

Illinois Emergency Management Agency

**Summary of Analytical Results
Environmental Monitoring for Radionuclides in the
Environs of Honeywell Metropolis Works**

November 5, 2014

Preface

The Illinois Emergency Management Agency Bureau of Radiation Safety (IEMA) routinely monitors for radioactivity in the environment surrounding Honeywell Metropolis Works (Honeywell).

IEMA maintains five Environmental Monitoring Stations in Metropolis and typically exchanges air particulate filters (APFs) on a weekly basis as a component of its routine environmental monitoring program. IEMA was collecting week-long air samples in the form of APFs at the time of the incident at Honeywell on October 26, 2014.

APFs were exchanged at all five monitoring locations on October 27, 2014. The samples cover the period from October 20, 2014 through October 27, 2014. These samples were collected per normal operations. The only difference from normal operations was that these samples were prioritized when submitted to our Radiochemistry Laboratory due to the Honeywell incident on October 26, 2014.

Results

APFs were analyzed for gross alpha and gross beta activity using a Gas Proportional Counter. Test results, in femtocuries per cubic meter (fCi/m³), are displayed in the table below.

**IEMA Gross Alpha and Gross Beta Results for Air Particulate Filters
Collected from October 20, 2014 through October 27, 2014**

Location	Nuclide	Result	Uncertainty*	Nuclide	Result	Uncertainty*
Airport	Alpha	2.3	0.8	Beta	40.3	2.9
Nearest Resident	Alpha	3.9	1.0	Beta	35.0	2.7
North Ave.	Alpha	2.1	0.8	Beta	41.6	2.8
Massac County Hospital	Alpha	3.4	0.9	Beta	37.7	2.8
Dorothy Miller Park	Alpha	2.0	0.8	Beta	38.4	2.8

* expanded counting uncertainty (k=1.96)

For comparison, average gross alpha and beta results for weekly samples collected at the same locations from the period beginning July 2013 through August 2014 are presented below.

**IEMA Average Gross Alpha and Gross Beta Results for Air Particulate Filters
Collected from July 2013 through August 2014**

Location	Nuclide	Average	Minimum	Maximum
Airport	Alpha	3.1	0.1	8.6
Nearest Resident	Alpha	5.7	1.2	27.1
North Ave.	Alpha	2.5	0.8	6.8
Massac County Hospital	Alpha	2.6	0.7	7.8
Dorothy Miller Park	Alpha	2.6	0.1	7.3

Location	Nuclide	Average	Minimum	Maximum
Airport	Beta	27.3	4.4	44.4
Nearest Resident	Beta	31.1	13.2	62.8
North Ave.	Beta	26.5	10.7	42.5
Massac County Hospital	Beta	26.1	9.3	47.0
Dorothy Miller Park	Beta	26.6	9.6	42.9

Note: An Environmental Monitoring Station was moved from the water treatment plant to Dorothy Miller Park in November 2013. Therefore, results for Dorothy Miller Park cover the period from November 2013 through August 2014.

Conclusion

Results for the samples collected from October 20, 2014 through October 27, 2014 were within the range of the results collected from July 2013 through August 2014. IEMA did not observe measurable increases of radioactivity in the environment as a result of the incident at the Honeywell facility on October 26, 2014.