Table 1. Gross Alpha Analytical Results for the Second Quarter of Calendar Year 2001
(Average analytical error, +/− 0.0007)

Station	Minimum (pCi/m^3)	Maximum (pCi/m^3)	Average (pCi/m^3)	1997 Average (pCi/m^3)
Las Vegas	0.0018	0.0084	0.0047	0.0020
Henderson	0.0025	0.0068	0.0041	0.0020
Boulder City	0.0022	0.0079	0.0047	0.0027
Overton	0.0018	0.0061	0.0039	0.0018
St. George	0.0019	0.0037	0.0030	0.0025
Cedar City	0.0032	0.0076	0.0059	0.0024
Milford	0.0015	0.0038	0.0027	0.0015
Delta	0.0017	0.0037	0.0027	0.0012
Pioche	0.0020	0.0043	0.0027	0.0014
Caliente	0.0009	0.0033	0.0027	0.0024
Alamo	0.0026	0.0074	0.0046	0.0022
Rachel	0.0009	0.0087	0.0034	0.0029
Tonopah	0.0017	0.0055	0.0035	0.0018
Goldfield	0.0019	0.0046	0.0030	0.0022
Beatty	0.0020	0.0071	0.0040	0.0024
Indian Springs	0.0017	0.0039	0.0026	0.0013
Amargosa	0.0032	0.0079	0.0052	0.0018
Pahrump	0.0014	0.0053	0.0038	0.0016

Table 2. Gross Beta Analytical Results for the Second Quarter of Calendar Year 2001. (Average analytical error, +/− 0.003)

Station	Minimum (pCi/m^3)	Maximum (pCi/m^3)	Average (pCi/m^3)	1997 Average (pCi/m^3)
Las Vegas	0.020	0.046	0.027	0.014
Henderson	0.019	0.048	0.027	0.015
Boulder City	0.020	0.037	0.026	0.018
Overton	0.020	0.033	0.026	0.017
St. George	0.020	0.034	0.026	0.022
Cedar City	0.017	0.037	0.027	0.014
Milford	0.018	0.056	0.026	0.016
Delta	0.018	0.033	0.025	0.016
Pioche	0.017	0.031	0.024	0.014
Caliente	0.019	0.035	0.026	0.013
Alamo	0.018	0.076	0.029	0.015
Rachel	0.015	0.036	0.026	0.015
Tonopah	0.018	0.049	0.027	0.013
Goldfield	0.019	0.033	0.025	0.014
Beatty	0.019	0.035	0.026	0.015
Indian Springs	0.011	0.044	0.025	0.014
Amargosa	0.020	0.032	0.027	0.015
Pahrump	0.019	0.052	0.027	0.014

Quarterly Report of Analytical Results for the CEMP Air Sampling Network

The CEMP air sampling network is designed to monitor and collect radioactive airborne particles from NTS and non-NTS activities, as well as background environmental sources. This report is provided to the station managers as a summary of the results from the analysis of the air samples they have collected as part of the environmental monitoring program.

In general, the CEMP air sampling network is comprised of 18 continuously operating sampling stations. Each station is equipped with a low volume air sampler to collect particulate radionuclides on glass fiber filter papers. Ideally, the samples are collected on a weekly basis with a target collection time of 168 hours. The samplers are calibrated on a monthly basis by DRI to maintain a collection rate of 2.0 cubic feet per minute. All pertinent information such as actual collection times, variations in flow rate, power outages, or other information which documents the integrity of the sample is recorded by the station managers. The air filters are analyzed by an independent laboratory for gross alpha/beta activity as well as high resolution gamma spectrometry. The filters are composited on a quarterly basis for the gamma analysis only after the gross alpha/beta analyses have been completed. As a result of this lag time, the gamma results in his report are only for the first quarter of CY2001.

The principle reporting units used in the U.S. for the measurement of radioactivity in the atmospheric environment is pCi/m^3 (picocuries per cubic meter). DRI receives its data from the lab as microcuries per filter which is then recalculated to microcuries per milliliter based on the information provided by the station managers as well as monthly calibration results. This is the notation used for DRI internal data bases and annual reports to DOE. For the ease in constructing the tables contained in this report, as well as hopefully the ease of comparison among stations and/or previous results, the units of pCi/m^3 are used.

A summary of the second quarter CY2001 analytical results for gross alpha and beta results are found in Tables 1 and 2. These tables show the minimum, maximum, and average values for each of the stations of the air sampling network. The last column shows an average annual value from previous years (in this case 1997) for comparison purposes. Even though the second quarter alpha results reflect generally higher results than CY2000 data, the results (Table 1) continue to fall within the same ranges as historical data. The gross beta results for the second quarter (Table 2) remain similar to previous analyses. These data set continue to demonstrate the amount of variability expected from these type of analyses.

The first quarter gamma results for CY2001 are shown in Table 3. All of the samples are again gamma spectrum negligible with respect to Cs-137 (i.e. gamma emitting radionuclides were not detected) with the exeception of Beryllium(Be)-7 and Lead(Pb)-210. It is worthwhile to repeat that Be-7 and Pb-210 are naturally occurring radiological elements of our atmospheric and geological environment. The detection of these elements are most likely a result of the large sample volume represented by the compositing of the filters on a quarterly basis.

The TLD results for the second quarter of CY2001 are shown in Table 4. This quarter shows an exposure rate lower than CY2000 data as well as the 1998 data shown for comparison. The 1998 PIC exposure rate is also shown for comparison because like the TLD it is a measure of gamma activity. As with historical data, the TLD's are consistently lower than the PIC results. This demonstrates the differences in the two techniques of gamma detection. The main reason for this difference is that the PIC is not only more sensitive to lower energy gamma radiation, but is designed to measure exposure "rate". On the other hand, the TLD is designed to measure radiation on a cumulative basis.

Finally, as station managers, your input on the contents of these reports are welcome and encouraged. We are interested in anything you feel would be helpful for you to interpret the data or to enable you to explain the information to someone in your community not familiar with the program.