

Targeted Testing Methodology

2014 – Present

CEMP conducts tritium testing near stations located in the regional groundwater flow system downgradient of the NNSS

Location	Tritium Results from CEMP offsite water tests (³ H - pCi/L)									
									2015	2014
Amargosa Valley									<MDC	<MDC
Beatty									<MDC	<MDC
Sarcobatus Flats									<MDC	<MDC
Tecopa									<MDC	<MDC

All samples are taken from well water.

The samples are analyzed using unenriched scintillation counting. The decision level (L_C) for this counting process was less than 186 picocuries per liter (pCi/L). The L_C is established solely based on the variability of multiple measures of samples used to establish laboratory background. If a sample exceeds this threshold, then it is considered to be distinguishable from background. The MDC for tritium was approximately 349 pCi/L and is a more rigorous threshold that dictates that the sample be distinguishable from background at a confidence of 95%. The MDC considers both the variability associated with multiple measures of the background as well as the variability associated with multiple measures of the sample itself. The L_C and the MDC are less than 1% and 2% of the EPA limit for tritium in drinking water of 20,000 pCi/L, respectively.

L_C : the counts of radioactivity (or concentration level of a radionuclide) in a sample that must be exceeded before there is a specified level of confidence (typically 95 or 99 percent) that the sample contains radioactive material above the background; called the Critical Level or the decision level.

MDC: minimum detectable concentration – also known as the lower limit of detection, the smallest amount of radioactive material in a sample that can be quantitatively distinguished from background radiation in the sample with 95 percent confidence.

For additional information see the most recent Nevada National Security Site Environmental Report, available at <http://www.nv.energy.gov/library/publications/aser.aspx>.