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NMED DOE Oversight Bureau (OB) has completed a year-long study to establish baseline levels of radionuclides in ambient air at Jaycee Park in Artesia, NM.

Particulate matter from the ambient air was captured on glass fiber filter paper thru which approximately 2 cubic feet of air per minute was pulled by means of a continuously running pump.

The filters were collected bi-weekly, composited into quarterly samples, and sent to ALS USA to be analyzed for the presence of the five radionuclides deemed most likely to be in the WIPP waste; americium-241, cesium -137, plutonium-238, plutonium-239/240 and strontium 90.

The result for every requested analyte for every sample come back flagged as "U" - less than the sample specific minimum detectable concentration (MDC).

Included in this report, for comparison purposes, are the average reported results for NMED DOE OB's 4 low-volume ambient air samplers around the WIPP site for 2009, NMED DOE OB's 2009 average results for the sampler located behind the OB office in Carlsbad and the "Mean EEG Preoperational Baseline" levels for Ambient Air published in EEG-90; *EEG Operational Radiation Surveillance of the WIPP Project During 2000*.

Questions or comments may be addressed to Julia Marple at the address, phone number or email in the above letterhead.

Low-volume Air Sampler Lab Results for Artesia

<i>2009 2nd Qtr</i>						<i>Data Summaries</i>	
Analyte	pCi/sample				Lab Flag	nBq/m3	
	Result	±2 s TPU	MDC	Requested MDC		Result	±2 s TPU
Am-241	0	0.019	0.014	0.1	U	0	105
Cs-137	-0.44	3.0	5.1	5	U,M	-2441	16642
Pu-238	-0.0011	0.021	0.044	0.1	U	-6	116
Pu-239/240	0.0085	0.021	0.048	0.1	U	47	116
Sr-90	0.31	0.26	0.53	1	U	1720	1442
Total Air Volume (m ³)						6670	

<i>2009 3rd Qtr</i>						<i>Data Summaries</i>	
Analyte	pCi/sample				Lab Flag	nBq/m3	
	Result	±2 s TPU	MDC	Requested MDC		Result	±2 s TPU
Am-241	-0.0062	0.025	0.049	0.1	U	-34	136
Cs-137	-0.68	2.7	4.6	5	U	-3695	14670
Pu-238	0.0000	0.020	0.015	0.1	U	0	109
Pu-239/240	0.011	0.020	0.015	0.1	U	60	109
Sr-90	0.34	0.30	0.61	1	U	1847	1630
Total Air Volume (m ³)						6810	

<i>2009 4th Qtr</i>						<i>Data Summaries</i>	
Analyte	pCi/sample				Lab Flag	nBq/m3	
	Result	±2 s TPU	MDC	Requested MDC		Result	±2 s TPU
Am-241	0.0069	0.025	0.019	0.1	U	32	114
Cs-137	-0.95	1.8	3.1	5	U	-4343	8229
Pu-238	-0.0018	0.022	0.032	0.1	U	-8	101
Pu-239/240	0.0170	0.022	0.032	0.1	U	78	101
Sr-90	0.44	0.37	0.75	1	U	2012	1692
Total Air Volume (m ³)						8093	

<i>2010 1st Qtr</i>						<i>Data Summaries</i>	
Analyte	pCi/sample				Lab Flag	nBq/m3	
	Result	±2 s TPU	MDC	Requested MDC		Result	±2 s TPU
Am-241	0.0090	0.019	0.012	0.1	U	49	103
Cs-137	-3.4	4.5	7.9	10	U	-18446	24413
Pu-238	0.0014	0.022	0.034	0.1	U	8	119
Pu-239/240	0.012	0.022	0.034	0.1	U	65	119
Sr-90	0.11	0.34	0.71	1	U	597	1845
Total Air Volume (m ³)						6820	

Comparison Chart for Artesia Background Study

Analyte	<i>NMED Average Artesia Jaycee Park</i>		<i>NMED 2009 Average Carlsbad Office</i>		<i>NMED 2009 Ave WIPP Site</i>		<i>EEG Mean Preop Baseline</i>	
	nBq/m ³	±2sTPU	nBq/m ³	±2sTPU	nBq/m ³	± 2sTPU	nBq/m ³	±2sTPU
Am-241	12	114	-7	137	36	150	27	109
Cs-137	-7230	16000	-6160	17400	-3570	17400	60	2460
Pu-238	-2	111	17	129	2	134	6	62
Pu-239/240	62	111	34	131	14	134	23	56
Sr-90	1540	1650	1840	1660	1100	1720	1260	2290

Abbreviations for charts:

nBq/m³ - nanobecquerels per cubic meter of air sampled

2s TPU - 2 standard deviations Total Propagated Uncertainty. Only the results outside of the ±2s TPU window are reported as certain due to the variable nature of radioactivity and its analysis.

MDC - Minimum Detectable Concentration

U - Result is less than the sample specific MDC

M - The requested MDC was not met