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RESULTS OF WELL SAMPLING

11/04/91

DOE-232-92
DOE-FN CITIZEN
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LETTER



Department of Energy
Fernald Environmental Management Project
P.O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 738-6357

DOE-232-92

November 4, 1991

Mrs. Pamela Dunn
[REDACTED]

Dear Mrs. Dunn:

The purpose of this letter is to provide you with the results of the water sampling conducted by Westinghouse Environmental Management Company of Ohio (WEMCO). In response to your request, a water sample was collected from [REDACTED] Road on September 9, 1990. The sample has been analyzed for various radionuclide concentrations. The results have been delayed due to the time involved in sample analysis, and receipt and validation of data from an outside laboratory. The results of the analyses are expressed on page three in picocuries of a particular radionuclide per liter of water (pCi/L). Picocuries per liter are the units used to express groundwater data in the Annual Environmental Report.

There are no current regulatory standards for either private or public drinking water supplies for most of the radionuclides analyzed in your sample. However, the U.S. Environmental Protection Agency (USEPA) has published a standard for gross beta activity in drinking water supplies of 4 millirem (mrem) per year. Millirem is an accumulated dose measurement over a specified time, and therefore a comparison with laboratory results is not feasible. The Ohio Department of Health (ODH) has established an action guideline at 15 pCi/L for gross beta in drinking water. For comparison purposes, 15 pCi/L is used in this report. The USEPA standard for gross alpha activity is 15 pCi/L.

The standard set by the USEPA for radium-226 + radium-228 in public drinking water supplies is 5 pCi/L. For uranium, there are other published data which provide guidelines for comparison. A U.S. Geological Survey study (J.D. Hem, 1970, Geological Survey Water-Supply Paper 1473) reported a range of uranium content of less than 0.068 to 6.8 pCi/L in most natural water within the United States. Also, the EPA has proposed an interim drinking water standard for total uranium of 13.5 pCi/L. This proposed standard is currently under review and has not yet become effective.

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The radionuclide concentrations in your sample are within the established standards and published guidelines. Also, for those radionuclides not listed in published guidelines, a comparison of data with other water samples does not indicate any unusual concentrations in your water sample.

If you have any questions regarding the results reported to you in this letter or on any aspect of our environmental monitoring program, please call me at 738-6160.

Sincerely,



Wally Quaider, Branch Chief
Environmental Compliance

FO:Quaider

Enclosure: As stated

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DUNN WELL WATER RESULTS

RADIONUCLIDE	RESULT (pCi/L)	STANDARD (pCi/L)
Radium-226	<1.0 ^a .	5.0 ^b .
Radium-228	<3.0 ^a .	5.0 ^b .
Total Thorium	<1.63 ^a .	N/A ^c .
Total Uranium	<0.68 ^a .	N/A ^d .
Neptunium-237	<0.38 ^a .	N/A ^e .
Strontium-90	<0.18 ^a .	8.0 ^e .
Gross Alpha	<8.6 ^a .	15.0 ^e .
Gross Beta	<11.0 ^a .	15.0 ^f .

^a The "<" (less than) symbol indicates that the laboratory was unable to detect this particular radionuclide in the water sample. The number following this symbol represents the lowest concentration the laboratory is able to detect. For example, a sample result of <0.68 means that the laboratory can only detect as low as 0.68 pCi/L, and your sample may contain between 0.0 to 0.68 pCi/L of that radionuclide.

^b The USEPA standard of 5.0 pCi/L is a cumulative total between radium-226 and radium-228.

^c N/A: No applicable standard or guideline exist.

^d The Environmental Protection Agency (EPA) has proposed an interim drinking water standard for total uranium of 13.5 pCi/L.

^e Code of Federal Regulations, Title 40, Part 141, National Interim Primary Drinking Water Regulations - Subpart B - Maximum Contaminant Levels, July 1, 1984.

^f The EPA standard for gross beta is 4 mrem, a measurement of dose; For comparison purposes, the Ohio Department of Health action level of 15 pCi/L is provided.