW Heel Samples," Document No. 65453-87-042, March 26, 1987.

Internal Memorandum, Westinghouse Hanford Company, R. L. Weiss to W. G. Richmond, "Results of Analysis of Tank 241-AW-101 Heel Samples," Document No. 65453-87-105, July 21, 1987.

DSI, Leela Sasaki to Joe Mollusky, "DSSF Samples from Tank 101-AW," November 17, 1988.

DSI, Leela Sasaki to Joe Mollusky, "DSSF Samples from Tank 101-AW," November 22, 1988.

Supporting Document, Rockwell Hanford Operations, N. L. Pontious, "242-A Evaporator/Crystallizer FY 1985 Campaign 85-3 Post-Run Document," Document No. SD-WM-PE-023, September 4, 1992.

Supporting Document, Westinghouse Hanford Company, T. L. Welsh, "Tank 241-AW-101 Characterization Results," Document No. WHC-SD-WM-TRP-055 Rev. 0, December 1991.

Internal Memorandum, Westinghouse Hanford Company, D. W. Reberger to J. S. Schofield, "Corrective Actions for Tank 101-AW Level Fluctuation," Document No. 7C245-92-066, October 8, 1992.

Internal Memorandum, Westinghouse Hanford Company, S. A. Wood to D. D. Stepnewski, "Fathoms Estimated of Hydrogen Concentrations Resulting from a Postulated Gas Release Event in Tank 101-AW (Task WCA-93-021)," Document No. 23230-93-SAW-004, March 11, 1993.

CC: Mail, Gerald D. Johnson to Howard R. Brager, "Data Collection Needs for Safety Analyses," March 3, 1993.

Tank 241-AW-102

Internal Letter, Rockwell International, M. T. Jansky to T. B. Veneziano, "102 AW Powder," Document No. 65453-81-034, February 4, 1981.

Report, "Sample Status Report for T1549 102-AW A-FD," March 20, 1982.

Report, "Sample Status Report for T1562 102-AW A-FD," March 22, 1982.

Report, "Sample Status Report for T15862 102-AW A-FD," March 26, 1982.

Internal Letter, Rockwell International, M. T. Jansky to M. C. Teats, "Tank 102AW Waste Sample," Document No. 65453-82-400, November 4, 1982.

Internal Letter, Rockwell International, M. T. Jansky to P. J. Certa, "Hot Boildown of 102AW Feed, 10/11/82," Document No. 65453-82-436, December 7, 1982.

Internal Letter, Rockwell International, M. T. Jansky to P. J. Certa, "102AW Feed for Run #83-3," Document No. 65453-83-024, January 24, 1983.

Internal Letter, Rockwell International, M. T. Jansky, "Corrected Analytical Data for Evaporator Feed(Tank 102AW), Run #83-3," Document No. 65453-83-034, February 4, 1983.

Internal Letter, Rockwell International, M. T. Jansky to M. I. Fineman, "Additional Boildown Data for Evaporator Run 83-4," Document No. 65453-83-096, April 1, 1983.

Internal Letter, Rockwell International, M. T. Jansky to P. J. Certa, "Tank 102AW Samples: R5001 and R5002," Document No. 65453-83-102, April 7, 1983.

Internal Letter, Rockwell International, M. T. Jansky to P. J. Certa, "Customer Waste Sample from Tank 102AW (Sample #R6875)," Document No. 65453-83-207, August 18, 1983.

Internal Letter, Rockwell International, M. T. Jansky to E. G. Gratny, "Laboratory Results on Customer Waste 242A Evaporator Feed Samples, Run 83-6," Document No. 65453-83-242, September 22, 1983.

Internal Letter, Rockwell International, M. T. Jansky to E. G. Gratny, "Laboratory Data For Evaporator Run 84-2," Document No. 65453-83-299, November 28, 1983.

Internal Letter, Rockwell International, M. T. Jansky to N. L. Pontious "Laboratory Support for Run 84-4," Document No. 65453-84-115, April 23, 1984.

Internal Letter, Rockwell International, M. T. Jansky to P. J. Certa, "Additional Laboratory Support for Run 84-3," Document No. 65453-84-117, April 23, 1984.

Internal Letter, Rockwell International, B. M. Mauss/M. T. Jansky to M. G. Kelly, "Particle Size Distribution of 102-AW Laboratory Boildown Products," Document No. 65458-84-330, October 19, 1984.

Internal Letter, Rockwell International, B. M. Mauss to E. G. Gratny, "Chemical and Laboratory Analysis of Feed and Product Samples From Evaporator Run 84-5," Document No. SD-WM-PE-022, November 9, 1984.

Internal Letter, Rockwell International, B. M. Mauss to N. L. Pontius, "242-A Evaporator Run 85-1: Laboratory Results and Chemical Analyses," Document No. WHC-IP-0711, January 16, 1985.

Internal Letter, Rockwell International, B. M. Mauss/M. T. Jansky to E. G. Gratny/N. L. Pontious, "102-AW Laboratory Boildowns in Support of Evaporator Run 84-5," Document No. 65453-85-013, January 18, 1985.

Internal Letter, Rockwell International, B. M. Mauss to N. L. Pontious, "242-A Evaporator Campaign 85-3: Laboratory Results," Document No. 65453-85-160, August 13, 1985.

Internal Letter, Rockwell International, B. M. Mauss to N. L. Pontious, "85-4 Campaign: Laboratory Results Supporting the 242-A Evaporator," Document No. 65453-86-035, March 21, 1986.

Internal Letter, Rockwell International, B. M. Mauss to M. G. Kelly, "The 86-2 Evaporator Campaign: Laboratory Results on the Production of Double-Shell Slurry," Document No. 65453-85-038, March 28, 1986.

Internal Letter, Rockwell International, B. M. Mauss to R. T. Kimura, "86-3 Evaporator Campaign: Laboratory Analyses Data," Document No. 65453-86-060, April 29, 1986.

Report, "Sample Status Report for T 8435," April 20, 1988.

Report, "General Tank Information for Tank 102 AW; Sample No. T 8435," July 13, 1988.

Report, Karl N. Pool, "Data Validation for High Level RCRA/CERCLA Radiochemcial Analyses: Appendix B," Document No. WHC-CM-5-3, February 1, 1991.

Supporting Document, Rockwell International, P. J. Certa, "242-A Evaporator/Crystallizer FY 84 Campaign Run 84-3 Post Run Document," Document No. SD-WM-PE-018, September 4, 1992.

Internal Letter, Rockwell International, M. T. Jansky to E. G. Gratny, "Laboratory Data for Evaporator Run 84-2," Document No. 65453-83-299, November 28, 1993.

Supporting Data, Westinghouse Hanford Company, "Sample Management and Administration," Document No. WHC-CM-5-3, September 1990.

Internal Memorandum, K. B. Wehner to Elivs Q. Le, "Semi-Volatile Analytical Results-T831," May 25, 1994.

Supporting Document, Westinghouse Hanford Company, A. T. DiCenso, B. C. Simpson, "Tank Characterization of Report for Double-Shell Tank 241-AW-102," Document No. WHC-SW-WM-ER-363 Rev. 0 September 1994.

Tank 241-AW-103

Internal Letter, Rockwell International, M. T. Jansky to M. C. Teats, "Samples form Tank 103AW," Document No. 65453-83-094, March 31, 1983.

Internal Letter, Rockwell International, M. T. Jansky to D. M.

Internal Letter, Rockwell International, M. T. Jansky to D. M. Tulberg, "Solids in Tank 103AW," Document No. 65453-83-149, May 24, 1983.

Internal Memorandum, Rockwell International, R. Wilson to K. Paterson, "X-Ray Diffraction Analysis," December 8, 1983.

Internal Letter, Rockwell International, J. R. Jewett to D. M. Tulberg, "Analysis of TK-103 AW Samples," Document No. 65453-84-187, August 1, 1984.

Report Analysis, "General Tank Information for Tank 103-AW, August 7, 1985.

Internal Letter, Rockwell International, B. M. Mauss to V. L. Hunter, "Water Samples from 103-AW and 105-AW Hose Bibs," Document No. 65453-86-012, January 23, 1986.

Internal Letter, Rockwell International, B. M. Mauss to N. L. Pontious, "85-4 Campaign: Laboratory Results Supporting the 242-A Evaporator," Document No. 65453-86-035, March 21, 1986.

DSI, Beth Conrad to Jeff Allison, "CRW Sludge Levels end of FY March 26, 1986.

Report Analysis, "General Tank Information for Tank 103 AW," August 7, 1985.

DSI, A. C. Coroneos, "TRU Concentration of 103-AW Supernatant Sample," June 24, 1988.

Report Analysis, "General Tank Information for Tank 103 AW," June 24, 1986.

DSI, A. C. Coroneos, "Status of the Investigation of High TRU in NCRW," July 29, 1988.

Internal Memorandum, Westinghouse Hanford Company, M. S. Bensky to J. S. Lee, "Request for Core Sampling at Tank 103-AW," Document No. 13316-88-006, December 15, 1988.

Internal Memorandum, Westinghouse Hanford Company, D. L. Herting to D. W. Bergman, "Analysis of Initial Dip Samples from Tank 103-AW," Document No. 12712-PCL88-046, December 27, 1988.

Memorandum, J. C. Biagini, "Core Sampling of Tank 241-AW-103," December 29, 1988.

DSI, M. S. Bensky to A. J. DeLiberto, "Equivalent to 54-3000-101(59-59)," January 11, 1989.

Memorandum, J. C. Biagini, "Resampling of Segments 4 and 5 (241-AW-103)," Document No. 89-017.

DSI, T. M. Hohl to J. N. Appel, "Ammonia Concentrations in 103 and 105 AW Sludges," February 24, 1989.

Memorandum, D. L. Herting/R. L. Weiss from D. D. Wanner, "Tank 103-AW Core Sample," February 24, 1989.

Report, Patterson, "Sample Status Report for R 4684," March 14, 1989.

Report, Patterson, "Sample Status Report for R 4685," March 14, 1989.

Report, Patterson, "Sample Status Report for R 4695," March 14, 1989.

Report, Patterson, "Sample Status Report for R 4705," March 14, 1989.

Report Analysis, "General Tank Information for Tank 103 AW," May 5, 1989.

Internal Memorandum, Westinghouse Hanford Company, D. L. Herting to D. W. Bergman, "Analysis of Initial Dip Samples from Tank 103-AW," Document No. 12712-PCL89-113, May 5, 1989.

Letter, Westinghouse Hanford Company, D.D. Wodrich to M. E. Peterson, "Tank 103-AW Core Sample," Document No. 8952743, May 24, 1989.

Internal Memorandum, Westinghouse Hanford Company, D. A. Reynolds to D. M. Nguyen, "Washing Fluoride from Neutralized Cladding Removal Waste," Document No. 13314-89-047, May 25, 1989.

Internal Memorandum, Westinghouse Hanford Company, D. D. Wanner to D. L. Herting/R. L. Weiss, "Tank 103-AW Core Sample," Document No. 13316-89-043, May 31, 1989.

DSI, J. P. Mollusky to R. L. Weiss, "Tank 103-AW Core Sample Analysis," September 5, 1989.

Report, "Sample Status Report for R 5759," September 18, 1989.

Report, "Sample Status Report for R 5756," September 18, 1989.

DSI, J. P. Mollusky to D. W. Bergmann, "Tank 103-AW Dip Samples," May 31, 1989.

Report, Weiss, "Sample Status Report," January 29, 1990.

Internal Memorandum, R. L. Weiss to A. J. DiLiberto, "January 1989 Core Sample From Tank 241-AW-103 Process Chemistry Laboratories Efforts," Document No. 12712-PCL90-039, February 22, 1990.

Letter, Battelle, M. E. Peterson to A. J. DiLiberto/L. M. Sasaki, "Completion of the Characterization of Waste from DST 103-AW," March 9, 1990.

Report, Weiss, "Sample Status Report," September 12, 1990.

Report, Weiss, "Sample Status Report," September 13, 1990.

Report Analysis, "General Tank Information for Tank 103-AW," September 13, 1990.

Report, Westinghouse Hanford Company, J. M. Tingey, R. D. Scheele, M. E. Peterson, M. R. Elmore, "Physical and Rheological Characterization of Waste from Double-Shell Tank 103-AW," Document No. 9004302, September 1990.

Report, Westinghouse Hanford Company, J. M. Tingey, R. D. Scheele, M. E. Peterson, M. R. Elmore, "Characterization of Waste From Double-Shell Tank 103-AW," Document No. 9004084, September 1990.

Internal Memorandum, Westinghouse Hanford Company, C. A. Jurgensmeier to H. Babad, "Results for Single-Shell/Double-Shell Data Research," May 30, 1991.

Tank 241-AW-104

Internal Letter, Rockwell International, D. L. Herting to D. R. Groth, "Analyses of Samples from Tank 107-AN and 104-AW," Document No.65453-80-298, October 10, 1980.

Internal Letter, Rockwell International, M. T. Jansky and D. L. Herting to J. Scofield, "Scrapings from 107AN and 104AW," Document No. 65453-80-375, December 12, 1980.

Internal Letter, Rockwell International, M. T. Jansky/S. G. Metcalf to J.R. Wetch, "Complexed Liquor Analysis and Thermal Degradation of Complexants," Document No. 65453-82-345, September 20, 1982.

Internal Letter, Rockwell International, B. M. Mauss to E. G. Gratny, Chemical Compositions of 102-AY, 101-AW, 105-AN, and 104-AW," Document No. 65453-84-348, November 9, 1984.

Internal Letter, Rockwell International, B. M. Mauss to N. L. Pontious, "242-A Evaporator Run 85-1: Laboratory Results and Chemical Analyses," Document No. 65453-85-010, January 16, 1985.

Supporting Document, Rockwell Hanford Operations, P. J. Certa, 242-A Evaporator/ Crystallizer FY 84 Campaign Run 84-3 Post Run Document," Document No. SD-WM-PE-018, July 25, 1985.

Supporting Document, Rockwell Hanford Operations, E. G. Gratney, "242-A Evaporator/Crystallizer FY'84 Campaign 84-5 Post Run Document," Document No. SD-WM-PE-022, September 1985.

Internal Letter, Rockwell International, B. M. Mauss to R. T. Kimura, "86-3 Evaporator Campaign: Laboratory Analyses Data," Document No. 65453-86-060, April 29, 1986.

Tank 241-AW-105

Record, "Tank 105-AW Transfer History," July 1980.

Internal Letter, Rockwell International, M. T. Jansky/S. G. Metcalf to J. R. Wetch, "Complexed Liquor Analysis and Thermal Degradation of Complexants," Document No. 65453-82-345, September 20, 1982.

Internal Letter, Rockwell International, M. T. Jansky to D. M. Tulberg, "Mixing of Wastes: 103AW and Synthetic Decladding Waste," Document No. 65458-83-106, April 11, 1983.

Internal Letter, Rockwell International, M. T. Jansky to E. G. Gratny, "Laboratory Support for Upcoming 242-A Evaporator Campaign Run...," Document No. 65453-84-134, May 10, 1984.

Internal Memorandum, Dean Tulberg to Dan Herting, October 10, 1984.

Internal Letter, Rockwell International, D. L. Herting to D. M. Tulberg, "Analysis of Neutralized Coating Removal Waste Samples from Tank 103-AW," Document No. 65453-84-359, November 30, 1984.

Internal Letter, Rockwell International, B. M. Mauss to E. G. Gratny/N. L. Pontius, "102-AW Laboratory Boildowns in Support of Evaporator Run 84-5," Document No. 65453-85-013, January 18, 1985.

Internal Letter, Rockwell International, B. M. Mauss to R. A. Kaldor, "Chemical Analysis of 105-AW Sample," Document No. 65453-85-115, June 10, 1985.

Supporting Document, Rockwell Hanford Operations, P. J. Certa, "242-A Evaporator/ Crystallizer FY 84 Campaign Run 84-3 Post Run Document, Document No. SD-WM-PE-018, July 25, 1985,

Internal Letter, Rockwell International, D. L. Herting to D. M. Tulberg, "Analysis for Samples from Tank 103-AW," 65453-85-155, August 7, 1985.

Supporting Document, Rockwell Hanford Operations, E. G. Gratney, "242-A Evaporator/Crystallizer FY'84 Campaign 84-5 Post Run Document," Document No. SD-WM-PE-022, September 1985.

Meeting Minutes, R. H. Guyman, "101-SY and 105-AW Analytical Analysis Requirements," Document No. 65612-85-037, December 3, 1985.

Internal Letter, Rockwell International, B. M. Mauss to V. L. Hunter, "Water Samples from 103-AW and 105-AW Hose Bibs," Document No. 65453-86-012, January 23, 1986.

Internal Letter, Rockwell International, B. M. Mauss to R. T. Kimura, "242-A Evaporator Campaign 86-1: Laboratory Analyses," Document No. 65453-86-023, February 20, 1986.

Letter, Battelle, M. S. Hansen to R. D. Wojtasek, "Letter Report Transmittal: Characterization of Actual Zirflex Decladding Sludge," Document No. 30874, June 8, 1986.

DSI, K. W. Owens to D. E. McKenny, "Costs for Core Sample Truck," June 23, 1986.

Internal Letter, Rockwell International, T. S. Vail to D. E. McKenney, "Operational Summary of the Core Sample From 241-AW-105," Document No. 65950-86-406, July 8, 1986.

Letter, Rockwell International, Brian Peters to Clyde Leaf, " Analysis of Neutralized Coating Removal Waste Samples," July 9, 1986.

DSI, A. J. DiLiberto to J. H. Roecker, "Tank 105-AW NCRW Samples," July 18, 1986.

Supporting Data, Rockwell International, "Neutralized Cladding Removal Waste Transuranic Content," July 1986.
DSI, J. A. Unrutt to J. J. Zimmer, August 8, 1986.

Internal Letter, Westinghouse Hanford Company, A. C. Leaf to Brian Peters, "Analysis of Neutralized Coating Removal Waste Samples," Document No. 8652298, August 11, 1986.

DSI, J. A. Unrutt to J. J. Zimmer, "Justification For PUREX Information Request," August 20, 1986.

Log, "Tank 105-AW Sampling Log," August 29, 1986.

DSI, L. M. Sasaki to D. R. Bratzel, "Tank 103_AW Core Sample," September 22, 1986.

Meeting Minutes, T. R. Pauly, "CRW/TRU Task Force," September 30, 1986.

Letter, Rockwell Hanford Operations, L. M. Sasaki to A. C. Leaf, "Analysis of NCRW Core Samples From Tanks 103-AW and 105-AW," October 6, 1986.

Internal Letter, Rockwell International, B. B. Peters to L. M. Sasaki, "Analysis of Neutralized Coating Removal Waste (NCRW) Core Samples From Tank 105-AW," Document No. 65453-86-124, October 2, 1986.

Internal Letter, Rockwell International, B. B. Peters/K. J. Paterson, "Percent Water in Tank 105-AW Neutralized Coating Removal Waste," Document No. 65453-86-136, November 3, 1986.

DSI, Frank Ha... to Leela Sasaki, December 22, 1986.

Letter, Westinghouse Hanford Company, A. C. Leaf to L. M. Sasaki, "Analysis of NCRW Core Samples from Tanks 103 AW and 105 AW," Document No. 8750316, February 2, 1987.

Table, "Tank 105-AW NCRW Sludge and Heel," February 18, 1987.

Table, "Tank 105-AW Mixed Sludge Composition," February 24, 1987.

DSI, Leela Sasaki to Brian Peters, "Disposal of July 1986 Tank 105-AW Core Sample Segments," March 30, 1987.

Internal Memorandum, Westinghouse Hanford Operation, B. B. Peters to D. W. Bergman, "Tank 103-AW Sampling Options," Document No. 12221-PCL88-116, April 28, 1988.

Report Analysis, "General Tank Information for Tank 105 AW," June 24, 1988.

Report Analysis, "Sample Status Report for T 805. 105-AW A-FD," July 8, 1988.

DSI, A. Coroneos to D. Herting, "Analysis of 103-AW Supernatant Samples," July 12, 1988.

Internal Memorandum, Westinghouse Hanford Company, M. S. Bensky to J. S. Lee, "Request for Core Sampling at Tank 103-AW," Document No. 13316-88-006, December 15, 1988.

Process Memorandum, J. C. Biagini, "Core Sampling of Tank 241-AW-103," Document No. 88-437, December 29, 1988.

DSI, M. S. Bensky to A. J. DiLiberto, January 11, 1989.

Internal Memorandum, Westinghouse Hanford Company, G. J. Gauk to B. W. Hall, "Request for 105-AW Core Sample Analysis," Document No.82315-90-GJG-001, March 12, 1990.

Letter, Westinghouse Hanford Company, B. W. Hall to B. P. McGrail, "105-AW Core Sample," Document No. 9054755, July 2, 1990.

Facsimile Transmittal, Battelle, Joel Tingey to Leela Sasaki, "Preliminary Data for Anions and Cations," June 16, 1992.

Facsimile Transmittal, Battelle, Joel Tingey to Leela Sasaki, "Radionuclide Data for Tank 105-AW," July 20, 1992.

Supporting Document, Westinghouse Hanford Company, J.M. Tingey/B. C. Simpson, Characterization Information for Double-Shell Tank 241-AW-105, Document No. WHC-SD-WM-TI-649, October 1993.

Supporting Document, Westinghouse Hanford Company, A. T. DiCenso, B. C. Simpson, "Tank Characterization of Report for Double-Shell Tank 241-AW-105," Document No.WHC-SW-WM-ER-364 Rev. 0 September 1994.

Tank 241-AW-106

Internal Letter, Rockwell International, K. J. Patterson to J. T. Knight, "Analysis of 106-AW Samples," Document No. 65453-84-079, June 25, 1984.

Internal Letter, Rockwell International, B. M. Mauss/M. T. Jansky to E. G. Gratney/N. L. Pontious, "102-AW Laboratory Boildowns in Support of Evaporator Run 84-5," Document No. 65453-85-013, January 18, 1985.

Internal Letter, Rockwell International, B. M. Mauss to N. L. Pontious, 242-A Evaporator Campaign 85-3: Laboratory Results," Document No. 65463-85-160, August 13, 1985.

Internal Letter, Rockwell International, B. M. Mauss to N. L. Pontious, "85-4 Campaign: Laboratory Results Supporting the 242-A Evaporator," Document No. 65453-86-035, March 21, 1986.

Internal Letter, Rockwell International, B. M. Mauss to R. T. Kimura, "86-3 Evaporator Campaign: Laboratory Analyses Data," Document No. 65453-86-060, April 29, 1986.

Report, "Sample Status Report for T 1621. 106-AW A-FD," July 7, 1986.

Report Analysis, "General Tank Information for Tank 106-AW," August 7, 1988.

Supporting Document, Westinghouse Hanford Operations, R. D. Claghorn, "Test Plan for the Mixing of Waste from Tank 241-AN-106," Document No. WHC-SD-WM-TP-069, August 31, 1989.

Data Report, "Sample Status Report for T 734. FD-A," April 27, 1994.

Supporting Document, Westinghouse Hanford Company, A. T. DiCenso, B. C. Simpson, "Tank Characterization of Report for Double-Shell Tank 241-AW-106," Document No.WHC-SW-WM-ER-365 Rev. 0 September 1994.

Tank 241-AX-101

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to O. R. H. Rasmussen, "Corrected Analysis of PAS," August 18, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, S. S. Koegler to R. E. Felt, "A and AX Tank Sludge Heat Generation Rates," February 12, 1976.

Report, J. E. Horton to D. C. Lini, "Engineering Assistance," November, 1976.

Internal Letter, Rockwell International, M. T. Jansky and S. B. Wilson-Wright to H. J. Eding, "Decomposition of Complexants," Document No. 65453-080-174, June 12, 1980.

Internal Letter, Rockwell International, D. L. Herting and M. T. Jansky to D. E. Bowers and M. C. Teats, "Hot Boildown of Tank 101 AX Waste," Document No. 65453-80-201, July 18, 1980.

Internal Letter, Rockwell International, M. T. Jansky to M. C. Teats," 101 AX Boildown," Document No. 65453-80-233, August 19, 1980.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to D. E. Bowers and D. A. Reynolds, "Composition of Waste from Tank 101-AX," Document No. 65453-80-293, October 7, 1980.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to M. C. Teats, "Tank 101-AX Waste Characteristics," Document No. 65453-80-331, November 11, 1980.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to J. S. Schofield, "Pu and Am Analysis of Various Tank Farm Samples," Document No. 65453-81-184, May 26, 1981.

Tank 241-AX-102

Internal Letter, Atlantic Richfield Hanford Company, J. E. Horton to O. R. H. Rasmussen, "Analyses and Characterization of Sludge Samples Received From Tank 102-AX," September 25, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, S. S. Koegler to R. E. Felt, "A & AX Tank Sludge Heat Generation Rate," February 12, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to G. D. Campbell, "Acid Insoluble Solids in PAS," January 28, 1977.

Internal Letter, Rockwell Hanford Operations, J. L. Starr to J. W. Bailey, "Analysis of Tank 102-AX Sludge," July 20, 1977.

Internal Letter, Rockwell Hanford Operations, C. H. Delegard to R. B. Bendixen, "Hot Boildown of Tank 102-AX Waste Liquor," Document No. 651250-80-064, January 23, 1980.

Internal Letter, Rockwell Hanford Operations, C. H. Delegard to R. B. Bendixen, "Hot Boildown of Tank 102-AX Liquor," Document No. 65124-80-093, February 22, 1980.

Internal Memorandum, Westinghouse Hanford Company, Process Chemistry Laboratories to J. A. Eacker, "Analysis of Tank 241-AX-102 Sample," Document No. 12712-PCL88-018, November 14, 1988.

Internal Memorandum, Westinghouse Hanford Company, R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," Document No. 82316-90-032, April 27, 1990.

Tank 241-AX-103

Internal Letter, Atlantic Richfield Hanford Company, Author: O. R. H. Rasmussen, "Analysis of Tank 104-AX Sludge Sample," October 14, 1974.

Internal Letter, Atlantic Richfield Hanford Company, J. E. Horton to O. R. H. Rasmussen, "Analysis and Characterization of Sludge Sample from Tank 103-AX," November 12, 1974.

Internal Letter, Atlantic Richfield Hanford Company, S. S. Koegler to R. E. Felt, "A and AX Tank Sludge Heat Generation Rates," February 12, 1976.

Internal Letter, T. A. Lane to K. G. Carothers, "Hot Boildown of Cross-Site Transfer Waste First Pass Product," #60120-79-044 J, March 14, 1979.

Internal Letter, Rockwell International, T. A. Lane to D. R. Jorgenson, "Hot" Boildown of Tank 103-AX Material to HDRL," #65120-79-124 J, August 6, 1979.

Internal Memorandum, Author: Manager, Services 222-S Laboratory, "Analytical Results," Received Sample: April 27, 1980.

Internal Letter, Rockwell International, M. T. Jansky to M. C. Teats, "Hot Boildowns of Tanks 103AX, 102AY, and 101AZ Wastes," #65453-80-224, August 13, 1980.

Internal Letter, Rockwell International, M. T. Jansky to M. C. Teats, "Viscosity and Appearance of Tank 103AX Waste," #65453-80-269, September 22, 1980.

Internal Letter, Rockwell International, M. T. Jansky to M. C. Teats,"Composition of 103AX Waste," #65453-80-277, September 24, 1980.

Internal Letter, Rockwell International, M. T. Jansky to D. R. Jorgenson, "Screening of 103AX Waste," #65453-80-299, October 10, 1980.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Tank 241-AX-104

Draft Report, "Achievement Report," prepared by Atlantic Richfield Hanford Company, July 10, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton/J. S. Buckingham to O. R. H. Rasmussen, "Characterization and Analysis of Tank 104-AX Sludge," October 14, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, S. S. Koegler to R. E. Felt, "A & AX Tank Sludge Heat Generation Rate," February 12, 1976.

Internal Letter, Rockwell Hanford Operations, J.L. Starr to F. M. Jungfleisch, "104-AX Sludge Analysis," November 2, 1977.

Internal Letter, Rockwell Hanford Operations, J. S. Buckingham to C. D. Campbell, "Heat Generation of Residual Sludge in Tank 104 AX", Document No. 60120-78-040 J, June 15, 1978.

Tank 241-AY-102

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Tank Farm Samples," June 25, 1974.

Internal Letter, Rockwell International, C. H. Delgard to L. D. Vanselow, "Analytical Data For Tanks 101-AZ, 102-AZ, 103-TX, and 102-AY Hot and Synthetic Liquors," Document No. 65120-79-151 J, September 21, 1979.

Internal Letter, Rockwell International, C. H. Delgard, "Relative Random Error Standard Deviation and Accuracy in Hanford Waste Liquor Analytical Data," Document No. 65124-79-029, December 3, 1979.

Internal Letter, Rockwell International, M. T. Jansky to M. C. Teats, " Hot Boildowns of Tanks 103AX, 102AY, and 101AZ Wastes," Document No. 65453-80-224, August 13, 1980.

Internal Letter, Rockwell International, M. T. Jansky to M. C. Teats, " Composition of Waste from Tanks 101AY and 102AY," Document No. 665453-81-130, April 15, 1981.

Internal Letter, Rockwell International, J. V. Panesko to N. W. Kirch, "Analysis of 102-AY Supernate," Document No. 65453-082-228, June 16, 1982.

Internal Letter, Rockwell International, M. T. Jansky to E. G. Gratny, "Laboratory Support for Upcoming 242-A Evaporator Campaign," Document No. 65453-84-134, May 10, 1984.

Internal Letter, Rockwell International, B. M. Mauss to E. G. Gratny, "Chemical Compositions of 102-AY, 101-AW, 105-AW and 104-AW," Document No. 65453-84-348. November 9, 1984.

Supporting Document, Rockwell Hanford Operation, P. J. Certa, "242-A Evaporator/Crystallizer FY 84 Campaign Run 84-3 Post Run Document," Document No. SD-WM-PE-018, April 30, 1985.

Supporting Document, Rockwell Hanford Operations, E. G. Gratney, "242-A Evaporator/Crystallizer FY'84 Campaign 84-5 Post Run Document," Document No. SD-WM-PE-022, September 1985.

Supporting Document, Rockwell Hanford Operation, N. L. Pontious, "242-A Evaporator/Crystallizer FY 1985 Campaign 85-3 Post-Run Document," Document No. SD-WM-PE-023 Rev. 0, February 24, 1986.

Internal Memorandum, Westinghouse Hanford Company, Tank Farm Characterization & Disposal Tech. Unit to R. L. Weiss, "102-AY Extrusion and Sample Analysis," Document No. 65614-87-030, July 21, 1987.

Internal Memorandum, Westinghouse Hanford Company, Process Chemistry Laboratories to L. C. Stegen, "Extrusion and Analysis of Solids from Tank 241-AY-102," Document No. 65453-87-113, August 6, 1987.

DSI, Leslie Stegen to Mary Petersen, "Tank 102-AY analysis," December 17, 1987.

Letter, Battelle, P. A. Scott to A. J. DiLiberto, "TRU Content in 102-AY Tank Waste Solids," January 29, 1988.

Report, Westinghouse Hanford Company, M. E. Peterson, "Development/Demonstration of DST Retrieval Technology; Addendum III: Additional Characterization of Samples From DST 102-AY," FY-1988.

Letter, Battelle, M. E. Peterson to A. J. DiLiberto, L. M. Sasaki, Response to "Development/Demonstration of DST Retrieval Technology," June 30, 1988.

Letter, Battelle, M. E. Peterson to A. J. DiLiberto, "Milestone 0603-A, Issue Report on the Results of 102-AY Characterization," September 30, 1988.

Letter, Battelle, M. E. Peterson to L. M. Saski, "Revised Tables for 102-AY Characterization," January 19, 1989.

Report Analysis, General Tank Information for Tank 102-AY, January 29, 1989.

Letter, Westinghouse Hanford Company, D. D. Wodrich to M. E. Peterson, "Additional Characterization of Samples from Tank 102-AY," Document No. 8951985, March 28, 1989.

DSI, Leela Sasaki to John Womack, "Background Information on Tank 102-AY Analysis," April 20, 1989.

DSI, Westinghouse Hanford Company, J. C. Womack to H. F. Daugherty, "Tank 102-AY Solids Heel Analysis," April 21, 1989.

Revised Report, Battelle, Mary Peterson to A. J. DiLiberto and L. M. Sasaki, "Revised Report on the Results of 102-AY Characterization," Document No. 9000855, February 12, 1990.

Report Analysis, "General Tank Information for Tank 102-AY," (Composite Solids Sample) February 12, 1990.

Report Analysis, "General Tank Information for Tank 102-AY," (Supernate and Wash) February 12, 1990.

Report Analysis, "General Tank Information for Tank 102-AY," (Chemical Analysis) February 12, 1990.

Supporting Document, Westinghouse Hanford Company, B. A. Castaing, "101-AY, 102-AY, & 106-C Data Compendium," Document No. WHC-SD-WM-TI-578, August 16, 1990.

Tank 241-AZ-101

Supporting Document, Westinghouse Hanford Company, J. A. Ryan, "Analysis of Underground Double-Shell Tank 241-AZ-101," Document No. WHC-SD-WM-DA-050, July 27, 1989.

Report, Pacific Northwest Laboratory, M. E. Peterson, R. B. Sheele, J. M. Tingey, "Characterization of the First Core Sample of Neutralized Current Acid Waste from Double-Shell Tank 101-AZ," Document No. 8904140, September 1989.

Tank 241-AZ-102

Report, Pacific Northwest Laboratory, W. J. Gray, M. E. Peterson, R. D. Scheele, J. M. Tingey, "Characterization of the First Core Sample of Neutralized Current Acid Waste From Double-Shell Tank 102-AZ," Document No. 9004292, October 1990.

Tank 241-B-101

Internal Memorandum, J. E. Horton to D. C. Lini, "Concentration Laboratory Assistance," February 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Sludge from Tank 101-B," February 24, 1976.

Internal Letter, Rockwell International, J. V. Panesko to D. E. Scully, "Significance of Tank Air Measurements," #65453-81-146, April 27, 1981.

Tank 241-B-103

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-7809 Tank: 103-B," October 20, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-4298 Tank: 103-B," October 24, 1975.

Tank 241-B-105

Internal Memorandum, J. E. Horton to D. C. Lini, "Concentration Laboratory Assistance," June 1, 1976.

Internal Memorandum, Westinghouse Hanford Company, C. A. Jurgensmeier to H. Babad, "Results of Single Shell/Double Shell Data Research, #28110-PCL91-046, May 30, 1991.

Tank 241-B-107

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of 107-B Sludge," April 8, 1976.

Tank 241-B-110

Internal Memorandum, Westinghouse Hanford Company, Analytical Systems Laboratories to V. W. Hall, "Preliminary Results for EP-toxicity Tests on Samples From Tanks 110-B and 110-U," Document No. 12715-ASL90-084, June 21, 1990.

Supporting Document, Westinghouse Hanford Company, L. C. Amato, B. C. Simpson, P. G. Heasler "Tank Characterization Report for Single-Shell Tank 241-B-110," Document No. WHC-SD-WM-ER-368 Rev. 0, August 1994.

Tank 241-B-201

Internal Memorandum, Rockwell Hanford Operations, J. E. Horton to J. E. Mirabella, "Characterization of 200 Series Tanks," Document No. 60126-78-131 J, December 4, 1978.

Tank 241-B-203

Internal Memorandum, Rockwell Hanford Operations, J. E. Horton to J. E. Mirabella, "Characterization of 200 Series Tanks," Document No. 60126-78-131 J, December 4, 1978.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to D. E. Bowers, "Solids in Tank 203-B," Document No. 65453-82-452, December 30, 1982.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to D. E. Bowers, "Additional Data for Solids in Tank 203-B," Document No. 65463-83-010, January 7, 1983.

Tank 241-B-204

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to J. E. Mirabella, "Characterization of 200 Series Tanks," Document No. 60126-78-131, December 4, 1978.

Tank 241-BX-101

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W.R. Christensen, "Analysis of Sludge Sample From Tank 101-BX," March 8, 1976.

Tank 241-BX-102

Report, Atlantic Richfield Hanford Company, Author: J. C. Womack and D. J. Larkin, "Investigation and Evaluation of 102-BX Tank Leak," Document No. ARH-2035, March 26, 1971.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-8511 102-BX," December 13, 1974.

Internal Letter, Rockwell International, J. V. Panesko to D. E. Scully, "Significance of Tank Air Measurements," #65453-81-146, April 27, 1981.

DSI, Westinghouse Hanford Company, R. L. Weiss to V.C. Boyles, "BX Farm Liquid Analysis," March 16, 1990.

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load in Ferrocyanide-Containing Tanks (Hanlon 1991)," April 27, 1990.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Tank 241-BX-104

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "242-S Feed Samples," February 28, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-9245 104-BX," January 10, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-365 104-BX," May 20, 1975..

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-6110 Tank: 104-BX," October 21, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-7088 Tank: 104-BX," October 21, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-9511 Tank: 104-BX" February 12, 1976.

Internal Letter, Rockwell International, D. L. Herting to M. C. Teats, "Hot Boildown of Tank 104-BX Waste Liquor," #65453-80-225, August 14, 1980.

Internal Letter, Rockwell International, R. G. Clark to R. L. Weiss, "I-129 Analytical Data," #WHC-IP-0711, July 14, 1986.

Internal Memorandum, T. S. Vail to J. C. Bergam, "BX-Farm Core Sampling Recoverability," September 23, 1986.

Supporting Document, Author: R. L. Weiss, "Data Transmittal Package for 241-BX-104 Waste Tank Characterization," #SD-RE-TI-206, January 21, 1988.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Tank 241-BX-105

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "242-S Feed Samples T-2046 105-BX," February 28, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-1437 Tank: 105-BX," October 27, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8924 Tank: 105-BX," November 26, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-2325 Tank: 105-BX," March 16, 1976.

Internal Letter, Rockwell International, C. H. Delegard to D. E. Bowers, "Viscosity/Cooling Data for Tanks 107-S and 105-BX Waste Liquors," #65124-068-80, January 28, 1980.

Internal Letter, Rockwell International, N. E. Bell to R. A. Zinsli, "Pumping of Supernatant from Tanks in B and BX Tank Farm," #65960-83-1664, November 30, 1983.

Report, "Sample Status Report for R8734 WTCP1," April 11, 1986.

Report, "Sample Status Report for R8735 WTCP1," April 11, 1986.

Internal Letter, Rockwell International, "I-129 Analytical Data," #WHC-IP-0711, July 14, 1986.

Internal Memorandum, T. S. Vail to J. C. Bergam, "BX-Farm Core Sampling Recoverability," September 23, 1986.

Supporting Document, Author: R. L. Weiss, "Data Transmittal Package for 241-BX-105 Waste Tank Characterization," #SD-RE-TI-202, January 21, 1988.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Tank 241-BX-108

Internal Letter, Rockwell Hanford Operations, D. R. Bratzel to F. M. Jungfleisch, "Evaluation of Waste Storage Tank Physical and Chemical Characterization Data," Document No. 65453-80-265, September 18, 1980.

Tank 241-BX-110

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to W. P. Metz, "Analyses of Tank Farm Liquid Samples" May 20, 1975.

Internal Memorandum, "Chemical and Physical Analysis (Content & Percent) Tank 110-BX, Sample 1010-C," November 9, 1978.

Internal Letter, Rockwell Hanford Operations, J. E. Horton to D. J. Flesher, "Physical and Chemical Characterization of Core Segment #3, Tank 110-BX," No. 60120-79-024, February 14, 1979.

Internal Letter, Rockwell Hanford Operations, D. R. Bratzel to F. M. Jungfleisch, "Evaluation of Waste Storage Tank Physical and Chemical Characterization Data," Document No. 65453-80-265, September 18, 1980.

Internal Memorandum, Westinghouse Hanford Company, R. L. Weiss to V. C. Boyles, "BX Farm liquid Analysis" March 16, 1990.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste" #82316-90-032, April 27, 1990.

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load in Ferrocyanide-Containing Tanks (Hanlon 1991)," April 27, 1990.

Table, "Table 4.10.2-1 Ferrocyanide Tank Total Organic Carbon Analyses Summary," October 14, 1991.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Document, "Vapor Space Sampling Criteria for Single-Shell Containing Ferrocyanide Waste," prepared by Westinghouse Hanford Company, Document No. WHC-EP-0424, Rev. 0, July 8, 1993.

Tank 241-BX-111

Internal Memorandum, Westinghouse Hanford Company, R. L. Weiss to V. C. Boyles, "BX Farm Liquid Analysis" March 16, 1990.

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load in Ferrocyanide-Containing Tanks (Hanlon 1991)," April 27, 1990.

Table, "Table 4.10.2-1 Ferrocyanide Tank Total Organic Carbon Analyses Summary," October 14, 1991.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Internal Memorandum, Paul Whitney to Rick Raymond, "Preliminary analysis of BX-111 Surface Level Data" April 15, 1993.

Draft, Paul Whitney (PNL) to Rick Raymond, "Leak Detection Methodology" May 6, 1993.

Document, "Vapor Space Sampling Criteria for Single-Shell Containing Ferrocyanide Waste," prepared by Westinghouse Hanford Company, Document No. WHC-EP-0424, Rev. 0, July 8, 1993.

Tank 241-BY-102

Internal Memorandum, General Electric, "In Farm Scavaging Operating Procedures Central Data," Document No. EM-38955 REF, December 20, 1955.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "BY and C Tank Farm Supernate Sample Analyses," Document No. WHC-IP-0711-1, November 20, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "Cooling Curves for BY and C Tank Farm Liquid Samples," #28110-PCL91-014, February 15, 1991.

Internal Memorandum, Westinghouse Hanford Company, Process Chemistry Laboratories to R. K. Tranbarger, "BY and C Tank Farm Supernate Sample Analyses," (Revision of 16220-PLC90-170), Document No. 28110-PCL91-048, June 3, 1991.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Tank 241-BY-103

Review, General Electric, R.J. Float, "In-Farm Scavenging Operating Procedures and Central Data," Document No. EM-38955 REF, December 20, 1955.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to D. J. Larkin, "Cooling Curves and Analysis of Supernatant Liquid from 103-BY and 106-BY Waste Tanks," October 14, 1971.

Sample Status Report, "Sample Status Report for T-7483 BY-103," March 16, 1987.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load In Ferrocyanide-Containing Tanks," April 27, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "BY and C Tank Farm Supernate Sample Analyses," No. 16220-PCL90-117, November 20, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "BY and C Tank Farm Supernate Sample Analyses, (Revision of 16220-PCL90-117)," No. 28110-PCL91-048, June 3, 1991.

Table, "Table 4.10.2-1 Ferrocyanide Tank Total Organic Carbon Analyses Summary," October 14, 1991.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Document, "Vapor Space Sampling Criteria for Single-Shell Containing Ferrocyanide Waste," prepared by Westinghouse Hanford Company, Document No. WHC-EP-0424, Rev. 0, July 8, 1993.

Tank 241-BY-104

Internal Letter, Rockwell International, R. J. Cain to J. C. Womack, "Isolation and Stabilization of Special Tanks," November 3, 1977.

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load in Ferrocyanide-Containing Tanks (Hanlon 1991)," April 27, 1990.

Report, Westinghouse Hanford Company, J. M. McLaren to U. S. Department of Energy, "Single-Shell Tank 104-BY Thermal-Hydraulic Analysis," #WHC-EP-0521, October 1, 1991.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

DSI, G. T. Dukelow to Al Noonan, "Data Quality Evaluation of Samples from BY-104," November 10, 1992.

Supporting Document, Westinghouse Hanford Company, Author: M. A. Beck, "Analysis Report for 241-BY-104 Auger Samples," #WHC-SD-WM-TI-540, November 12, 1992.

Tank 241-BY-105

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load In Ferrocyanide-Containing Tanks," April 27, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "BY and C Tank Farm Supernate Sample Analyses," No. 16220-PCL90-117, November 20, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "BY and C Tank Farm Supernate Sample Analyses," No. 28110-PCL91-048, June 3, 1991.

Table, "Table 4.10.2-1 Ferrocyanide Tank Total Organic Carbon Analyses Summary," October 14, 1991.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Document, "Vapor Space Sampling Criteria for Single-Shell Containing Ferrocyanide Waste," prepared by Westinghouse Hanford Company, Document No. WHC-EP-0424, Rev. 0, July 8, 1993.

Tank 241-BY-106

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to D. J. Larkin, "Cooling Curves and Analysis of Supernatant Liquid from 103-BY and 106-BY Waste Tanks," October 14, 1971.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to T. D. Anderson, "Analyses of TK 106-BY Samples," April 13, 1972.

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load In Ferrocyanide-Containing Tanks," April 27, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrignton to R. K. Tranbarger, "BY and C Tank Farm Supernate Sample Analyses," No. WHC-IP-0711-1, November 20, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "BY and C Tank Farm Supernate Sample Analyses," (Revision of 16220-PCL90-117), No. 28110-PCL91-048, June 3, 1991.

Table, "Table 4.10.2-1 Ferrocyanide Tank Total Organic Carbon Analyses Summary," October 14, 1991.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Document, "Vapor Space Sampling Criteria for Single-Shell Containing Ferrocyanide Waste," prepared by Westinghouse Hanford Company, Document No. WHC-EP-0424, Rev. 0, July 8, 1993.

Tank 241-BY-107

Internal Letter, T. A. Lane to J. J. Kirk, "Tank 107-BY Analysis and Viscosity Versus Temperature Plots," No. 65120-79-104 J, July 16, 1979.

Internal Letter, Rockwell International, J. V. Panesko to D. E. Scully, "Significance of Tank Air Measurements," #65453-81-146, April 27, 1981.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single- Shell Tank Waste," #82316-90-032, April 27, 1990.

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load In Ferrocyanide-Containing Tanks," April 27, 1990.

Table, "Table 4.10.2-1 Ferrocyanide Tank Total Organic Carbon Analyses Summary," October 14, 1991.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Document, "Vapor Space Sampling Criteria for Single-Shell Containing Ferrocyanide Waste," prepared by Westinghouse Hanford Company, Document No. WHC-EP-0424, Rev. 0, July 8, 1993.

Tank 241-BY-108

Internal Letter, Rockwell International, J. V. Panesko to D. E. Scully, "Significance of Tank Air Measurements," #65453-81-146, April 27, 1981.

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load In Ferrocyanide-Containing Tanks," April 27, 1990.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Tank 241-BY-109

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-6968 109-BY," August 3, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-5953 109-BY," August 3, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-7993 109-BY," August 10, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-8966 109-BY," August 17, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-206 109-BY," August 25, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-1832 109-BY," September 12, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-2490 109-BY," September 26, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-2833 109-BY," October 6, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-3743 109-BY," November 16, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-4005 109-BY," November 28, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-4316 109-BY," December 18, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-4573 109-BY," January 8, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-4911 109-BY," January 16, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-5124 109-BY," January 31, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-5391 109-BY," February 7, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-5594 109-BY," February 26, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-5655 109-BY," March 1, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-5911 109-BY," March 7, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-6123 109-BY," March 22, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-6394 109-BY," April 5, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-6682 109-BY," April 19, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-6877 109-BY," May 7, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample: T-7119 109-BY," May 23, 1973.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "BY and C Tank Farm Supernate Sample Analyses," No. 16220-PCL90-117, November 20, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "Cooling Curves for BY and C Tank Farm Liquid Samples," #28110-PCL91-014, February 15, 1991.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "BY and C Tank Farm Supernate Sample Analyses," (Revision of 16220-PCL90-117), No. 28110-PCL91-048, June 3, 1991.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Tank 241-BY-110

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load In Ferrocyanide-Containing Tanks," April 27, 1990.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Internal Memorandum, Westinghouse Hanford Company, K. D. Fowler to G. T. Dukelow, "Head Space Sampling of Tank 241-BY-110," #7K210-92-441, September 28, 1992.

Tank 241-BY-111

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load In Ferrocyanide-Containing Tanks," April 27, 1990.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Internal Memorandum, Westinghouse Hanford Company, K. D. Fowler to G. T. Dukelow, "Head Space Sampling of Tank 241-BY-111," 7K210-93-036, March 29, 1993.

Tank 241-BY-112

Report, Battelle Northwest, Author: Wallace W. Schulz, "Characterization of the Organic Material in The BY-112 Tank," BNWL-CC-1517, February 1, 1968.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to D. J. Larkin, G. C. Oberg, and W. C. Schmidt, "Dissolution and Analysis of 112-BY Sludge and Crust Samples," May 29, 1971.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to T. D. Anderson, "Analysis of Tank 112-BY Sample," April 4, 1972.

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load In Ferrocyanide-Containing Tanks," April 27, 1990.

Internal Memorandum, Westinghouse Hanford Company, C. A. Jurgensmeier to H. Babad, "Results of Single-Shell/Double-Shell Data Research," #28110-PCL91-046, May 30, 1991.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Draft, Westinghouse Hanford Company, Author: L. A. Pingel, "Results from the Vapor Sampling of Waste Tank BY-112," March 26, 1993.

Internal Memorandum, Westinghouse Hanford Company, K. O. Fowler to G. T. Dukelow, "Head Space Sampling of Tank 241-BY-112," #7K210-92-039, April 6, 1993.

Tank 241-C-101

Internal Letter, Rockwell International, R. L. Weiss to Distribution, "Reissue of Letter 65453-87-065," WHC-IP-0711, May 28, 1987.

Report, Westinghouse Hanford Company, Author: E. K. Chess and D. J. Hendren, "Analysis of Volatile and Semi-Volatile Organic Compounds in Methods Development Samples From WHC Tanks 241-C-101, -102, and -103," November 1987.

Internal Memorandum, Westinghouse Hanford Company, D. A. Dodd to K. G. Carothers, "Final Report of Tank Vapor Space Sampling of 241-C-101, -102, and -103," No. WHC-IP-0711, May 4, 1988.

Internal Memorandum, Westinghouse Hanford Company, D. A. Dodd to K. G. Carothers, "Clarification of Tank Vapor Space Report," #WHC-IP-0711, August 18, 1988.

Tank 241-C-102

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-8306 102-C," October 24, 1975.

Internal Letter, Rockwell Hanford Operations, R. L. Weiss to A. T. Alstad, "Analysis of Partial Core Sample from Tank 241-C-102," No. WHC-IP-0711, June 17, 1987.

Report, Westinghouse Hanford Company, Author: E. K. Chess and D. J. Hendren, "Final Report on the Analysis of Volatile and Semi-Volatile Organic Compounds in Methods Development Samples from WHC Tanks 241-C-101, 102, and 103," November 1987.

Supporting Document, Author: R. L. Weiss and K. E. Schull, "Data Transmittal Package for 241-C-102 Waste Tank Characterization," Document No. WHC-SD-RE-TI-209, January 21, 1988.

Internal Memorandum, Westinghouse Hanford Company, D. A. Dodd to K. G. Carothers, "Clarification of Tank Vapor Space Report," Document No. WHC-IP-0711, August 18, 1988.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrignton to R. K. Tranbarger, "BY and C Tank Farm Supernate Sample Analyses," Document No. WHC-IP-0711-1, November 20, 1990.

Report, Pacific Northwest Laboratory, "SST Sample Characterization Analysis of Archive Samples 102-C, 105-C, and 106-C," Document No. PNL-7258, Rev. 1, February 1, 1991.

Internal Memorandum, Westinghouse Hanford Company, Process Chemistry Laboratories to R. K. Tranbarger, "Cooling Curves for BY and C Tank Farm Liquid Samples," #28110-PCL91-014, February 15, 1991.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "BY and C Tank Farm Supernate Sample Analyses," (Revision of 16220-PLC90-117), #29110-PCL91-048, June 3, 1991.

Engineering Change Notice, Westinghouse Hanford Company, B. C. Simpson, "Tank Characterization Reference Guide," Document No. ECN 615575, October 6, 1994.

Tank 241-C-103

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-6184 103-C," September 16, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-7563 103-C," September 20, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-9661 103-C," May 20, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-1174 Tank: 103-C," October 27, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, Westinghouse Hanford Company, K. G. Carothers to Distribution, "Tank 103-C Characterization Interim Status," #13331-88-018, January 20, 1988.

Internal Memorandum, Westinghouse Hanford Company, D. A. Dodd to K. G. Carothers, "Clarification of Tank Vapor Space Report," #12221-ASL88-215, August 18, 1988.

Internal Memorandum, Westinghouse Hanford Company, W. H. Ulbricht to K. G. Carothers, "Assay Data of Gases from the 241-C-103," #12221-ASL88-234, September 27, 1988.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Analysis Report, R. S. Edrington to Rhett Tranbarger, "Results of Analysis of the C-103 Samples," October 10, 1990.

Internal Memorandum, Westinghouse Hanford Company, K. D. Fowler to R. A. Dodd, "Transfer of Tank 241-C-103 Supernate to Tank 241-AN-101," #86434-90-106, November 13, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "BY and C Tank Farm Supernate Sample Analyses," #16220-PCL90-117, November 20, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "Cooling Curve of Tank 103-C Supernate," #16220-PCL90-122, November 30, 1990.

Internal Memorandum, Westinghouse Hanford Company, K. D. Fowler to R. A. Dodd, "Tank 241-C-103 Supernatant Sample Analysis," #86434-90-117, December 14, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger," BY and C Tank Farm Supernate Sample Analyses (Revision of 16220-PCL90-117)," #28110-PCL91-048, June 3, 1991.

Internal Memorandum, Westinghouse Hanford Company, R. L. Weiss to S. D. Godfrey, "Recalculation of Plutonium and Uranium Concentrations for Tanks 241-C-103, 104, 105, and 106 from 1986 Core Sampling Data," #28600-91-079, July 8, 1991.

Internal Memorandum, Westinghouse Hanford Company, C. W. Dunbar to Distribution, "Tank 103-C Vapor Space Composition," #77300-91-070, October 29, 1991.

Analysis Report (Predecisional-Draft), S. F. Agnew to Los Alamos National Laboratory, "Tank History Analysis: C-Farm and 103-C," October 12, 1992.

CC Mail Letter, Harry Harmon to All Employees, "Update on Vapor Sampling of Tank 241-C-103," October 23, 1992.

Internal Memorandum, Westinghouse Hanford Company, J. L. Huckaby to K. G. Carothers, "Water Content of 241-C-103 Headspace," #7K210-92-501, December 28, 1992.

Tank 241-C-105

Internal Memorandum, J. S. Buckingham to C. M. Walker, "Analysis of Sludge Sample from TK-105-C," November 10, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to C. M. Walker, "Corrected Analysis of Sludge Sample from TK-105-C," November 21, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, J. C. Womack to J. S. Buckingham, "Tanks 105-C and 106-C sludge Analyses," #ARHC-083074, August 30, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Characterization of Tank 105-C Sludge," April 1, 1977.

Report, Atlantic Richfield Hanford Company, C. M. Walker to Distribution, "History and Status of Tanks 241-C-105 and 241-C-106," Document No. ARH-CD-948, May 1, 1977.

Internal Letter, Rockwell International, R. J. Cain to J. C. Womack, "Isolation and Stabilization of Special Tanks," November 3, 1977.

Internal Letter, Rockwell International, R. G. Clark to R. L. Weiss, "I-129 Analytical Data," #65452-86-100, July 14, 1986.

Table, T. S. Vail to J. C. Bergam, "BX-Farm Core Sampling Recoverability," September 23, 1986.

Internal Letter, Rockwell International, R. L. Weiss to T. R. Pauly, "Additional Analyses on Core Samples from Tanks 241-C-105 and 241-C-106," #65453-87-050, April 14, 1987.

Internal Letter, Rockwell International, R. L. Weiss to Distribution, "Reissue of Letter 65453-87-050," #65453-87-074, May 28, 1987.

Internal Memorandum, Westinghouse Hanford Company, R. L. Weiss to M. M. Torgerson, "Preliminary Test Plan for Investigation of Thermal Conductivity and Sludge Dryout Characteristics of 241-C-105 and 241-C-106 Wastes," #65453-87-133, September 30, 1987.

Supporting Document, R. L. Weiss to Distribution, "Data Transmittal Package for 241-C-105 Waste Tank Characterization," #SD-RE-TI-204, January 8, 1988.

Internal Memorandum, Westinghouse Hanford Company, K. E. Schull to A. J. DiLiberto, "241-C-105 and 241-C-106 Thermal Conductivity Studies," #12221-PCL88-082, February 25, 1988.

Internal Memorandum, Westinghouse Hanford Company, K. E. Schull to A. J. DiLiberto, "241-C-105 and 241-C-106 Thermal Conductivity Test Plan," #12221-PCL88-089, March 10, 1988.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. L. Weiss to S. D. Godfrey, "Recalculation of Plutonium and Uranium Concentrations for Tanks 241-C-103, 104, 105, and 106 from 1986 Core Sampling Data," #28600-91-079, July 8, 1991.

Tank 241-C-106

Internal Letter, Atlantic Richfield Hanford Company, J. C. Womack to J. S. Buckingham, "Tanks 105-C and 106-C Sludge Analyses," #083074, August 30, 1974.

Internal Memorandum, Author: M. H. Campbell, "Chemical Composition of Salt Cake Produced in the 242-S Evaporator," #ARH-AT-110 A, December, 1974.

Internal Letter, Atlantic Richfield Hanford Company, J. E. Horton to O. R. H. Rasmussen, "Analysis and Characterization of Sludge Sample from Tank 106-C," January 6, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8059 Tank: 106-C," January 8, 1976.

Internal Letter, S. S. Koegler to R. E. Felt, "A and AX Tank Sludge Heat Generation Rates," February 12, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-7808 Tank: 106-C," March 3, 1976.

Internal Memorandum, Supervisor, Analytical Services to J. C. Womack, "Analysis of Tank Farm Samples Sample T-3294 Tank: 106-C," September 17, 1976.

Report, Atlantic Richfield Hanford Company, Author: C. M. Walker, "History and Status of Tanks 241-C-105 and 241-C-106," Document No. ARH-CD-948, May 1, 1977.

Internal Letter, Rockwell International, J. E. Horton to W. R. Christensen, "Characterization and Analysis of Tank 106-C," July 22, 1977.

Internal Letter, Rockwell International, R. J. Cain to J. C. Womack, "Isolation and Stabilization of Special Tanks," November 3, 1977.

Internal Letter, Rockwell International, M. E. Mitchell to J. R. Wetch, "Radionuclide Data on Waste Tank Samples," #65453-080-133, April 23, 1980.

Document, Rockwell Hanford Operations, Author: G. D. Campbell, "Tank 241-C-106 Thermal Assessment and Heat Transfer Analysis," Document No. RHO-CD-967, May 1, 1980.

Internal Letter, Rockwell International, D. R. Bratzel to F. M. Jungfleisch, "Evaluation of Waste Storage Tank Physical and Chemical Characterization Data," #65453-80-265, September 18, 1980.

Internal Letter, Rockwell International, R. G. Clark to R. L. Weiss, "I-129 Analytical Data,' #65452-86-100, July 14, 1986.

Internal Letter, Rockwell International, R. L. Weiss to T. R. Pauly, "Additional Analyses on Core Samples from Tanks 241-C-105 and 241-C-106," #65453-87-050, April 14, 1987.

Report, Rockwell International, T. R. Pauly and M. M. Torgerson to U.S. Department of Energy, "Tanks 105-C and 106-C Stabilization Study," #RHO-RE-EV-97, May 1, 1987.

Internal Letter, Rockwell International, R. L. Weiss to Distribution, "Reissue of Letter 65453-87-050," #65453-87-074, May 28, 1987.

Internal Memorandum, Westinghouse Hanford Company, R. L. Weiss to M. M. Torgerson,"Preliminary Test Plan for Investigation of Thermal Conductivity and Sludge Dryout Characteristics of 241-C-105 and 241-C-106 Wastes," #65453-07-133, September 30, 1987.

Supporting Document, Author: R. L. Weiss, "Data Transmittal Package for 241-C-106 Waste Tank Characterization," #SD-RE-TI-205, January 8, 1988.

Internal Memorandum, Westinghouse Hanford Company, K. E. Schull to A. J. DiLiberto, "241-C-105 and 241-C-106 Thermal Conductivity Test Plan" #12221-PCL88-089, March 10, 1988.

Report, Battelle Pacific Northwest Laboratories, J. J. McCown to R. S. Wegeng, "Revised Draft Report on Single Shell Tank Sample (241-C-106)," July 22, 1988.

Report, Battelle Pacific Northwest Laboratories, J. J. McCown to R. S. Wegeng, "Final Report on Single Shell Tank Sample (241-C-106)," August 31, 1988.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. L. Weiss to S. D. Godfrey, "Recalculation of Plutonium and Uranium Concentrations for Tanks 241-C-103, 104, 105, and 106 from 1986 Core Sampling Data," #28600-91-079, July 8, 1991.

CC: Mail Memorandum, C. C. Pitkoff to D. B. Parkman, "Purex Water Addition to C-106," January 29, 1992.

Tank 241- C-107

Internal Letter, Rockwell International, J. L. Starr to J. W. Bailey, "Analysis of 107-C Sludge" November 10, 1977.

Internal Letter, G. D. Campbell to J. W. Bailey, "Heat Transfer Study on Tank 107-C," November 20, 1978.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "BY and C Tank farm Supernate Sample Analyses," #16220-PCL90-117, November 20, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "BY and C Tank farm Supernate Sample Analyses (Revision of 16220-PCL90-117)," #28110-PCL91-048, June 3, 1991.

Tank 241-C-108

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T- 5489 Tank: 108-C," September 19, 1975.

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load in Ferrocyanide-Containing Tanks (Hanlon 1991)," April 27, 1990.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Tank 241-C-109

Internal Letter, Rockwell International, M. T. Jansky to M. E. Mitchell, "Particle Analysis of Tank 109-C Unblended Sludge Using the Particle Data, Inc. Analyzer," #65453-080-128, April 16, 1980.

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load in Ferrocyanide-Containing Tanks (Hanlon 1991)," April 27, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger "BY and C Tank Farm Supernate Sample Analyses," #16220-PCL90-117, November 20, 1990.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Internal Memorandum, Westinghouse Hanford Company, G. T. Dukelow to K. D. Fowler, "Head Space Sampling of Tank 241-C-109," #7K210-92-434, August 27, 1992.

Tank 241-C-110

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-5491 110-C," September 19, 1975.

Internal Letter, Rockwell Hanford Operations, J. L. Starr to J. W. Bailey, "Analysis of Tank 110-C Sludge," November 10, 1977.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "BY and C Tank Farm Supernate Sample Analyses," Document No. WHC-IP-0711-1, November 20, 1990.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "Cooling Curves for BY and C Tank Farm Liquid Samples" #28110-PCL91-014, February 15, 1991.

Internal Memorandum, Westinghouse Hanford Company, R. S. Edrington to R. K. Tranbarger, "BY and C Tank Farm Supernate Sample Analyses," (Revision of 16220 - PCL90-117), Document No. 28110-PCL91-048, June 3, 1991.

Validation Summary, Westinghouse Hanford Company, Author: H.A.S.M., "241-SST-C-110 Cores 37,28,39," WHC-SD-WM-DP-027, January 1, 1993.

Supporting Document, Westinghouse Hanford Company, L. C. Amato, B. C. Simpson, "Tank Characterization Report for Single-Shell Tank 241-C-110," Document No. WHC-SD-WM-ER-367 Rev. 0, August 1994.

Engineering Change Notice, Westinghouse Hanford Company, B. C. Simpson, "Tank Characterization Report for Single-Shell Tank 241-C-110," Document No. WHC-SD-WM-ER-367 Rev. 0A, September 1994.

Tank 241-C-111

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-2167 111-C," April 23, 1975.

Internal Letter, Rockwell International, J. V. Panesko to D. E. Scully, "Significance of Tank Air Measurements," #65453-81-146, April 27, 1981.

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load in Ferrocyanide-Containing Tanks (Hanlon 1991)," April 27, 1990.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Tank 241-C-112

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-6185 112-C," November 20, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-5624 Tank: 112-C," October 27, 1975.

Trac Summary Report, "Estimated Waste Tank Inventories -- Solutions 1st Quarter 1981," SD-WM-TI-057, March 12, 1985.

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load in Ferrocyanide-Containing Tanks (Hanlon 1991)," April 27, 1990.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Supporting Document, Author: L. A. Pingel, "Presentation and Discussion for the March, 1992 Vapor Sampling Results from Waste Tank C-112," #WHC-SD-CP-RPT-009, September 16, 1992.

Tank 241-C-201

Internal Letter, J. E. Horton to J. E. Mirabella, "Analysis of Tanks 011-BXR, 201-C and 204-T," No. 60120-78-132 J, December 4, 1978.

Trac Summary Report, "Estimated Waste Tank Inventories--Solutions 1ST Quarter, 1981," SD-WM-TI-057, March 12, 1985.

Internal Letter, Rockwell International, J. I. Gould to W. M. Hayward, "Measurements for TRU in B Cell of 201-C Facility," #65452-85-182, September 24, 1985.

Tank 241-C-204

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to C. M. Walker, "DTA of Sample No. T8208 from Waste Tank 204-C," February 11, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-5625 204-C," October 23, 1975.

Trac Summary Report, "Estimated Waste Tank Inventories--Solutions 1ST Quarter, 1981," SD-WM-TI-057, March 12, 1985.

Tank 241-S-101

Internal Memorandum, Atlantic Richfield Hanford Company, D. A. Puryear to J. O. Skolrud, "Characterization of S, U, and SX Waste Tanks," September 21, 1971.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8084 101-S," December 20, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis and Characterization of Sludge from Tank: 101-S," July 16, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-9715 Tank: 101-S," December 5, 1975.

Trac Summary Report, "Estimated Waste Tank Inventories," SD-WM-TI-057, March 12, 1985.

Sample Status Report, "Sample Status Report Sample No. T-8579, S-101," December 30, 1991.

Tank 241-S-102

Internal Memorandum, Atlantic Richfield Hanford Company, D. A. Puryear to J. O. Skolrud, "Characterization of S, U, And SX Waste Tanks," September 21, 1971.

Internal Memorandum, Atlantic Richfield Hanford Company, D. A. Puryear to G. L. Borsheim, "Analysis and Identification of Solids in TK 107 and 102-S," November 27, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "242-S Feed Sample T-459 (11/16/73) 102-S," December 7, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, " 242-S Feed Samples T-9488 (10/5/73) 102-S," December 18, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "Analysis of Tank Farm Samples Sample: T 1746 102-S," January 25, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "Analysis of Tank Farm Samples Sample: T 2164 102-S," February 11, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-2359 102-S," February 22, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser," Analysis of Tank Farm Samples Sample: T 2520 102-S," February 25, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "Analysis of Tank Farm Samples Sample: T 2759 102-S," March 7, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-3005 Tank 102-S," March 25, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-3145 Tank 102-S," March 25, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-3370 102-S," April 17, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-3601 102-S," May 13, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-4372 102-S," May 22, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-4103 102-S," May 24, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-4652 102-S," June 7, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-5030 102-S," June 7, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-3770 102-S," June 17, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-5468 102-S," June 19, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-5232 102-S," June 28, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: 5775 102-S,"July 2, 1974.

Internal Memorandum, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-5458 102-S," July 3, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-6006 102-S," September 16, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-6622 102-S," September 17, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-6214 102-S," October 14, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-6416 102-S," October 14, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-7300 102-S," October 14, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-7439 102-S," October 14, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-6761 102-S," October 21, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-7805 102-S," October 21, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8077 102-S," October 21, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8199 102-S," October 21, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-9007 102-S," October 23, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8929 102-S," October 25, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8779 102-S," October 29, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8339 102-S," November 1, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8604 102-S," November 1, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-7562 102-S," November 4, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-9103 102-S," November 19, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-9601 102-S," November 19, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-9706 102-S," November 26, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8416 102-S," December 4, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8008 102-S," December 17, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-423 102-S," December 26, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-534 102-S," January 6, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-632 102-S," January 6, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-841 102-S," January 6, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-1231 102-S," January 20, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-933 102-S," January 22, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: 1299 102-S," February 3, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser and R. G. Geier, "Analysis of Tank Farm Samples Sample: T-2415 102-S," March 26, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-1369 102-S," April 1, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-2768 102-S," April 1, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-2617 102-S," April 11, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton and J. S. Buckingham to W. R. Christensen, "Analysis of Solids from 241-S-102," April 17, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-2278 102-S," April 23, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-3109 102-S," April 23, 1975.

Internal Memorandum, J. E. Horton to D. C. Lini, "Waste Solution Solidification By Volume Reduction (Achievement Report for Period Ending April 29, 1975)," April 29, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-3328 102-S," April 30, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-4028 102-S," May 13, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to W. P. Metz, "Analyses of Tank Farm Liquid Samples," May 20, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-3478 Tank: 102-S," July 8, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-4388 Tank: 102-S," July 8, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-5514 Tank: 102-S," July 28, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-5964 Tank: 102-S," July 31, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-6226 Tank: 102-S," July 31, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-5792 Tank: 102-S," July 31, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-5137 Tank: 102-S," August 1, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, L. R. Perez to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-3259 Tank: 102-S," August 20, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, L. R. Perez to R. L. Walser, "Analysis of Tank Farm Samples Sample: T- 3639 Tank: 102-S," August 20, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, L. R. Perez to R. L. Walser, "Analysis of Tank Farm Samples Sample: T- 4104 Tank: 102-S," August 22, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, L. R. Perez to R. L. Walser, "Analysis of Tank Farm Samples Sample: T- 4240 Tank: 102-S," August 22, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, L. R. Perez to R. L. Walser, "Analysis of Tank Farm Samples Sample: T- 4823 Tank: 102-S," August 22, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-4963 Tank: 102-S," September 19, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-7092 Tank: 102-S," September 19, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-7340 Tank: 102-S," September 19, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-7627 Tank: 102-S," September 19, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-7218 Tank: 102-S," September 22, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-5859 Tank: 102-S," September 23, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-6453 Tank: 102-S," September 23, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8446 Tank: 102-S," October 20, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-1091 Tank: 102-S," October 20, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-7703 Tank: 102-S," October 20, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8350 Tank: 102-S," October 20, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-9049 Tank: 102-S," November 6, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-9697 Tank: 102-S," November 18, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-6806 Tank: 102-S," November 13, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-9515 Tank: 102-S," November 21, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8634 Tank: 102-S," December 3, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-119 Tank: 102-S," December 3, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-37 Tank: 102-S," December 3, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-6042 Tank: 102-S," December 11, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-378 Tank: 102-S," December 11, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-506 Tank: 102-S," December 15, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8706 Tank: 102-S," January 8, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-1330 Tank: 102-S," January 15, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8864 Tank: 102-S," January 19, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-1193 Tank: 102-S," January 19, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-9952 Tank: 102-S," January 21, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-9394 Tank: 102-S," February 12, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-1683 Tank: 102-S," February 13, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-1018 Tank: 102-S," March 16, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-7798 Tank: 102-S," March 16, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-2395 Tank: 102-S," April 27, 1976.

Internal Letter, Rockwell International, G. E. Brown to K. G. Carothers, "Tank 102-S Customer Waste Analyses," #65120-79-062 J, April 5, 1979.

Internal Letter, Rockwell International, C. H. Delegard to G. A. Olsen, "Analysis of Tank 102-S Evaporator Solids," #65124-79-026, December 31, 1979.

Internal Letter, Rockwell International, M. T. Jansky to H. J. Eding, "Hot Boildown of Tank 102-S Liquor," #65453-080-118, March 28, 1980.

Report, "Estimated Waste Tank Inventories-Solutions 1st Quarter 1981," #SD-WM-TI-057, March 12, 1985.

Tank 241-S-103

Internal Memorandum, Atlantic Richfield Hanford Company, D. A. Puryear to J. O. Skolrud, "Characterization of S, U, and SX Waste Tanks," September 21, 1971.

Table, "Data Sheet Special Tank Farm Samples Sample Number 5496," Date Sampled: July 20, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "242-S Feed Samples T-9490 (10/05/73) 103-S" December 7, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "242-S Feed Samples T-736 Sample Point 103-S" January 21, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8009 103-S," December 6, 1974.

Sample Status Report, "Sample Status Report Sample No. T-8525 S-103," November 26, 1991.

Tank 241-S-104

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-4184 104-S," August 12, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Characterization and Analysis of Tank 104-S Sludge" February 24, 1976.

Supporting Document, Westinghouse Hanford Company, A. T. DiCenso, P. Sathyanarayana, "Tank Characterization Report for Single-Shell Tank 241-S-104," Document No. WHC-SD-WM-ER-370 Rev. 0. September 1994.

Tank 241-S-106

Internal Memorandum, Atlantic Richfield Hanford Company, D. A. Puryear to J. O. Skolrud, "Characterization of S, U, and SX Waste Tanks," Document No. 00347, September 21, 1971.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "242-S Feed Samples T-9492 (10/5/73) 106-S," December 7, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "242-S Feed Samples T-738 Sample Point 106-S," January 21, 1974.

Draft-Achievement Report, Atlantic Richfield Hanford Company, Author: J. E. Horton, "Salt Cake Samples from Tanks 105-S, 106-S, and 111-S, Thermal Conductivities of 105-S Salt," August 21, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. D. Horton/J. S. Buckingham to N. L. Harms, "Analyses of Salt Sample from 242 - S Evaporator Slurry Receiving Tanks 105-S, 106-S, 111-S, August 23, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-5469 106-S," October 14, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-8035 106-S," December 16, 1974.

Internal Memorandum, Author: J. S. Buckingham, "Chemical Composition of Salt Cake Produced in the 242-S Evaporator," ARH-ST-110 A, December 18, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Salt and Liquid Sample from 106-S Tank," July 23, 1975.

Internal Memorandum, Westinghouse Hanford Company, Engineering Testing to V. D. Maupin, "Investigation of Apparent Liquid Intrusion in Tank 106-S," August 1, 1990.

Internal Memorandum, Westinghouse Hanford Company, Process Chemistry Laboratories to H. Babad, "Results of Single-Shell/Double-Shell Data Research," Document No. 28110-PCL91-046, May 30, 1991.

Sample Status Report, "Sample Status Report Sample No. T-8578," November 26, 1991.

Tank 241-S-107

Internal Memorandum, Atlantic Richfield Hanford Company, D. A. Puryear to G. L. Borsheim, "Analysis and Identification of Solids in Tank 107 and 102-S," November 27, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "242-S Feed Samples T-178 (11/6/73) 107-S," December 7, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "242-S Feed Samples T-476 (11/16/73) 107-S," December 7, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8078 107-S," December 17, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Sludge from Tank 107-S," February 14, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham and K. J. Patterson to J. S. Garfield, "Cloud Points and Viscosities of Liquid from Tank 107-S," January 19, 1976.

Internal Letter, Rockwell International, T. A. Lane to J. O. Honeyman, "Crosscountry Transfer of 103/107-S Material," #60120-78-056 J, July 10, 1978.

Internal Letter, Rockwell International, G. E. Brown to K. G. Carothers, "Analysis of 107-S Cross-Site Transfer Material," #60120-78-091 J, September 7, 1978.

Internal Letter, Rockwell International, G. E. Brown to G. A. Olsen, "107-S Salt Well Sample 4251," #60120-78-106 J, October 16, 1978.

Internal Letter, Rockwell International, C. H. Delegard to D. E. Bowers, "Viscosity/Cooling Data for Tanks 107-S and 105-BX Waste Liquors," #65124-068-80, January 28, 1980.

Internal Letter, Rockwell International, M. T. Jansky to D. E. Bowers, "Viscosity/Temperature Data for Tank 107-S Waste," #65453 080-161, May 29, 1980.

Internal Letter, Rockwell International, M. T. Jansky to D. E. Bowers, "Viscosity/Cooling Curves for Tank 107-S Waste," #65453-80-270, September 22, 1980.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Sample Status Report, "Sample Status Report Sample No. T-8526, S-107," November 26, 1991.

Sample Status Report, "Sample Status Report Sample No. T-8535, S-107," November 26, 1991.

Tank 241-S-108

Internal Report, Atlantic Richfield Hanford Company, W. L. Godfrey to S. J. Beard, "242-T Evaporator Feed", September 24, 1965.

Internal Letter, Atlantic Richfield Hanford Company, D. A. Puryear, "Characterization of S, U, and SX Waste Tanks," Document No. 00347, September 21, 1971.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "242-S Feed Samples T-9493 (10/5/73) 108-S", Document No. 54-6000-030, December 7, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to W. R. Christensen, "Analysis of Supernatant Liquids from 242-S Slurry Receiving Tanks", July 8, 1974.

Draft-Achievement Report, Author J. S. Buckingham, "Analysis of Pilot Evaporator Samples," July 8, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to H. P. Shaw, "Deliquescence of Solids Produced by the 242-S Evaporator," July 22, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, W. P. Metz to Distribution, "Available Plutonium Analyses of Stored Wastes," August 5, 1974.

Sample Status Report, "Sample Status Report Sample No. T-8597, S-108," December 11, 1991.

Tank 241-S-109

Internal Memorandum, Atlantic Richfield Hanford Company, D. A. Puryear to J. O. Skolrud, "Characterization of S, U, and SX Waste Tanks," September 21, 1971.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples," August 10, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "242-S Feed Samples T-9494 (10/5/73) 109-S," December 18, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to N. L. Harms, "Analysis of Salt Sample from 242-S Evaporator Slurry Receiving Tank 109-S," September 3, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-4544 109-S," September 16, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8121 109-S," November 19, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, To: Jim Irish, "Salt Cake Composition," February 28, 1975.

Internal Memorandum, J. E. Horton to D. C. Lini, "Engineering Assistance Waste Concentration," December 1, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Salts from Tank 109-S," December 8, 1976.

Internal Memorandum, Westinghouse Hanford Company, C. A. Jurgensmeier to H. Babad, "Results of Single-Shell/Double-Shell Data Research," #28110-PCL91-046, May 30, 1991.

Sample Status Report, "Sample Status Report Sample No. T-8598, S-109," December 11, 1991.

Tank 241-S-110

Internal Memorandum, D. A. Puryear to J. O. Skolrud, "Analysis of Tanks 110-S, 111-S and 112-S," July 20, 1971.

Internal Memorandum, Atlantic Richfield Hanford Company, D. A. Puryear to J. O. Skolrud, "Characterization of S, U, And SX Waste Tanks," September 21, 1971.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Sludge Sample from Tank 110-S," September 25, 1974.

Internal Memorandum, J. E. Horton to N. L. Harms, "Waste Solution Solidification by Volume Reduction (Achievement Report for Period Ending October 1, 1974)," October 1, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8042 110-S," December 17, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Tank 110-S Sludge Sample," January 7, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton and C. H. Hunter to W. R. Christensen, "Analysis of 110-S Tank Salt Layer," June 20, 1975.

Internal Memorandum, Westinghouse Hanford Company, C. A. Jurgensmeier to H. Babad, "Results of Single-Shell/Double Shell Data Research," #28110-PCL91-046, May 30, 1991.

Tank 241-S-111

Internal Memorandum, D. A. Puryear to J. O. Skolrud, "Analysis of Tanks 110-S, 111-S and 112-S," July 20, 1971.

Internal Memorandum, Atlantic Richfield Hanford Company, D. A. Puryear to J. O. Skolrud, "Characterization of S, U, and SX Waste Tanks," September 21, 1971.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to W. R. Christensen, "Analysis of Sludge Sample from Tank 111-S," May 29, 1974.

Achievement Report, Author: J. E. Horton, "Salt Cake Samples from Tanks 105-S, 106-S, and 111-S," August 21, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton/J. S. Buckingham to N. L. Harms, "Analyses of Salt Samples from 242-S Evaporator Slurry Receiving Tanks 105-S, 106-S, and 111-S," August 23, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-8141 111-S," December 16, 1974.

Internal Memorandum, Author: M. H. Campbell, "Chemical Composition of Salt Cake Produced in the 242-S Evaporator," #ARH-ST-110 A, December 1, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Tank 111-S Salts," February 28, 1977.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Tank 111-S Salts," March 10, 1977.

Internal Letter, Rockwell International, J. E. Horton to G. K. Allen, "Chemical and Physical Analysis of Core Segments from Tank 111-S," #60120-78-087 J, August 25, 1978.

Internal Letter, Rockwell International, D. R. Bratzel to F. M. Jungfleisch, "Evaluation of Waste Storage Tank Physical and Chemical Characterization Data," #65453-80-265, September 18, 1980.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R.E. Raymond, Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Internal Memorandum, Westinghouse Hanford Company, C. A. Jurgensmeier to H. Babad, "Results of Single-Shell/Double Shell Data Research," #28110-PCL91-046, May 30, 1991.

Tank 241-S-112

Internal Memorandum, D. A. Puryear to J. O. Skolrud, "Analysis of Tanks 110-S, 111-S and 112-S,' July 20, 1971.

Internal Memorandum, Atlantic Richfield Hanford Company, D. A. Puryear to J. O. Skolrud, "Characterization of S, U, and SX Waste Tanks, "September 21, 1971.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "242-S Feed Samples T-181 112-S," January 7, 1974.

Internal Memorandum, J. S. Buckingham to W. R. Christensen, "Analysis of Supernatant Liquids from 242-S Slurry Receiving Tanks," July 8, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8122 112-S," December 9, 1974.

Internal Memorandum, J. S. Buckingham to N. L. Harms, "Liquid Waste Characterization and Solidification Studies (Achievement Report for Period Ending December 10, 1974)," December 10, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to N. L. Harms, "Analysis of Salt Sample from 242-S Evaporator Slurry Receiving Tank 241-S-112," December 18, 1974.

Tank 241-SX-101

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to W. R. Christensen, "Analysis of Salt Sample from Tank 101-SX," November 13, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-6496 101-SX," November 20, 1974.

Internal Memorandum, J. E. Horton to J. E. Mirabella, "Analysis of Tank 101-SX," #60120-78-126 J, December 4, 1978.

Internal Letter, T. A. Lane to T. B. Veneziano,, "Transfer of 101-SX to 101-TX," #60120-79-016 J, February 7, 1979.

Internal Letter, Rockwell International, C. H. Delegard to G. A. Olsen, "Viscosity/Temperature Data for Tank 101-SX Liquor," #65120-79-136 J, September 6, 1979.

Internal Letter, Rockwell International, M. T. Jansky to D. E. Bowers, "101-SX Solids in T-1013," #65453-080-191, July 14, 1980.

Internal Letter, Rockwell International, M. T. Jansky to D. E. Bowers, "Viscosity and Analysis of Tank 101-SX Waste," #65453-80-316, October 29, 1980.

Internal Memorandum, Westinghouse Hanford Company, Process Chemistry Laboratories to V. C. Boyles, "Analysis of Liquid Sample from Tank 241-SX-101," #12712-PCL90-043, February 22, 1990.

Internal Memorandum, Westinghouse Hanford Company, Tank Waste Characterization Section to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Tank 241-SX-102

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-6736 102-SX," October 14, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Characterization of 102-SX Sludge Sample," November 26, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham and J. E. Horton to J. C. Womack, "Analysis of Dip Samples from 241-SX-102", May 29, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to R. E. Van der Cook, "Analyses of Salts from Tanks 102-SX and 103-SX," March 18, 1976.

Internal Letter, Rockwell International, J. L. Starr to W. R. Christensen, "102-SX Analysis," December 5, 1977.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to D. E. Bowers, "Identification of Solids in 102-SX Sample,"
September 3, 1980.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste" #82316-90-032, April 27, 1990.

Internal Memorandum, Westinghouse Hanford Company, C. A. Jurgensmeier to H. Babad, "Results of Single-Shell/Double Shell Data Research", Document No. 28110-PCL91-046, May 30, 1991.

Tank 241-SX-103

Internal Memorandum, J. E. Horton to D. C. Lini, "Laboratory Assistance," June 10, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to R. E. Van der Cook, "Analyses of Salts from Tanks 102-SX and 103-SX," March 18, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Tank 103-SX Salts," December 8, 1976.

Internal Memorandum, J. E. Horton to D. C. Lini, "Engineering Assistance Waste Concentration," December 1976.

Internal Letter, Rockwell International, J. L. Starr to G. A. Olsen, "241-103-SX Sample #1104," December 16, 1977.

Internal Memorandum, Westinghouse Hanford Company, Process Chemistry Laboratories to H. Babad, "Results of Single-Shell/Double Shell Data Research," #28110-PCL91-046, May 30, 1991.

Tank 241-SX-104

Internal Letter, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-7326 104-SX," October 21, 1974

Internal Letter, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Tank 104-SX Sludge Sample," December 16, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Sample, Sample: T-2163 104-SX," April 23, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample T-375 Tank: 104-SX," December 18, 1975.

Internal Letter, Atlantic Richfield Hanford Company, J. S. Buckingham to D. R. Frazier, "Analysis of 242-S Slurry Receiving Tank 104-SX During Partial Neutralization Process Test", February 2, 1976.

Internal Letter, Atlantic Richfield Hanford Company, J. S. Buckingham to J. S. Garfield, "Analysis of Sample from Tank 107-S", March 15, 1976.

Report, Atlantic Richfield Hanford Company, J. E. Horton to D. C. Lini, "Engineering Assistance Waste Concentration", March-April, 1977.

Internal Memorandum, Westinghouse Hanford Company, M. B. Strope to K. G. Carothers, "Request for Tank 104-SX Interstitial Liquid Hazardous Waste Designation," Document No. 13334-88-190, June 16, 1988.

Internal Memorandum, Westinghouse Hanford Company, R. L. Weiss to K. G. Carothers, "Analysis of Tank 241-SX-104," Document No. 12221-PCL88-147, July 7, 1988.

Internal Memorandum, Westinghouse Hanford Company, Brewster Strope to Dennis Maupin, "104-SX Tank Waste Designations," Document No. 13331-88-416, July 8, 1988.

Internal Memorandum, Westinghouse Hanford Company, R. L. Weiss, "Analysis of Tank 241-SX-104," Document No. 12221-PCL, August 15, 1988.

Internal Memorandum, Westinghouse Hanford Company, Process Chemistry Laboratories to H. Babad, "Results of Single-Shell/Double-Shell Data Research" Document No. 28110-PCL91-046, May 30, 1991.

Tank 241-SX-105

Internal Letter, J. E. Horton to W. R. Christensen, "Characterization of 105-SX Sludge Sample," October 4, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-7327 105-SX," November 19, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-377 Tank: 105-SX," December 18, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Characterization and Analysis of Tank 105-SX Salts," March 29, 1977.

Abstract, Atlantic Richfield Hanford Company, J. E. Horton to D. C. Lini, "Engineering Assistance Waste Concentration," March-April 1977.

Internal Memorandum, J. W. Bailey to Distribution, "Tank Status Update" #60412-78-0434, October 2, 1978.

Internal Memorandum, Westinghouse Hanford Company, C. A. Jurgensmeier to H. Babad, "Results of Single-Shell/Double-Shell Data Research," Document No. 28110-PCL91-046, May 30, 1991.

Tank 241-SX 106

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-8041 106-SX," December 6, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. S. Buckingham to R. E. Van der Cook, "Evaporation of Synthetic 106-SX Solution," February 25, 1977.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Characterization of Tank 106-SX Supernatant and Sludge," March 31, 1977.

Internal Memorandum, J. E. Horton to D. C. Lini, "Engineering Assistance Waste Concentration," June, 1, 1977.

Internal Letter, Rockwell International, J. E. Horton to R. J. Cain, "Analysis of 106-SX Tanks Sample #8301," Document No. 60120-78-055, June 29, 1978.

Internal Letter, Rockwell International, G. E. Brown to K. G. Carothers, "Concentration of Tank 106-SX Customer Waste," Document No. 60120-78-149 J, December 22, 1978.

Internal Letter, Rockwell International, T. A. Lane to D. R. Jorgenson, "Customer Waste Flowsheet Development: Tank 106-SX," Document No. 65120-79-133 J, September 4, 1979.

Internal Letter, Rockwell International, C. H. Delegard to D. R. Jorgenson, "Customer Waste Flowsheet Development: Third Pass Run of Tank 106-SX/107-S Blend," #65120-79-134 J, September 5, 1979.

Internal Letter, Rockwell International, C. H. Delegard to H. J. Eding, "Viscosity/Cooling Curve for Tank 106-SX Sample Composite," #65124-79-003, November 1, 1979.

Tank 241-SX 107

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to D. C. Lini, "Engineering Assistance Waste Concentration," March-April 1977.

Internal Memorandum, Westinghouse Hanford Company, Process Chemistry Laboratories to H. Babad, "Results of Single-Shell/Double-Shell Data Research" Document No. 28110-PCL91-046, May 30, 1991.

Tank 241-SX-108

Report, Battelle-Northwest, J. R. Raymond and E. G. Shdo, "Characterization of Subsurface Contamination in the SX Tank Farm", Document No. BNWL-CC-701, June 13, 1966.

Tank 241-SX-109

Internal Letter, Rockwell International, R. D. Prosser to J. D. White, "Tank 109-SX (Contract DE-AC06-77RL01030)," #R86-4230, September 11, 1986.

Supporting Document, R. L. Weiss to Distribution, "Data Transmittal Package for 241-SX-109 Waste Tank Characterization," #SD-RE-TI-210, January 21, 1988.

Report, Westinghouse Hanford Company, Author: E. H. Neilsen, "Tank 241-SX-109 Supporting Documentation Miscellaneous Reports, Letters, Memoranda, and Data," #WHC-MR-0301 SD 1, July 1, 1992.

Report, Westinghouse Hanford Company, Author: E. H. Neilsen, "Tank 241-SX-109 Supporting Documentation Miscellaneous Reports, Letters, Memoranda, and Data," #WHC-MR-0301 SD 2, August 1, 1992.

Report, Westinghouse Hanford Company, "Tank 241-SX-109 Leak Assessment," #WHC-MR-0301 UC 721, August 1, 1992.

Tank 241-SX-111

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample:

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Sludge and Liquid Sample from Tank 11-SX," September 12, 1975.
T-4283 111-SX," September 16, 1974.

Tank 241-SX-115

Report, Battelle-Northwest, J. R. Raymond and E. G. Shdo, "Characterization of Subsurface Contamination in the SX Tank Farm", Document No. BNWL-CC-701, June 13, 1966.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Tank 115-SX Sludge Sample," April 22, 1975.

Tank 241-SY-101

Supporting Document, Westinghouse Hanford Company, D. L. Herting, D. B. Bechtold, B. E. Hey, B. D. Keele, L. Jensen, T. L. Welsh, "Laboratory Characterization of Samples Taken in December 1991 (Window E) from Hanford Waste Tank 241-SY-101," Document No. WHC-SD-WM-DTR-026, August 20, 1992.

Supporting Document, Westinghouse Hanford Company, K. Sathyanarayana, "Fluid Parameters for Calculation of Hydrodynamic Loads in Tank 101-SY," Document No. WHC-SD-WM-ER-184 Rev. 0, January 1993.

Tank 241-SY-103

Supporting Document, Westinghouse Hanford Company, G. L. Fox, D. D. Stepnewski, R. P. Anantatmula, "Tank 241-SY-103 Hazard Assessment," Document No. WHC-SD-WM-SAR 061, Rev.0, October 4, 1993.

Tank 241-T-101

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-2286 Tank 101-T," March 25, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample T-2381 Tank: 101-T," October 27, 1975.

Internal Memorandum, Westinghouse Hanford Company, Process Chemistry Laboratories to A. J. DiLiberto, "Interim Results of Tank T-101 and T-107/Neutralized Plutonium Finishing Plant Acid Waste," Document No. 12712-PCL89-144, August 1, 1989.

Internal Memorandum, Westinghouse Hanford Company, Tank Waste Technology Applications to G. T. Dukelow, "Vapor Sampling of Tank 241-T-101," Document No. 82316-90-032, February 25, 1993.

Document, "Vapor Space Sampling Criteria for Single-Shell Containing Ferrocyanide Waste," prepared by Westinghouse Hanford Company, Document No. WHC-EP-0424, Rev. 0, July 8, 1993.

Tank 241-T-103

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "Analysis of 103-T Tank Sample Number T-7869," July 24, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-2288 Tank 103-T," March 13, 1974.

Tank 241-T-104

Internal Letter, Rockwell Hanford Operations, J. E. Horton to D. J. Flesher, "Physical and Chemical Characterization of Tank 104-T", Document No. 65124-79-017, November 13, 1979.

Internal Letter, Rockwell Hanford Operations, M. E. Mitchell to J. R. Wetch, "Radionuclide Data on Waste Tank Samples", Document No. 65453-080-133, April 23, 1980.

Internal Letter, Rockwell Hanford Operations, D. R. Bratzel to F. M. Jungfleisch, "Evaluation of Waste Storage Tank Physical and Chemical Characterization Data," Document No. 65453-80-265, September 18, 1980.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90--032, April 27, 1990.

Supporting Document, Westinghouse Hanford Company, A. T. DiCenso, B. C. Simpson, "Tank Characterization Report for Single-Shell Tank 241-T-104," Document No. WHC-SD-WM-ER-372 Rev. 0. September 1994.

Tank 241-T-105

Supporting Document, Westinghouse Hanford Company, A. T. DiCenso, B. C. Simpson, "Tank Characterization Report for Single-Shell Tank 241-T-105," Document No. WHC-SD WM-ER-369 Rev. 0, September 1994.

Tank 241-T-106

Internal Memorandum, Atlantic Richfield Hanford Company, J. J. Roemer to R. L. Walser, "Analysis of Tank 106-T Sample Number T-7422," June 18, 1973.

Internal Memorandum, Atlantic Richfield Hanford Operations, J. E. Horton to D. C. Lini, "Waste Solution Solidification By Volume Reduction (Achievement Report for Period Ending April 29, 1975)," April 29, 1975.

Tank 241-T-107

Internal Memorandum, W. L. Godfrey to S. J. Beard, "242-T Evaporator Feed," #91-MJK-0523, September 24, 1965.

Internal Letter, Rockwell Hanford Operations, D. R. Ratzel to L. A. Gale, "Tank 107-T Waste Mixing Study," Document No. 91-MJK-0523, Attachment 1, Part C, March 5, 1985.

Internal Memorandum, Westinghouse Hanford Company, D. R. Bratzel to A. J. DiLiberto, "Interim Results of Tank T-101 and T-107 Analysis and T-101/Neutralized Plutonium Finishing Plant Acid Waste," Document No. 12712-PCL89-144, August 1, 1989.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Report, Author: R. E. Raymond, "White Paper Potential Leak in Tank 241-T-107," May 21, 1991.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. J. Cash, "Action Items for Potential Leak in Tank 241-T-107," #91-MJK-0523, May 23, 1991.

Table, "Table 4.10.2-1 Ferrocyanide Tank Total Organic Carbon Analyses Summary," October 14, 1991.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Internal Memo, Westinghouse Hanford Company, L. A. Pingel to G. L. Dukelow, "Waste Tank T-107 Vapor Sampling Results," Document No. 12240-SAS93-003, November 2, 1992.

Document, "Vapor Space Sampling Criteria for Single-Shell Containing Ferrocyanide Waste," prepared by Westinghouse Hanford Company, Document No. WHC-EP-0424, Rev. 0, July 8, 1993.

Supporting Document, Westinghouse Hanford Company, B. D. Valenzuela, L. Jensen, "Tank Characterization Report for Single-Shell Tank 241-T-107," Document No. WHC-SD-WM-ER-382 Rev. 0. September 1994.

Tank 241-T-108

Internal Memorandum, W. L. Godfrey to S. J. Beard, "242-T Evaporator Feed," September 24, 1965.

Internal Letter, Rockwell Hanford Operations, R. N. Kersey to D. J. Flesher, "Sampling of Tank 108-T," Document No. 65412-80-241, February 21, 1980.

Tank 241-T-109

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Sant, "Analysis of Tank Farm Samples, Sample: T-2298 Tank 109-T," March 13, 1974.

Supporting Document, Westinghouse Hanford Company, B. C. Simpson, A. T. DiCenso, "Tank Characterization Reference Guide," Document No. WHC-SD-WM-TI-648 Rev. 0, September 30, 1994.

Tank 241-T-110

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-4340 110-T," May 24, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample: T-5313 110-T," January 20, 1975.

Tank 241-T-111

Internal Memorandum, W. L. Godrey to S. J. Beard, "242-T Evaporator Feed," September 24, 1965.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-3304 111-T," June 7, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample: T-4893 111-T," September 24, 1974.

Tank 241-TX-105

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "Special Sampling of 241-TX Farm Tanks, Sample: T-805 105-T," January 21, 1974.

Internal Memorandum, Supervisor-Analytical Services, "Analyses of Tank Farm Sample No: T-6311 Tank: 105 TX," February 22, 1977.

Internal Letter, Rockwell International, R. J. Cain to J. C. Womack, "Isolation and Stabilization of Special Tanks," November 3, 1977.

Internal Memorandum, J. W. Bailey to Distribution, Tank Status Update-Correction," #60411-78-0441, October 4, 1978.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to J. W. Bailey, "Viscosity and Characterization of TX Samples," Document No. 65453-81-029, February 3, 1981.

Internal Letter, Rockwell International, R. B. Bendixsen to G. T. Dukelow, "Segregation of TX Farm Salt Well Product," #65260-81-063, February 6, 1981.

Internal Letter, Rockwell International, M. T. Jansky to H. J. Eding, "Nitrate and Nitrite Content of TX Salt Well Samples," #65453-81-038, February 10, 1981.

Internal Letter, Rockwell International, M. T. Jansky to L. A. Gale, "TX Samples Composite Boildown," #65453-81-085, March 23, 1981.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Tank 241-TX-107

Internal Memorandum, Atlantic Richfield Hanford Company, L. R. Perez to L. R. Walker, "Analysis of Tank Farm Samples, Samples: T-7178, Tank: 107-TX," September 10, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Wheeler, "Analysis of Tank Farm Samples, Sample: T7815 Tank: 107-TX," September 26, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples, Sample T-3975 Tank: 107-TX," October 27, 1975.

Tank 241-TX-110

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser and R. G. Geir, "Analysis of Tank Farm Samples, Sample: T-2704 110-TX," March 31, 1975.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to J. W. Bailey, "Viscosity and Characterization of TX Samples," Document No. 65453-81-029, February 3, 1981.

Tank 241-TX-113

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "Special Sampling of 241-TX Farm Tanks, Sample: T-848 113-TX," January 18, 1974.

Tank 241-TX-114

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "Special Sampling of 241-TX Farm Tanks, Sample: T-833 114-TX," January 21, 1974.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to J. W. Bailey, "Viscosity and Characterization of TX Samples," Document No. 65463-81-029, February 3, 1981.

Tank 241-TX-115

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "Special Sampling of 241-TX Farm Tanks, Sample: T-834 115-TX," January 17, 1974.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to J. W. Bailey, "Viscosity and Characterization of TX Samples," Document No. 65463-81-029, February 3, 1981.

Tank 241-TX-116

Internal Memorandum, Atlantic Richfield Hanford Company, V. L. Schuelein to Distribution, "Salt Cake Core Analysis of 116TX Samples R-4; 1, 2, 3, 4, and 5" June 10, 1976.

Internal Letter, Rockwell Hanford Operations, M. T. Jansky to J. W. Bailey, "Viscosity and Characterization of TX Samples," Document No. 65463-81-029, February 3, 1981.

Tank 241-TX-117

Internal Letter, D. A. Puryear to D. J. Larkin, "Phosphoric Acid Neutralization of 117-TX Supernatant," Document No. 00343, July 20, 1971.

Tank 241-TX-118

Internal Memorandum, W. L. Godfrey to S. J. Beard, "242-T Evaporator Feed," September 24, 1965.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-6205 118 TX," August 3, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-7220 118TX," August 8, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-8257 118TX," August 10, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-3775 118 TX," November 20, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-4043 118-TX," November 30, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-4312 118-TX," December 20, 1972.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-4638 118-TX," January 15, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-4966 118-TX," January 18, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-5256 118-TX," February 1, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-5592 118-TX," February 21, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-5860 118-TX," March 5, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-6086 118-TX," March 20, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-6362 118TX," April 6, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-6683 118-TX," April 19, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-6731 118-TX," April 24, 1973.

Internal Memorandum, Rockwell International, Manager-Special Analysis to Steve Buckingham, "Analyses of Tank Farm Sample Serial No. 8385 Tank 118-TX," May 10, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-7116 118-TX," May 23, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to C. M. Walker, "Analysis of Tank Farm Samples Sample T-7349 118-TX," July 24, 1973.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "Special Sampling of 241-TX Farm Tanks Sample T-835 118-TX," January 21, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "Analysis of Tank Farm Samples Sample T-1944 118-TX, February 11, 1974.

Internal Memorandum, W. H. Sant to R. L. Walser, "Analysis of Tank Farm Samples Sample T-2290 118-TX," February 13, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "Analysis of Tank Farm Samples Sample T-2453 118-TX," February 26, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "Analysis of Tank Farm Samples Sample T-2608 118-TX," February 27, 1974.

Internal Memorandum, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-2780 Tank 118-TX," March 25, 1974.

Internal Memorandum, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-2938 Tank 118-TX," March 25, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-3238 Tank 118-TX," March 29, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-3392 118-TX," April 12, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-3574 118-TX," May 6, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-3701 118-TX," May 6, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-3868 118-TX," May 14, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-4333 118-TX," May 23, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-4556 118-TX," May 24, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-4773 118-TX," June 10, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-5327 118-TX," June 25, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-5551 118-TX," June 28, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-6109 118-TX," August 2, 1974.

Internal Letter, Atlantic Richfield Hanford Company, W. P. Metz to Distribution, "Available Plutonium Analyses of Stored Wastes," August 5, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-6343 118-TX," August 16, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-6730 118-TX," October 14, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-7167 118-TX," October 14, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-7582 118-TX," October 14, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-7743 118-TX," October 21, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-7960 118-TX," October 21, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-8232 118-TX," October 28, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-9274 118-TX," November 5, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-8378 118-TX," November 20, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-8574 118-TX," November 25, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-8995 118-TX," November 25, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-8775 118-TX," December 6, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-231 118-TX," December 17, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-462 118-TX," December 18, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-1057 118-TX," January 10, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-1542 118-TX," February 10, 1975.

Internal Memorandum, R. E. Wheeler to R. G. Geier and R. L. Walser, "Analysis of Tank Farm Samples Sample: T-9434 118-TX," February 25, 1975.

Internal Memorandum, R. E. Wheeler to R. G. Geier and R. L. Walser, "Analysis of Tank Farm Samples Sample: T-9577 118-TX," February 25, 1975.

Internal Memorandum, R. E. Wheeler to R. G. Geier and R. L. Walser, "Analysis of Tank Farm Samples Sample: T-9991 118-TX," February 25, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser and R. G. Geier, "Analysis of Tank Farm Samples Sample: T-2784 118TX," March 31, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-2123 118-TX," April 23, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-3262 118-TX," April 23, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-2264 118-TX," May 2, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-3751 Tank: 118-TX," June 20, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-4900 Tank: 118-TX," July 10, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, L. R. Perez to R. L. Walser, "Analysis of Tank Farm Samples Sample T-3909 Tank: 118-TX," August 20, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, L. R. Perez to R. L. Walser, "Analysis of Tank Farm Samples Sample T-3491 Tank: 118-TX," August 22, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, L. R. Perez to R. L. Walser, "Analysis of Tank Farm Samples Sample T-4553 Tank: 118-TX," August 22; 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, L. R. Perez to R. L. Walser, "Analysis of Tank Farm Samples Sample T-5179 Tank: 118-TX," August 22, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, L. R. Perez to R. L. Walser, "Analysis of Tank Farm Samples Sample T-5253 Tank: 118-TX," August 22, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, L. R. Perez to R. L. Walser, "Analysis of Tank Farm Samples Sample T-5393 Tank: 118-TX," August 22, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-6309 Tank: 118-TX," September 3, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-7177 Tank: 118-TX," September 3, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-6959 Tank: 118-TX," September 19, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-7617 Tank: 118-TX," September 24, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-7817 Tank: 118-TX," September 24, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-8576 Tank: 118-TX," October 8, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-8757 Tank: 118-TX," October 20, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-8758 Tank: 118-TX," October 27, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-8311 Tank: 118-TX," November 12, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-8312 Tank: 118-TX," November 12, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-9252 Tank: 118-TX," December 3, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-9626," December 11, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-9878 Tank: 118-TX," January 2, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-87 Tank: 118-TX," January 5, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-1246 Tank: 118-TX," January 19, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-681 Tank: 118-TX," February 2, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-1625 Tank 118-TX," February 6, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-1036 Tank: 118-TX," February 11, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-1809 Tank: 118-TX," March 1, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-1451 Tank: 118-TX," March 16, 1976.

Internal Memorandum, Atlantic Richfield Hanford Company, R. E. Wheeler to R. L. Walser, "Analysis of Tank Farm Samples Sample T-2258 Tank: 118-TX," March 16, 1976.

Internal Memorandum, Author: Supervisor, Analytical Services, "Analyses of Tank Farm Samples Sample T-1205 Tank: 118-TX," February 24, 1977.

Internal Letter, Atlantic Richfield Hanford Company, S. W. Wright to B. Barton,"Neutralization of HLSW Waste with Synthetic 118-TX (Its Bottoms)-Composition of Synthetic HLSW Waste," March 17, 1977.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Tank 118-TX," March 31, 1977.

Internal Letter, Rockwell International, Manager, Special Analysis to Steve Buckingham, "Analyses of Tank Farm Samples Serial No. 4753 Tank 118-TX," October 27, 1978.

Internal Letter, Rockwell International, Author: Manager, Special Analysis, "Analyses of Tank Farm Samples Serial No. 5622 Tank 118-TX," Received Sample: November 29, 1978.

Internal Letter, Rockwell International, Author: Manager, Special Analysis, "Analyses of Tank Farm Samples Serial No. 6192 Tank 118-TX," Received Sample: December 23, 1978.

Internal Letter, Rockwell International, Manager, Special Analysis to Steve Buckingham, "Analyses of 118-TX Sample Serial No. 7233," February 22, 1979.

Internal Memorandum, Rockwell International, Manager-Special Analysis, "Analyses of 118-TX Sample Serial No. 8871," Received Sample: April 7, 1979.

Internal Letter, Rockwell International, C. H. Delegard to D. E. Bowers, "Viscosity/Cooling Curves for Tanks 101-TX, 103-TX, and 118-TX Samples," #65124-069-80, January 28, 1980.

Internal Memorandum, Author: Dale R. Jorgenson, "Deactivation Evaluation," November 17, 1980.

Internal Letter, Rockwell International, D. R. Bratzel to J. R. Wetch, "Laboratory Plan for Analysis of Tank 118-TX Supernatant Liquid," #65453-81-278, August 24, 1981.

Internal Letter, D. R. Bratzel to J. R. Wetch, "Analysis of Supernatant Liquid and Suspended Solids from Tank 118-TX," #65453-81-331, October 16, 1981.

Internal Letter, Rockwell International, D. R. Bratzel to J. R. Wetch, "Technetium-99 Results from the Analysis of 118-TX Supernatant and Suspended Solids," #65453-81-351, November 9, 1981.

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load in Ferrocyanide-Containing Tanks (Hanlon 1991)," April 27, 1990.

Table, "Table 4.10.2-1 Ferrocyanide Tank Total Organic Carbon Analyses Summary," October 14, 1991.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Tank 241-TY-101

Internal Letter, Rockwell Hanford Operations, D. R. Bratzel to F. M. Jungfleisch, "Evaluation of Waste Storage Tank Physical and Chemical Characterization Data," Document No. 65453-80-265, September 18, 1980.

Internal Letter, Rockwell International, M. T. Jansky to S. J. Joncus, "101 TY Sample," #65453-82-435, December 6, 1982.

Document, Author: R. L. Weiss, "TY Tank Farm Waste Characterization Data," #RHO-WM-TI-1 P, March 1, 1986.

Supporting Document, "Data Transmittal Package for 241-TY-101 Waste Tank Characterization," Author: R. L. Weiss, Document No. SD-RE-TI-185, July 8, 1987.

Internal Memorandum, Westinghouse Hanford Company, W. I. Winters to D. M. Nguyen, "Analysis of Archive Samples from Tanks 241-TY-101 and 241-TY-103 for Total Cyanide," #12715-ASL88-067, December 29, 1988.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load in Ferrocyanide-Containing Tanks," April 27, 1990.

Table, "Table 4.10.2-1 Ferrocyanide Tank Total Organic Carbon Analyses Summary," October 14, 1991.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Tank 241-TY-103

Internal Memorandum, W. L. Godfrey to S. J. Beard, "242-T Evaporator Feed," September 24, 1965.

Internal Letter, Rockwell Hanford Operations, M. E. Mitchell to D. J. Flesher, "Physical and Chemical Characteristics of Tanks 105-TY, 103-TY, and 102-TY," Document No. 65124-80-077, February 1, 1980.

Internal Letter, Rockwell Hanford Operations, D. R. Bratzel to F. M. Jungfleisch, "Evaluation of Waste Storage Tank Physical and Chemical Characterization Data," Document No. 65453-80-265, September 18, 1980.

Supporting Document, Rockwell Hanford Operations, Author: R. L. Weiss "Data Transmittal Package for 241-TY-103 Waste Tank Characterization," Document No. SD-RE-TI-184, June 30, 1987.

Internal Memorandum, Westinghouse Hanford Company, W. I. Winters to D. M. Nguyen, "Analysis of Archive Samples from Tanks 241-TY-101 and 241-TY-103 for Total Cyanide," #12715-ASL88-067, December 29, 1988.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Table, M. J. Klem to R. E. Raymond, "Temperatures and Estimated Heat Load in Ferrocyanide-Containing Tanks (Hanlon 1991)," April 27, 1990.

Table, "Table 4.10.2-1 Ferrocyanide Tank Total Organic Carbon Analyses Summary," October 14, 1991.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Document, "Vapor Space Sampling Criteria for Single-Shell Containing Ferrocyanide Waste," prepared by Westinghouse Hanford Company, Document No. WHC-EP-0424, Rev. 0, July 8, 1993.

Tank 241-TY-104

Internal Memorandum, W. L. Godfrey to S. J. Beard, "242-T Evaporator Feed," September 24, 1965.

Table,"Chemical Analysis of Tank 104-TY," August 22, 1979.

Internal Letter, Rockwell Hanford Operations, M. E. Mitchell to D. J. Flesher, "Physical and Chemical Characterization of Tanks 104-TY, and 106-TY," Document No. 65124-79-046, December 20, 1979.

Internal Letter, Rockwell Hanford Operations, D. R. Bratzel to F. M. Jungfleisch, "Evaluation of Waste Storage Tank Physical and Chemical Characterization Data," #65453-80-265, September 18, 1980.

Supporting Document, Rockwell Hanford Operations, "Data Transmittal Package for 241-TY-104 Waste Tank Characterization," Document No. SD-RE-TI-182, June 30, 1987.

Internal Memorandum, Westinghouse Hanford Company, M. J. Klem to R. E. Raymond, "Total Organic Carbon Concentration of Single-Shell Tank Waste," #82316-90-032, April 27, 1990.

Table, "Table 4.10.2-1 Ferrocyanide Tank Total Organic Carbon Analyses Summary," October 14, 1991.

Table, Westinghouse Hanford Company, "Ferrocyanide Tank Inventory Summary," WHC-SD-WM-RPT-032, Rev. 0, December 4, 1991.

Document, "Vapor Space Sampling Criteria for Single-Shell Containing Ferrocyanide Waste," prepared by Westinghouse Hanford Company, Document No. WHC-EP-0424, Rev. 0, July 8, 1993.

Tank 241-TY-105

Internal Letter, Rockwell Hanford Operations, M. E. Mitchell to D. J. Flesher, "Physical and Chemical Characteristics of Tanks 105-TY, 103-TY, and 102-TY," Document No. 65124-80-077, February 1, 1980.

Internal Letter, Rockwell Hanford Operations, M. E. Mitchell to J. R. Wetch, "Radionuclide Data on Waste Tank Samples," Document No. 65453-080-133, April 23,1980.

Internal Letter, Rockwell Hanford Operations, D. R. Bratzel to F. M. Jungfleisch, "Evaluation of Waste Storage

Tank 241-U-101

Internal Letter, Rockwell International, R. J. Cain to J. C. Womack, "Isolation and Stabilization of Special Tanks," November 3, 1977.

Tank 241-U-102

Internal Memorandum, Atlantic Richfield Hanford Company, D. A. Puryear to J. O. Skolrud, "Characterization of S, U, and SX Waste Tanks," September 21, 1971.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Solids and Liquid Samples form Tank 102-U," April 12, 1976.

Internal Letter, Rockwell International, T. A. Lane to J. O. Honeyman, "Double Shell Slurry Processing," October 24, 1977.

Tank 241-U-103

Internal Memorandum, Atlantic Richfield Hanford Company, W. L. Godfrey to S. J. Beard, "242-T Evaporator Feed," September 24, 1965.

Internal Memorandum, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, "242-S Feed Samples Number T-1542 Sample Point 103-U," January 30, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Tank 103-U," September 20, 1976.

Internal Letter, Rockwell International, J. L. Starr to W. R. Christensen, "241-103-U Sample # 8793," December 14, 1977.

Internal Letter, Rockwell International, Supervisor, Analytical Services to Opal Mudd, "Analyses of Tank Farm Samples, Serial No. 3432 Tank: 103-U," January 11, 1978.

Internal Letter, Rockwell International, Supervisor, Analytical Services to Opal Mudd, "Analyses of Tank Farm Samples Serial No. 3665 Tank: 103-U," January 31, 1978.

Internal Letter, Rockwell International, J. E. Horton to J. E. Mirabella, "Analysis of Tanks 103-U, 203-U and 204-U," Document No. 60120-78-032 J, December 4, 1978.

Tank 241-U-104

Internal Letter, General Electric Company, W. A. Haney to R. E. Roberts, "History of the 104-U Tank," February 9, 1961.

Tank 241-U-105

Internal Letter, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Tank 105-U Sludge," April 16, 1976.

Internal Letter, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Characterization and Analysis of Tank 105-U Sludge," April 5, 1977.

Internal Letter, Rockwell International, J. L. Starr to W. R. Christensen, "241-105-U Sample #968," January 10, 1978.

Internal Letter, J. E. Horton to J. E. Mirabella, "Analysis of 105-U Tank Solids," Document No. 60120-78-125 J, December 4, 1978.

Tank 241-U-106

Internal Letter, W. L. Godfrey to S. J. Beard, "242-T Evaporator Feed," September 24, 1965.

Internal Letter, Atlantic Richfield Hanford Company, W. H. Sant to R. L. Walser, " 242-S Feed Samples; Number T-1970, 106-U Sample Point," February 26, 1974.

Tank 241-U-107

Internal Memorandum, Atlantic Richfield Hanford Company, R.E. Wheeler to R.L. Walser, "Analysis of Tank Farm Samples, Sample: T-8938 107-U," December 20, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J.E. Horton to W.R. Christensen, "Analysis of Sludge Sample from Tank 107-U," January 20, 1975.

Tank 241-U-108

Internal Memorandum, Atlantic Richfield Hanford Company, D. A. Puryear To J. O. Skolrud, "Characterization of S, U, and SX Waste Tanks," September 21, 1971.

Internal Memorandum, Atlantic Richfield Hanford company, W. H. Sant to R.L. Walser, "242-S Feed Samples Number T-151 Sample Point 108-U,"January 21, 1974.

Internal Memorandum, Atlantic Richfield Hanford Company, J.E. Horton to W.R. Christensen, "Analysis of Sludge Sample from Tank 108-U," September 29, 1975.

Internal Memorandum, Westinghouse Hanford Company, E. A. Jurgensmeier to H. Babad, "Results of Single-Shell/Double Shell Data Research," Document No. 28110-PCL91-046, May 30, 1991

Tank 241-U-109

Internal Letter, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis and Characterization of Sludge from Tank 109-U," December 15, 1975.

Tank 241-U-110

Internal Memorandum, Atlantic Richfield Hanford Company, J. E. Horton to W. R. Christensen, "Analysis of Sludge Sample from Tank: 110-U," August 27, 1974.

Report, Westinghouse Hanford Company, T. M. Brown and L. Jensen, "Tank Characterization Report Single-Shell Tank 241-U-110," Document No. WHC-EP-0643, September 1993.

Tank 242-U-111

Internal Memorandum, Atlantic Richfield Hanford Company, J.E. Horton to W.R. Christensen, "Analysis of Sludge Sample from Tank 111-U," September 29, 1975.

Internal Memorandum, Atlantic Richfield Hanford Company, R.E. Wheeler to R.L. Walser,"Analysis of Tank Farm Samples, Sample: T-5957 Tank: 111-U," October 21, 1975.

Internal Letter, Rockwell International, M. T. Jansky to D. E. Bowers, "Freezing of Tank 111-U Waste," Document No. 65453-80-273, September 23,1980.

Tank 242-U-202

Internal Memorandum, Atlantic Richfield Hanford Company, R.E. Wheeler to R.L. Walser, "Analysis of tank farm samples Sample: T-8245, tank 202-U, September 25,1975.

Tank 242-U-203

Internal Memorandum, Atlantic Richfield Hanford Company, R.E. Wheeler to R.L. Walser, "Analysis Of Tank Farm samples Sample: T-8246 Tank: 203-U Received: September 25, 1975.

Tank 242-U-204

Internal Memorandum, Atlantic Richfield Hanford company, R.E. Wheeler to R.L. Walser,"Analysis of Tank Farm Samples Sample: T-8247 Tank 204-U", September 25, 1975.

APPENDIX I

Tank 241-C-106 Sample Information

Summary/Description of Table Fields and Codes

The sample data tables that follow contain all the information used to make the plots, either radionuclide or chemical analyte as indicated in the title. This information is specifically useful in that it includes, in addition to the information on the plots found in the previous appendices, all the data points that are above or below the plot limits. Information included in the tables is as follows:

Tank Waste Characterization Sample Information

- **Tank** - the tank the sample was taken from
- **Reported Chemical/Radionuclide** - the chemical/radionuclide as it was reported
- **Date** - date sampled (if available), otherwise analyzed date or memo/letter/report date
- **Sample #** - any sample number available to identify the sample from others
- **Density** - any bulk density or specific gravity associated with the particular reported chemical or radionuclide
- **Reported Value** - value associated with the constituent analyzed
- **Reported Unit** - unit associated with the constituent analyzed and the value obtained
- **Code** - A letter code indicating the general sample state/phase, defined below
- **Sample State** - a reiteration of the code, or additional sample characteristics
- **Source** - indication of the source of the data (ie. Braun, WASTREN, Raw, etc.)

Analyte/Radionuclide Information

- **Analyte/Radionuclide** - the analyte/radionuclide desired by the WHC ASA Source Term Inventory Validation. This information may be different than the reported chemical/radionuclide since analytes were pulled out of chemical compounds, or extrapolated as in the case with OH used for NaOH.

- **µg/L** (chemical table) - the reported value converted to micrograms/liter
- **Bq/L** (radionuclide table) - the reported value converted to Becquerel/liter
- **Bq/L Decayed** (radionuclide table) - the Bq/L value decayed from the date (described above) to 12/31/94.

Other row indicators and codes are defined here. Row indicators for the ASA Source Term Activity concentration and preliminary ASA Source Term Activity Concentration will divide the data into those data points above, and those below the chosen maximum concentrations. There is also a row indicator for the minimum plot limit. In addition, all the data was given a code to delineate sample type. These codes are as follows:

A	Salts
D	Suspended Solids
F	Filtrate
G	Sludge
I	Composite, sludge/composite
K	Saltcake
L	Liquid/Liquor, centrifuged decant, centrate
O	Other (must be accompanied with % solids)
P	Supernatant
R	Slurry
S	Solid (including: KOH fusion, acid wash, filtered or centrifuged solids, washed or fusion solids, slurry/solids, supernatant/solids)
T	Crust
U	Unknown
Y	Slurry/Sludge

Scatter Plot Symbols and Concentration Information

The symbols used on the scatter plots for the respective sample data sources are defined below:

o	-	most recent (highest value if many on that date) raw data per tank for that constituent
x	-	all other raw data; all other data from the WHC Characterization library, TCD, 241-B-110 and 241-U-110 core information
□	-	HTCE Inventory data, only available for a select number of Single-Shell Tank solid radionuclides and chemical analytes
Δ	-	TRAC data, only those points that are above the ASA Source Term Activity Concentration
B	-	Tank Sample Analysis Datafile (TSAD) (Braun Data)
W	-	WASTREN data

The unit of concentration for the chemical plots is microgram/liter (μg/L). Two different units of concentration are shown on the radionuclide plots, Becquerel/liter (Bq/L) and microcurie/liter (μCi/L). Note that the two axes do not show independent logarithmic scales, but a straight conversion from Bq/L to μCi/L. The conversion from Bq/L to μCi/L is given below, and is also given in the legend section of the plot.

$$\mu Ci/L = \frac{Bq/L}{3.7E+4}$$

A list of the 11 Radionuclide and 24 Chemical Analyte Scatter Plots (in order of appearance) is given below.

Radionuclide and Chemical Analyte Scatter Plots			
Radionuclides		**Chemical Analytes**	
Am-241	Americium-241	As - Arsenic	Na - Sodium
Co-60	Cobalt-60	Ba - Barium	NaOH - Sodium Hydroxide
Cs-137	Cesium-137	Be - Beryllium	Nd - Neodymium
Cm-244	Curium-244	Ca - Calcium	NH3 - Ammonia
Eu-154	Europium-154	Cd - Cadmium	Sb - Antimony
Np-237	Neptunium-237	Ce - Cerium	Se - Selenium
Pu-238	Plutonium-238	CN - Cyanide	Sr - Strontium
Pu-239/240	Plutonium-239/240	Co - Cobalt	Te - Tellurium
Pu-241	Plutonium-241	Cr+3 - Chromium $^{+3}$	Tl - Thallium
Sr-89/90	Strontium-89/90	Cr+6 - Chromium $^{+6}$	U - Uranium
Y-90	Yttrium-90	Dy - Dysprosium	V - Vanadium
		Hg - Mercury	
		La - Lanthanum	

Table 3: Tank 241-C-106 Radionuclide Solid Sample Data
(Sketch ES-SIX-R1)

Tank Waste Characterization Sample Information										Radionuclide Information		
Tank	Reported Radionuclide	Date	Sample #	Density	Reported Value	Reported Unit	Code	Sample State	Source	Radionuclide	Bq/L	Bq/L Decayed
C106	Cs-137	5/19/86	G1XCOOXX	1.43	330	ugm/gm	G	Sludge/Composite	Braun	Cs137	1.52E+12	1.25E+12
Maximum Plot Limit: 1.00E+12 Bq/L												
C106	Sr-89/90	10/10/74	RAT-C106-1		18800000	uCi/l	G	Sludge	Braun	Sr90	6.96E+11	4.28E+11
C106	Sr90	10/10/74			18800000	uCi/L	G	sludge	RAW	Sr90	6.96E+11	4.28E+11
C106	Sr-90	1/6/75	RAT-C106-5		18300000	uCi/l	G	Sludge	Braun	Sr90	6.77E+11	4.19E+11
C106	Sr90	7/1/77	5	2.44	4959016	uCi/kg	O		RAW	Sr90	4.48E+11	2.94E+11
C106	Sr-89/90	1/24/77	RAT-C106-3	2.44	12100000	uCi/l	G	Sludge	Braun	Sr90	4.48E+11	2.91E+11
C106	Sr90	1/24/77		2.44	12100000	uCi/L	G	sludge	RAW	Sr90	4.48E+11	2.91E+11
C-106	Sr90				6.883933219	Ci/L	S		Agnew	Sr90		2.55E+11
C106	Sr90	9/18/80		1.365	6470	uCi/g	I	H2O insoluble Wt. %	RAW	Sr90	3.27E+11	2.32E+11
C106	Y90						S		TRAC	Y90	1.33E+11	
C106	Sr90	5/1/87	3		1980000	uCi/kg	S		RAW	Sr90	1.17E+11	9.75E+10
C106	Sr90	5/19/86			1980	uCi/g	S	Core, solid	RAW	Sr90	1.17E+11	9.53E+10
C106	Sr90						S		TRAC	Sr90		9.41E+10
C106	Sr90	4/14/87		1.43	1980	uCi/g	S	solid	RAW	Sr90	1.05E+11	8.70E+10
C106	Sr89/90	5/19/86					G	sludge	Wastren	Sr90	1.05E+11	8.54E+10
C106	Sr-90	5/19/86	G1XCOOXX	1.43	1980	uCi/gm	G	Sludge/Composite	Braun	Sr90	1.05E+11	8.52E+10
C106	Cs137	4/1/90	1		504000	uCi/kg	S		RAW	Cs137	2.98E+10	2.67E+10
C106	Cs-137	1/6/75	RAT-C106-5		862000	uCi/l	G	Sludge	Braun	Cs137	3.19E+10	2.01E+10
C106	Cs-137	10/10/74	RAT-C106-1		862000	uCi/l	G	Sludge	Braun	Cs137	3.19E+10	2.00E+10
C106	Cs137	10/10/74			862000	uCi/L	G	sludge	RAW	Cs137	3.19E+10	2.00E+10
C106	Cs137	10/1/74			0.86	Ci/L	G	sludge	RAW	Cs137	3.18E+10	2.00E+10
C106	Co-60	5/19/86	G1XCOOXX	1.43	0.888	ugm/gm	G	Sludge/Composite	Braun	Co60	5.32E+10	1.72E+10
C106	Cs137	5/1/87	3		330000	uCi/kg	S		RAW	Cs137	1.95E+10	1.64E+10
C106	Cs137	5/19/86			330	uCi/g	S	Core, solid	RAW	Cs137	1.95E+10	1.60E+10
C106	Cs137	4/14/87		1.43	330	uCi/g	S	solid	RAW	Cs137	1.75E+10	1.46E+10
C106	Cs137	5/19/86					G	sludge	Wastren	Cs137	1.75E+10	1.44E+10
C106	Cs137	7/1/77	5	2.44	223361	uCi/kg	O		RAW	Cs137	2.02E+10	1.35E+10
C106	Cs-137	1/24/77	RAT-C106-3	2.44	545000	uCi/l	G	Sludge	Braun	Cs137	2.02E+10	1.33E+10
C106	Cs137	1/24/77		2.44	545000	uCi/L	G	sludge	RAW	Cs137	2.02E+10	1.33E+10
C106	Co-60	5/19/86	G1XCOOXX	1.43	0.555	ugm/gm	G	Sludge/Composite	Braun	Co60	3.33E+10	1.07E+10
C106	Cs137	9/1/80	4		213000	uCi/kg	O		RAW	Cs137	1.26E+10	9.07E+09
C106	Cs137	9/18/80		1.365	213	uCi/g	I	H2O insoluble	RAW	Cs137	1.08E+10	7.74E+09

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Table 3: Tank 241-C-106 Radionuclide Solid Sample Data
(Sketch ES-SIX-R1)

Tank Waste Characterization Sample Information										Radionuclide Information		
Tank	Reported Radionuclide	Date	Sample #	Density	Reported Value	Unit	Code	Sample State	Source	Radionuclide	Bq/L	Bq/L Decayed
C106	Sr90	9/18/80		1.365	133	uCi/g	I	H2O soluble Wt. %	RAW	Sr90	6.72E+09	4.77E+09
C-106	Cs137				0.127818678	Ci/L	S		Agnew	Cs137		4.73E+09
C106	Cs137	9/18/80		1.365	97.9	uCi/g	I	H2O soluble	RAW	Cs137	4.94E+09	3.56E+09
C106	Eu154	7/1/77	5	2.44	50410	uCi/kg	O		RAW	Eu154	4.55E+09	1.14E+09
C106	Pu239/240	9/1/80	4		5520	uCi/kg	O		RAW	Pu239/240	3.27E+08	
C106	Sr90	8/1/88	2		4030	uCi/kg	O		RAW	Sr90	2.39E+08	2.05E+08
C106	Sr90	7/22/88			4030	uCi/Kg	O		RAW	Sr90	2.39E+08	2.04E+08
C106	Pu239/240	5/19/86			3.05	uCi/g	S	Core, solid	RAW	Pu239/240	1.81E+08	
C106	Pu239/240	5/1/87	3		3050	uCi/kg	S		RAW	Pu239/240	1.81E+08	
C106	Pu-239/240	5/19/86	G1XCOOXX	1.43	3.05	uCi/gm	G	Sludge/Composite	Braun	Pu239/240	1.61E+08	
C106	Pu239/240	4/14/87		1.43	3.05	uCi/g	S	solid	RAW	Pu239/240	1.61E+08	
C106	Pu	10/10/74	RAT-C106-1		0.06	gm/l	G	Sludge	Braun	Pu239/240	1.58E+08	
C106	Pu	1/6/75	RAT-C106-5		0.06	gm/l	G	Sludge	Braun	Pu239/240	1.58E+08	
C106	Pu	1/24/77	RAT-C106-3	2.44	0.06	gm/l	G	Sludge	Braun	Pu239/240	1.58E+08	
C106	Pu	1/24/77		2.44	0.06	g/l	G	Sludge	RAW	Pu239/240	1.58E+08	
C106	Pu	1/6/75			0.06	g/l	G	Sludge	RAW	Pu239/240	1.58E+08	
C106	Pu-239/240	5/19/86	G1XCOOXX	1.43	2.69	uCi/gm	G	Sludge/Composite	Braun	Pu239/240	1.42E+08	
C106	Pu239/240	7/1/77	5	2.44	1530	uCi/kg	O		RAW	Pu239/240	1.38E+08	
C106	Pu241						S		TRAC	Pu241		1.08E+08
C106	Am241						S		TRAC	Am241		6.91E+07
C106	Am241	5/19/86			1.05	uCi/g	S	Solids	RAW	Am241	6.22E+07	6.13E+07
C106	Pu239						S		TRAC	Pu239/240	5.97E+07	
C106	Am241	4/17/87		1.43	1.05	uCi/g	S	solid	RAW	Am241	5.56E+07	5.49E+07
C106	Am241	4/14/87		1.43	1.05	uCi/g	I	Composite	RAW	Am241	5.56E+07	5.49E+07
C106	Am241	5/19/86					G	sludge	Wastren	Am241	5.56E+07	5.48E+07
C106	Am-241	5/19/86	G1XCOOXX	1.43	1.05	uCi/gm	G	Sludge/Composite	Braun	Am241	5.56E+07	5.48E+07
C106	Eu154	9/15/75	T-8059	1.8	13800	uCi/gal	G	sludge	RAW	Eu154	1.35E+08	2.93E+07
C106	Cs137	8/1/88	2		536	uCi/kg	O		RAW	Cs137	3.17E+07	2.74E+07
C106	Cs137	7/22/88			536	uCi/Kg	O		RAW	Cs137	3.17E+07	2.74E+07
C106	Co60	4/1/90	1		788	uCi/kg	S		RAW	Co60	4.66E+07	2.50E+07
C106	Co60	4/14/87		1.43	0.88	uCi/g	I	Composite	RAW	Co60	4.66E+07	1.69E+07
C106	Co60	5/19/86			0.88	uCi/g	S	Solids	RAW	Co60	5.21E+07	1.68E+07
C106	Co60	5/19/86					G	sludge	Wastren	Co60	4.50E+07	1.45E+07

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Table 3: Tank 241-C-106 Radionuclide Solid Sample Data
(Sketch ES-SIX-R1)

Tank Waste Characterization Sample Information										Radionuclide Information		
Tank	Reported Radionuclide	Date	Sample #	Density	Reported Value	Reported Unit	Code	Sample State	Source	Radionuclide	Bq/L	Bq/L Decayed
C106	Co60	5/1/87	3		560	uCi/kg	S		RAW	Co60	3.32E+07	1.21E+07
Minimum Plot Limit: 1.00E+07 Bq/L												
C106	Pu238						S		TRAC	Pu238		1.38E+06
C106	Pu	9/15/75	T-8059	1.8	0.00174	gm/gal	S	Cruddy	RAW	Pu239/240	1.21E+06	
C106	Sr90	4/23/80			28.9	Ci/L	G	sludge	RAW	Sr90	1.07E+06	7.51E+05
C106	Eu154	8/1/88	2		14.4	uCi/kg	O		RAW	Eu154	8.52E+05	5.13E+05
C106	Eu154	7/22/88			14.4	uCi/Kg	O		RAW	Eu154	8.52E+05	5.12E+05
C106	Sr90	9/1/80	4		6.47	uCi/kg	O		RAW	Sr90	3.83E+05	2.71E+05
C106	Co60	8/1/88	2		1.15	uCi/kg	O		RAW	Co60	6.81E+04	2.94E+04
C106	Co60	7/22/88			1.15	uCi/Kg	O		RAW	Co60	6.81E+04	2.93E+04
C106	Cs137	4/23/80			1.08	Ci/L	G	sludge	RAW	Cs137	4.00E+04	2.85E+04
C106	Np237						S		TRAC	Np237	2.11E+02	
C106	Am-241	5/19/86	G1XCOOXX	1.43	0	uCi/gm	G	Sludge/Composite	Braun	Am241	0.00E+00	0.00E+00

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Table 4: Tank 241-C-106 Toxic Chemical Solid Sample Data Table
(Sketch ES-SIX-C1)

Tank Waste Characterization Sample Information										Analyte Information	
Tank	Reported Chemical	Date	Sample #	Density	Reported Value	Unit	Code	Sample State	Source	Analyte	ug/L
Maximum Plot Limit: 1.00E+09 ug/L											
C106	OH				2629936.2	g-moles	S		TRAC	NaOH	5.55E+08
C106	Na				3089936.2	g-moles	S		TRAC	Na	3.75E+08
C106	OH-				7.318287437	moles/L	S		Agnew	NaOH	2.93E+08
C106	Na	4/1/90			273	g/L	G	Sludge	Wastren	Na	2.73E+08
C106	Na	2/1/91			156000	mg/kg	S	KOH Fusion	RAW	Na	2.50E+08
C106	Na	4/1/90	1		156000	mg/kg	S		RAW	Na	2.50E+08
C106	Na	5/19/86			117000	ug/g	I	Composite	RAW	Na	1.87E+08
C106	Na	4/1/87	3		117000	mg/kg	S		RAW	Na	1.87E+08
C106	Na	5/19/86		1.43	117000	ugm/gm	I	Sludge/Composite	Braun	Na	1.67E+08
C106	Na	4/17/87	G1xcxxxxR-1	1.43	117000	ug/g	I	Composite	RAW	Na	1.67E+08
C106	Na	4/14/87		1.43	117000	uG/G	S		RAW	Na	1.67E+08
C106	Na+				5.501586236	moles/L	S		Agnew	Na	1.27E+08
C106	Na	1/24/77		2.44	4.9	moles/l	G	Sludge	Braun	Na	1.13E+08
C106	Na	1/24/77		2.44	4.9	M/L	G	Sludge	RAW	Na	1.13E+08
C106	Na	5/19/86		1.22	94900	mg/L	I	Composite	RAW	Na	9.49E+07
C106	Na	7/1/77	5		46189	mg/kg	S		RAW	Na	7.39E+07
C106	Na	9/1/80	4		35800	mg/kg	S		RAW	Na	5.73E+07
C106	Na	7/22/88			16.1	g/kg	G	Sludge	RAW	Na	2.58E+07
C106	Na	8/1/88	2		16100	mg/kg	S		RAW	Na	2.58E+07
C106	Ca	5/19/86			11900	ug/g	I	Composite	RAW	Ca	1.90E+07
C106	Ca	4/1/87	3		11900	mg/kg	S		RAW	Ca	1.90E+07
C106	Ca	5/19/86		1.43	11900	ugm/gm	I	Sludge/Composite	Braun	Ca	1.70E+07
C106	Ca	4/17/87	G1xcxxxxR-1	1.43	11900	ug/g	I	Composite	RAW	Ca	1.70E+07
C106	Ca	4/14/87		1.43	11900	uG/G	S		RAW	Ca	1.70E+07
C106	Cr	1/24/77		2.44	0.2	moles/l	G	Sludge	Braun	Cr	1.04E+07
C106	Cr	1/24/77		2.44	0.2	M/L	G	Sludge	RAW	Cr	1.04E+07
C106	Ca	10/10/74			0.2	moles/l	G	Sludge	Braun	Ca	8.02E+06
C106	Ca	1/6/75			0.2	moles/l	G	Sludge	Braun	Ca	8.02E+06
C106	Ca	1/6/75			0.2	M	G	Sludge	RAW	Ca	8.02E+06
C106	Ba	5/19/86			4890	ug/g	I	Composite	RAW	Ba	7.82E+06
C106	Ba	4/1/87	3		4890	mg/kg	S		RAW	Ba	7.82E+06
C106	Ba	5/19/86		1.43	4890	ugm/gm	I	Sludge/Composite	Braun	Ba	6.99E+06

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Table 4: Tank 241-C-106 Toxic Chemical Solid Sample Data Table
(Sketch ES-SIX-C1)

Tank Waste Characterization Sample Information										Analyte Information	
Tank	Reported Chemical	Date	Sample #	Density	Reported Value	Reported Unit	Code	Sample State	Source	Analyte	ug/L
C106	Ba	4/17/87	G1xcxxxxR-1	1.43	4890	ug/g	I	Composite	RAW	Ba	6.99E+06
C106	Ba	4/14/87		1.43	4890	ug/g	S		RAW	Ba	6.99E+06
C106	Cr	7/1/77	5		4262	mg/kg	S		RAW	Cr	6.82E+06
C106	Sb	4/1/90			5.08	g/L	G	Sludge	Wastren	Sb	5.08E+06
C106	Sb	2/1/91			2900	mg/kg	S	KOH Fusion	RAW	Sb	4.64E+06
C106	Ba	7/1/77	5		2246	mg/kg	S		RAW	Ba	3.59E+06
C106	Ca	4/1/90			3.33	g/L	G	Sludge	Wastren	Ca	3.33E+06
C106	Cr	4/1/90			3.06	g/L	G	Sludge	Wastren	Cr	3.06E+06
C106	Ca	2/1/91			1900	mg/kg	S	KOH Fusion	RAW	Ca	3.04E+06
C106	Ca	4/1/90	1		1900	mg/kg	S		RAW	Ca	3.04E+06
C106	Cr	2/1/91			1750	mg/kg	S	KOH Fusion	RAW	Cr	2.80E+06
C106	Cr	4/1/90	1		1750	mg/kg	S		RAW	Cr	2.80E+06
C106	U				0.010846239	moles/L	S		Agnew	U	2.58E+06
C106	Cr	7/22/88			1560	mg/kg	G	Sludge	RAW	Cr	2.50E+06
C106	Cr	8/1/88	2		1560	mg/kg	S		RAW	Cr	2.50E+06
C106	Se	4/1/90			2.45	g/L	G	Sludge	Wastren	Se	2.45E+06
C106	Ca	7/22/88			1480	mg/kg	G	Sludge	RAW	Ca	2.37E+06
C106	Ca	8/1/88	2		1480	mg/kg	S		RAW	Ca	2.37E+06
C106	Se	2/1/91			1400	mg/kg	S	KOH Fusion	RAW	Se	2.24E+06
C106	Cr	9/1/80	4		1350	mg/kg	S		RAW	Cr	2.16E+06
C106	Tl	4/1/90			2.1	g/L	G	Sludge	Wastren	Tl	2.10E+06
C106	Tl	2/1/91			1200	mg/kg	S	KOH Fusion	RAW	Tl	1.92E+06
C106	Cr	5/19/86			984	ug/g	I	Composite	RAW	Cr	1.57E+06
C106	Cr	4/1/87	3		984	mg/kg	S		RAW	Cr	1.57E+06
C106	U	4/1/90	1		944	mg/kg	S		RAW	U	1.51E+06
C106	Cr	5/19/86		1.43	984	ugm/gm	I	Sludge/Composite	Braun	Cr	1.41E+06
C106	Cr	4/17/87	G1xcxxxxR-1	1.43	984	ug/g	I	Composite	RAW	Cr	1.41E+06
C106	Cr	4/14/87		1.43	984	ug/g	S		RAW	Cr	1.41E+06
C106	Nd	4/1/90			0.98	g/L	G	Sludge	Wastren	Nd	9.80E+05
C106	U	5/19/86		1.22	958	mg/L	I	Composite	RAW	U	9.58E+05
C106	Nd	2/1/91			560	mg/kg	S	KOH Fusion	RAW	Nd	8.96E+05
C106	Ce	4/1/90			0.858	g/L	G	Sludge	Wastren	Ce	8.58E+05
C106	Ce	2/1/91			490	mg/kg	S	KOH Fusion	RAW	Ce	7.84E+05

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Table 4: Tank 241-C-106 Toxic Chemical Solid Sample Data Table
(Sketch ES-SIX-C1)

Tank Waste Characterization Sample Information										Analyte Information	
Tank	Reported Chemical	Date	Sample #	Density	Reported Value	Unit	Code	Sample State	Source	Analyte	ug/L
C106	Cd	7/1/77	5		461	mg/kg	S		RAW	Cd	7.38E+05
C106	As	4/1/90			0.683	g/L	G	Sludge	Wastren	As	6.83E+05
C106	As	2/1/91			390	mg/kg	S	KOH Fusion	RAW	As	6.24E+05
C106	Ba	4/1/90			0.613	g/L	G	Sludge	Wastren	Ba	6.13E+05
C106	Cd	5/19/86			370	ug/g	I	Composite	RAW	Cd	5.92E+05
C106	U	5/19/86		1.43	409	ugm/gm	I	Sludge/Composite	Braun	U	5.85E+05
C106	U	4/17/87	G1xcxxxxR-1	1.43	409	ug/g	I	Composite	RAW	U	5.85E+05
C106	Ba	2/1/91			350	mg/kg	S	KOH Fusion	RAW	Ba	5.60E+05
C106	Ba	4/1/90	1		350	mg/kg	S		RAW	Ba	5.60E+05
C106	Ba	7/22/88			345	mg/kg	G	Sludge	RAW	Ba	5.52E+05
C106	Ba	8/1/88	2		345	mg/kg	S		RAW	Ba	5.52E+05
C106	Cd	5/19/86		1.43	370	ugm/gm	I	Sludge/Composite	Braun	Cd	5.29E+05
C106	Cd	4/17/87	G1xcxxxxR-1	1.43	370	ug/g	I	Composite	RAW	Cd	5.29E+05
C106	Cd	4/14/87		1.43	370	ug/g	S		RAW	Cd	5.29E+05
C106	Sr	10/10/74			0.006	moles/l	G	Sludge	Braun	Sr	5.26E+05
C106	Sr	1/6/75			0.006	moles/l	G	Sludge	Braun	Sr	5.26E+05
C106	Hg	7/22/88			327	mg/kg	G	Sludge	RAW	Hg	5.23E+05
C106	Cd	9/1/80	4		210	mg/kg	S		RAW	Cd	3.36E+05
C106	Sr	4/1/90			0.193	g/L	G	Sludge	Wastren	Sr	1.93E+05
C106	Sr	2/1/91			110	mg/kg	S	KOH Fusion	RAW	Sr	1.76E+05
C106	Sr	4/1/90	1		110	mg/kg	S		RAW	Sr	1.76E+05
C106	Sr	5/19/86			103	ug/g	I	Composite	RAW	Sr	1.65E+05
C106	Sr	5/19/86		1.43	103	ugm/gm	I	Sludge/Composite	Braun	Sr	1.47E+05
C106	Sr	4/17/87	G1xcxxxxR-1	1.43	103	ug/g	I	Composite	RAW	Sr	1.47E+05
C106	Sr	4/14/87		1.43	103	uG/G	S		RAW	Sr	1.47E+05
C106	CN-	7/22/88			60	mg/kg	G	Sludge	RAW	CN	9.60E+04
C106	Ba				118	g-moles	S		TRAC	Ba	8.55E+04
C106	Cd	7/22/88			48	mg/kg	G	Sludge	RAW	Cd	7.68E+04
C106	Cd	8/1/88	2		48	mg/kg	S		RAW	Cd	7.68E+04
C106	Hg	7/22/88			42	mg/kg	G	Sludge	RAW	Hg	6.72E+04
C106	As	7/22/88			37	mg/kg	G	Sludge	RAW	As	5.92E+04
C106	As	8/1/88	2		37	mg/kg	S		RAW	As	5.92E+04
C106	Cd	5/19/86		1.22	25.2	mg/L	I	Composite	RAW	Cd	2.52E+04

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Table 4: Tank 241-C-106 Toxic Chemical Solid Sample Data Table
(Sketch ES-SIX-C1)

Tank Waste Characterization Sample Information										Analyte Information	
Tank	Reported Chemical	Date	Sample #	Density	Reported Value	Unit	Code	Sample State	Source	Analyte	ug/L
C106	Cd	4/1/87	3		12	mg/kg	S		RAW	Cd	1.92E+04
C106	V	7/22/88			12	mg/kg	G	Sludge	RAW	V	1.92E+04
C106	V	7/22/88			12	mg/kg	G	Sludge	RAW	V	1.92E+04
C106	Cd	5/19/86		1.43	12	ugm/gm	I	Sludge/Composite	Braun	Cd	1.72E+04
C106	Co	7/22/88			9.7	mg/kg	G	Sludge	RAW	Co	1.55E+04
C106	Ca	5/19/86		1.22	11.4	mg/L	I	Composite	RAW	Ca	1.14E+04
Minimum Plot Limit: 1.00E+04 ug/L											
C106	Co	5/19/86			4.81	ug/g	I	Composite	RAW	Co	7.70E+03
C106	Co	5/19/86		1.43	4.81	ugm/gm	I	Sludge/Composite	Braun	Co	6.88E+03
C106	Co	4/17/87	G1xcxxxxR-1	1.43	4.81	ug/g	I	Composite	RAW	Co	6.88E+03
C106	Co	4/14/87		1.43	4.81	uG/G	S		RAW	Co	6.88E+03
C106	Cr	5/19/86		1.22	6.2	mg/L	I	Composite	RAW	Cr	6.20E+03
C106	Ba	5/19/86		1.22	5	mg/L	I	Composite	RAW	Ba	5.00E+03
C106	U	1/24/77		2.44	0.004	gm/l	G	Sludge	Braun	U	4.00E+03
C106	U	7/1/77	5		1.64	mg/kg	S		RAW	U	2.62E+03
C106	Be	7/22/88			0.72	mg/kg	G	Sludge	RAW	Be	1.15E+03
C106	Be	8/1/88	2		0.72	mg/kg	S		RAW	Be	1.15E+03
C106	Cr+++				3.44743E-08	moles/L	S		Agnew	Cr+3	1.79E+00
C106	Sr				7.41E-09	g-moles	S		TRAC	Sr	3.43E-06

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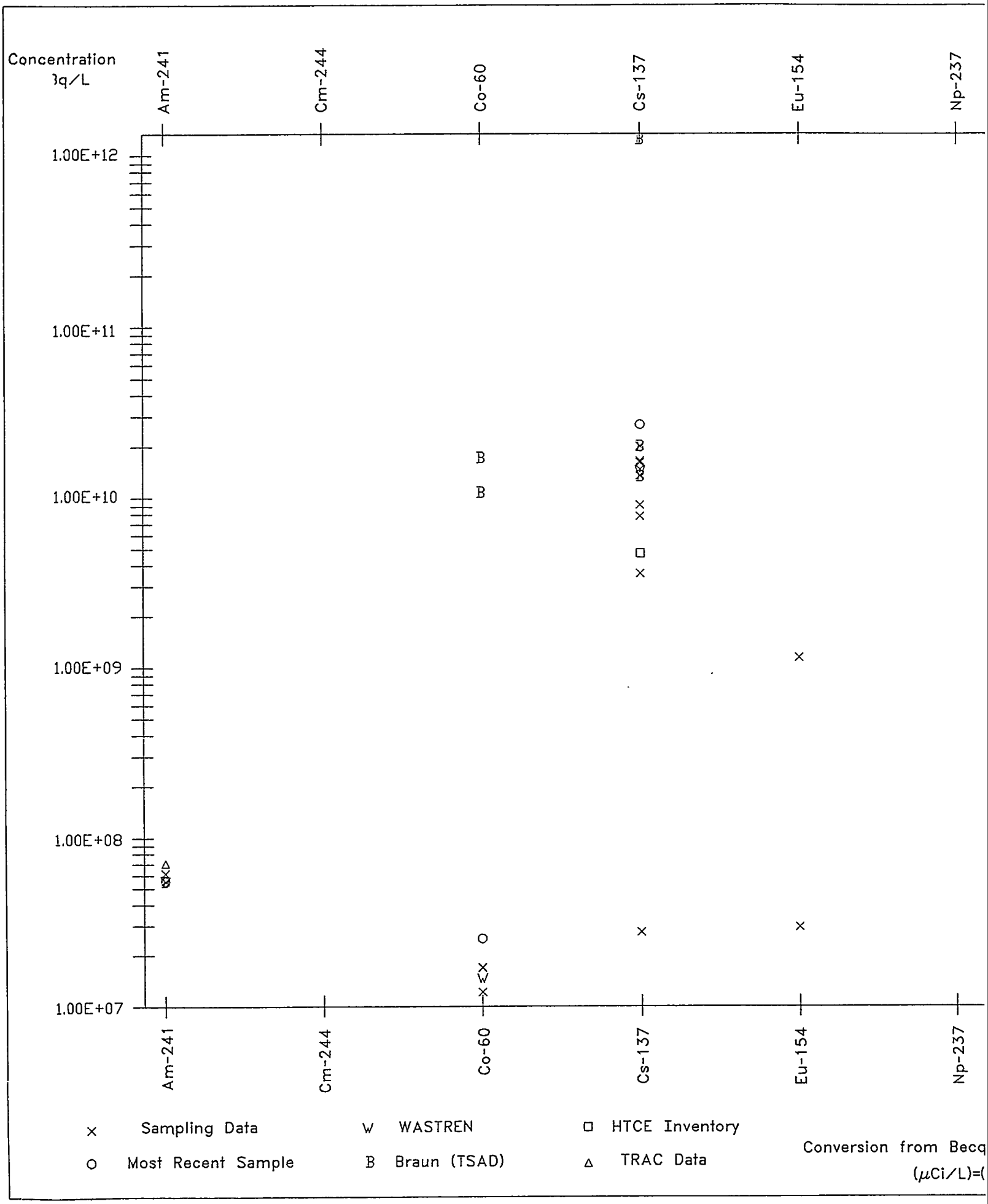
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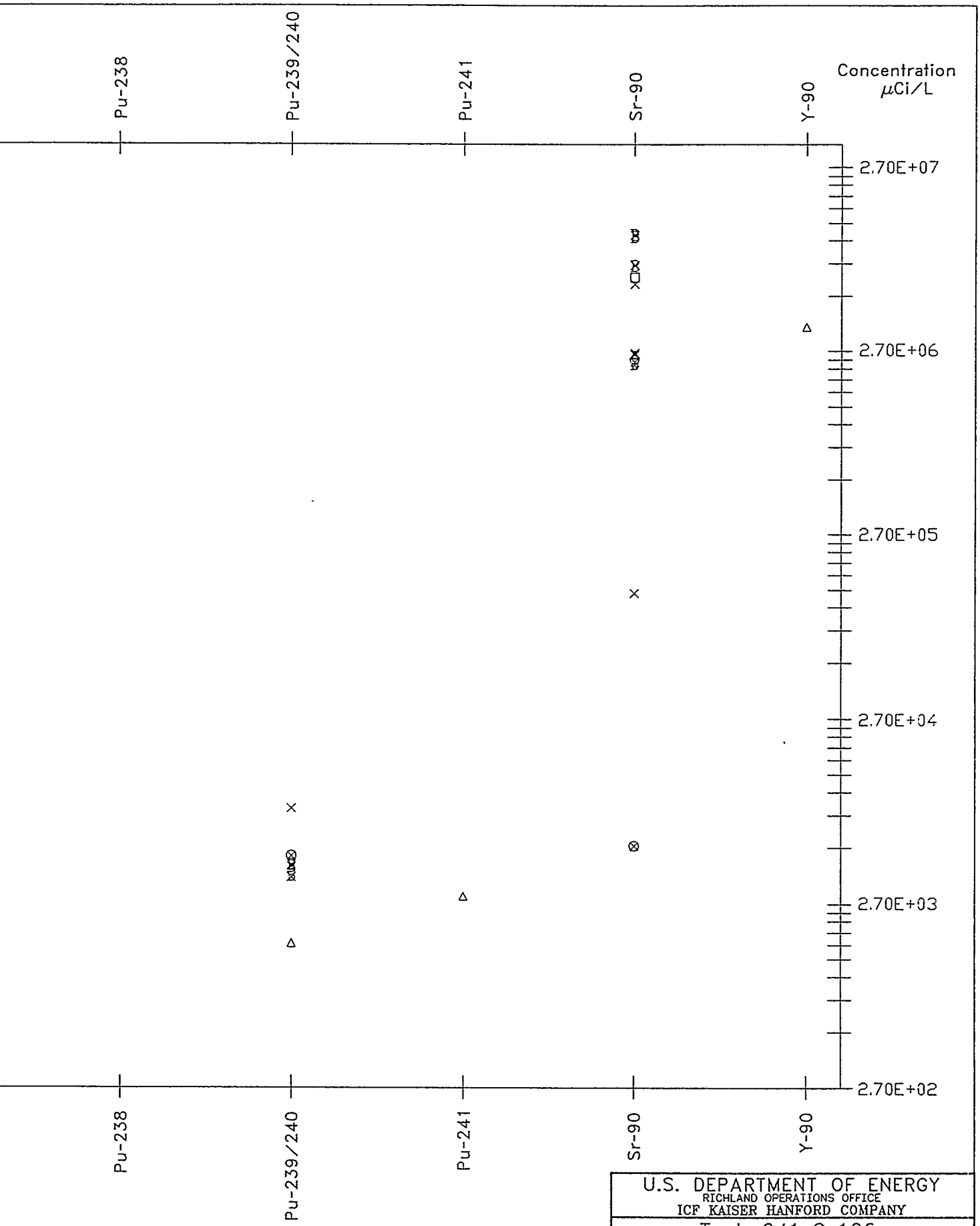
1.00E+10
1.00E+09
1.00E+08
1.00E+07
Sampling Data
Most Recent Sample
WASTREN
Braun (TSAD)
HTCE Inventory
TRAC Data
Conversion from Becq
(μCi/L)=(



rel/Liter to micro Curie/Liter
/L)/(3.7E+4)

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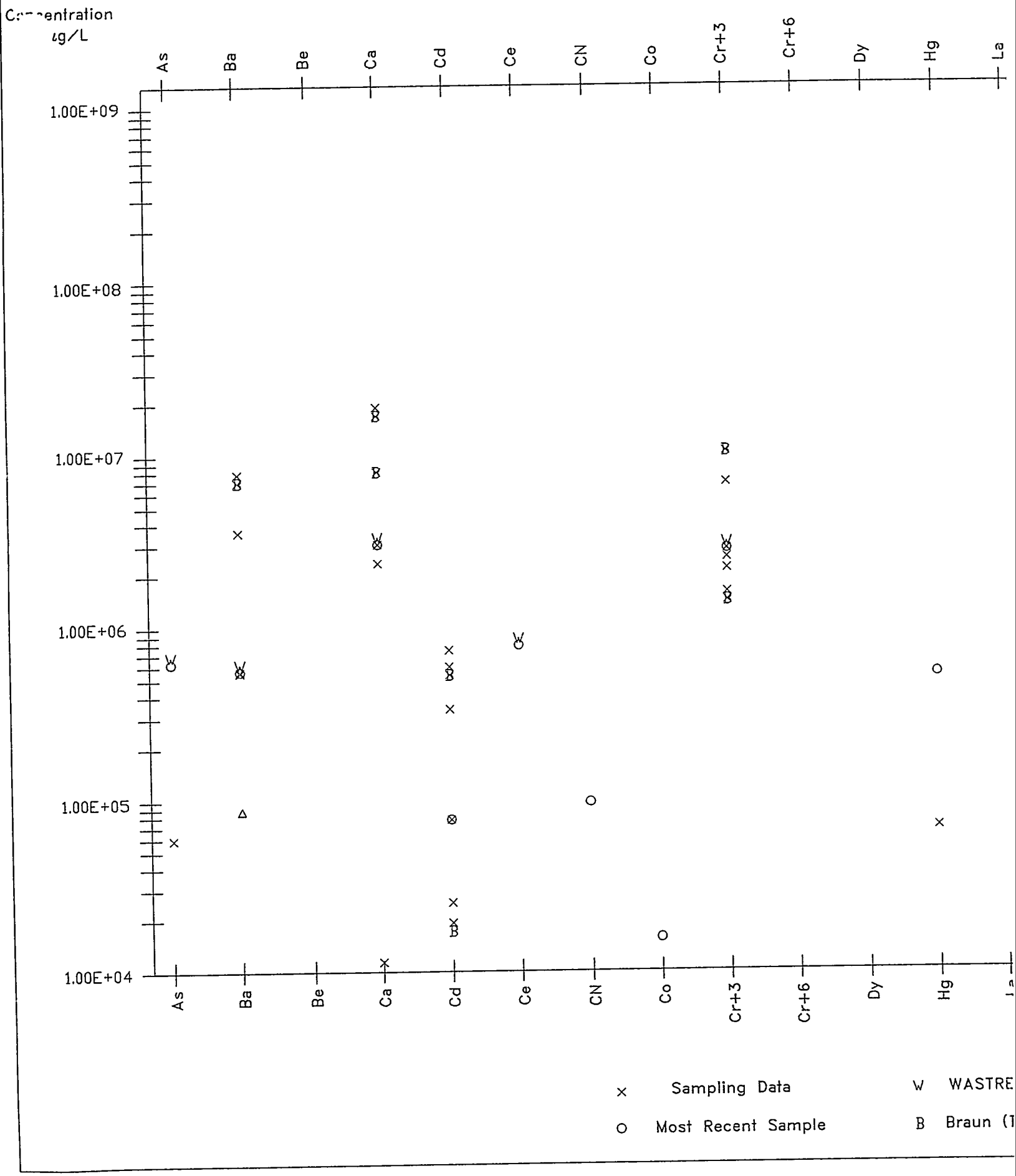
RICHLAND OPERATIONS OFFICE
ICF KAISER HANFORD COMPANY

Tank 241-C-106
Radionuclide Solids

PROJECT C-106 Sample Data and Plots
Drawing No. ES-SIX-R1 | JOB NO. E34274 | Date 2/10/95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Ba
Be
Ca
Cd
Ce
CN
Co
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Dy
Hg
La
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1.00E+07
1.00E+06
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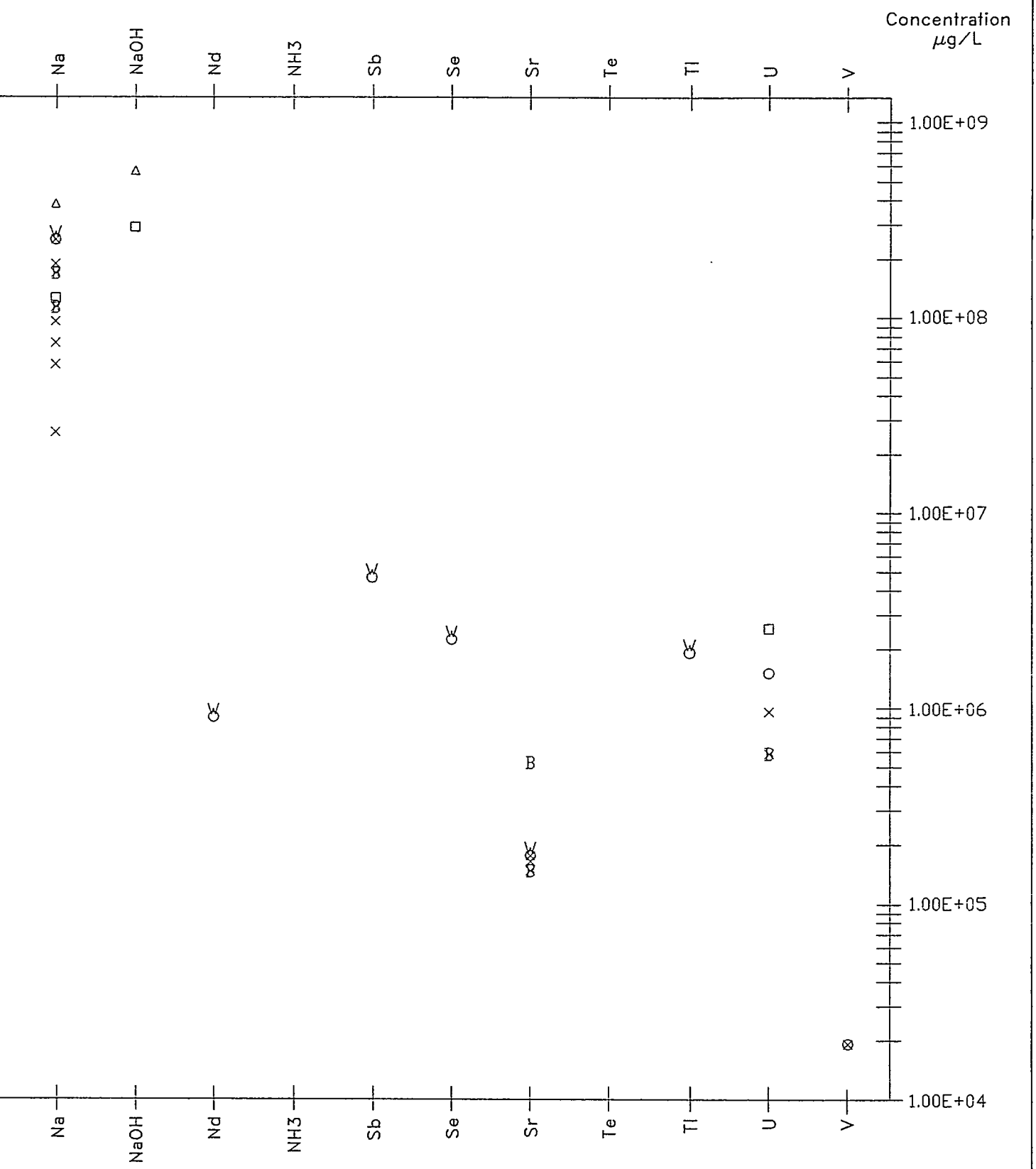
1.00E+04
Sampling Data
Most Recent Sample
W WASTRE
B Braun (1



□ HTCE Inventory

AD) △ TRAC Data

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Tank 241-C-106
Chemical Solids

PROJECT C-106 Sample Data and Plots

Drawing No.	ES-SIX-C1	JOB NO.	E34274	Date	2/9/95