

SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

NEW MEXICO ENVIRONMENT DEPARTMENT

DOE Oversight Bureau

406 North Guadalupe Street
Carlsbad, New Mexico 88220
Phone (575) 885-9023 Fax (575) 887-9283
www.nmenv.state.nm.us



DAVE MARTIN
Secretary

BUTCH TONGATE
Deputy Secretary

JAMES H. DAVIS, Ph.D.
Director
Resource Protection Division

Ambient Air Monitoring at the Waste Isolation Pilot Plant Conducted by NMED/DOE OB for CY 2012 Q-3

The New Mexico Environment Department DOE Oversight Bureau has compiled and assessed ambient air data collected during CY 2012 Q-3. The Bureau collected independent low-volume air samples from three locations at the WIPP site and at the Southeast Control Site located 12 miles upwind from the WIPP. Filters from the air samplers were composited by location and sent to an independent analytical laboratory for analysis of gross alpha/beta, americium-241, cesium-137, plutonium-238, plutonium-239/240, and strontium-90.

The Bureau performs environmental monitoring and oversight to assure that activities at the WIPP are protective of the public health and environment. The ambient air monitoring program is implemented to independently verify the radiological monitoring results derived by WIPP personnel, and to confirm that the operation of the WIPP is not increasing levels of radionuclides present in the ambient air as determined from preoperational studies.

Am-241, Cs-137, Pu-238, Pu-239/240 and Sr-90 were all flagged as "U" – Analyzed for, but not detected above 2sTPU and the MDC. The gross alpha/beta results aid in data analysis and are trended to improve the Bureau's characterization of the WIPP environment.

Questions and/or comments may be addressed to Julia Marple by phone at (575) 887-9023, or by e-mail at Julia.marple@state.nm.us

Enclosures: 1. Ambient Air Sampling Results CY 2012 Q-3
2. Map of NMED's Ambient Air Sampling Locations

Distribution: George Basabilvaso, DOE/CBFO
Thomas Skibitski, Chief, DOE OB
Julia Marple, Environmental Scientist, DOE OB/WOS

Ambient Air Sampling Results CY 2012 Q-3

Salt Shaft

WPL1-Q3_12

Analyte	pCi/sample			Lab Flag	nBq/m3		
	Result	±2 s TPU	MDC		Result	±2 s TPU	MDC
Gross alpha	5.72E+01	1.50E+01	1.99E+00		208000	54600	7250
Gross beta	2.22E+02	3.00E+01	3.62E+00		809000	109000	13200
Am-241	-7.95E-03	1.60E-02	5.17E-02	U	-29	58	188
Cs-137	-1.12E-01	1.00E+00	1.69E+00	U	-408	3640	6160
Pu-238	1.52E-02	1.80E-02	2.86E-02	U	55	66	104
Pu-239/240	-6.06E-03	1.20E-02	3.94E-02	U	-22	44	144
Sr-90	-4.65E-01	4.00E-01	7.46E-01	U	-1690	1460	2720
Total Air Volume (m³)					10157		

Far Field

WPL2-Q3_12

Analyte	pCi/sample			Lab Flag	nBq/m3		
	Result	±2 s TPU	MDC		Result	±2 s TPU	MDC
Gross alpha	5.19E+01	1.40E+01	2.05E+00		188000	50600	7410
Gross beta	2.35E+02	3.20E+01	2.06E+00		850000	116000	7450
Am 241	-7.78E-03	1.60E-02	5.06E-02	U	-28	58	183
Cs-137	1.29E-01	6.40E-01	1.09E+00	U	466	2310	3940
Pu-238	-1.12E-03	1.40E-02	4.39E-02	U	-4	51	159
Pu-239/240	1.01E-02	2.10E-02	4.39E-02	U	37	76	159
Sr-90	-3.25E-01	3.80E-01	7.19E-01	U	-1170	1370	2600
Total Air Volume (m³)					10235		

Met Tower

WPL3-Q3_12

Analyte	pCi/sample			Lab Flag	nBq/m3		
	Result	±2 s TPU	MDC		Result	±2 s TPU	MDC
Gross alpha	8.70E+00	2.90E+00	1.95E+00		29500	9830	6610
Gross beta	2.37E+02	3.20E+01	2.28E+00		803000	108000	7730
Am-241	-2.47E-03	2.10E-02	6.13E-02	U	-8	71	208
Cs-137	-4.94E-02	9.50E-01	1.62E+00	U	-167	3220	5490
Pu-238	-8.46E-03	1.70E-02	5.99E-02	U	-29	58	203
Pu-239/240	-6.04E-03	1.60E-02	5.61E-02	U	-20	54	190
Sr-90	2.42E-01	3.80E-01	6.75E-01	U	820	1290	2290
Total Air Volume (m³)					10916		

Met Tower Duplicate

WPL7-Q3_12

Analyte	pCi/sample			Lab Flag	nBq/m3		
	Result	±2 s TPU	MDC		Result	±2 s TPU	MDC
Gross alpha	6.44E+00	2.40E+00	2.03E+00		21900	8100	6900
Gross beta	2.28E+02	3.20E+01	2.20E+00		775000	109000	7480
Am-241	4.24E-03	1.50E-02	4.00E-02	U	14	51	136
Cs-137	5.57E-01	1.20E+00	2.14E+00	U	1890	4080	7270
Pu-238	-1.14E-02	1.60E-02	5.72E-02	U	-39	54	194
Pu-239/240	-1.76E-02	1.70E-02	6.46E-02	U	-60	58	220
Sr-90	-9.41E-02	3.50E-01	6.65E-01	U	-320	1190	2260
Total Air Volume (m³)					10884		

Southeast Control							
WPL9-Q3_12							
Analyte	pCi/sample			Lab Flag	nBq/m3		
	Result	±2 s TPU	MDC		Result	±2 s TPU	MDC
Gross alpha	3.38E+01	9.2E+00	1.48E+00		135000	36800	5930
Gross beta	2.22E+02	2.9E+01	2.00E+00		889000	116000	8010
Am-241	-8.37E-03	1.3E-02	4.49E-02	U	-34	52	180
Cs-137	-1.09E-01	1.1E+00	1.81E+00	U	-436	4400	7250
Pu-238	3.56E-03	1.3E-02	3.35E-02	U	14	52	134
Pu-239/240	-9.48E-03	1.5E-02	5.09E-02	U	-38	60	204
Sr-90	-9.50E-02	5.4E-01	1.00E+00	U	-380	2160	4000
Total Air Volume (m³)					9240		

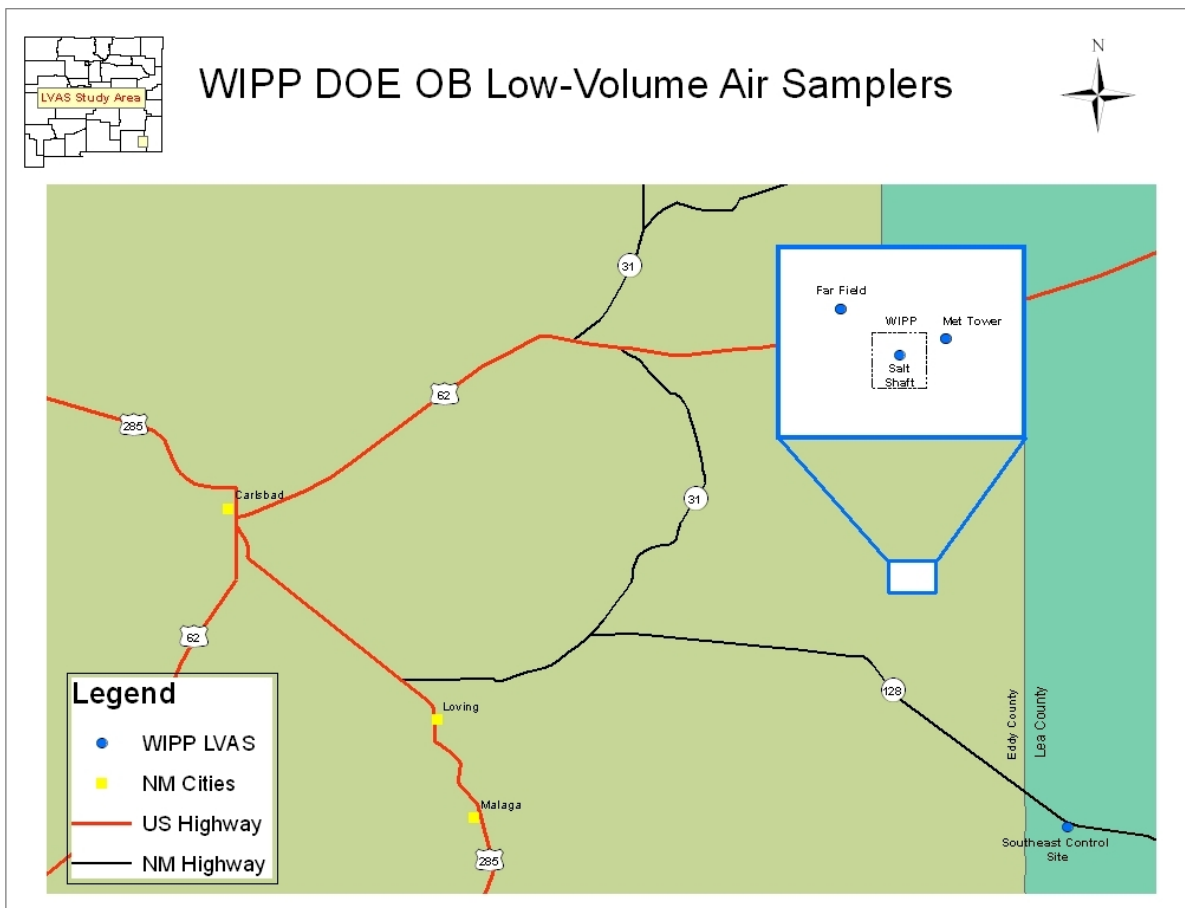
Abbreviations

TPU – Total Propagated Uncertainty

MDC – Minimum Detectable Concentration

Qualifiers/Flags

U – Analyzed for, but not detected above 2s TPU and the MDC



Map of NMED's Ambient Air Sampling Locations