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 2011 Q-4

The New Mexico Environment Department DOE Oversight Bureau has compiled and assessed ambient air data collected during CY 2011 Q-4. 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 collected bi-weekly and composited by location. The samples were 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 obtained 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.

Measurements for Am-241, Cs-137, Pu-238/239, Pu-240 and Sr-90 were reported with a "U" flag, meaning the target analyte was not detected above the Minimum Detectable Concentration (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) 885-9023, or by e-mail at Julia.marple@state.nm.us

Enclosures:
1. Ambient Air Sampling Results CY 2011 Q-4
2. Map of NMED's Ambient Air Sampling Locations

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

Ambient Air Sampling Results CY 2011 Q-4

LVAS 1 ***Salt Shaft***

	pCi/sample				nBq/m3		
Analyte	Result	±2 s TPU	MDC	Lab Flag	Result	±2 s TPU	MDC
Gross alpha	1.28E+02	3.3E+01	1.89E+00		501000	129000	7400
Gross beta	2.87E+02	3.9E+01	2.15E+00		1120000	153000	8410
Am-241	6.42E-03	1.8E-02	4.73E-02	U	25	70	185
Cs-137	8.08E-01	1.6E+00	2.90E+00	U	3160	6260	11300
Pu-238	1.44E-02	2.2E-02	3.53E-02	U	56	86	138
Pu-239/240	4.80E-03	1.7E-02	3.53E-02	U	19	67	138
Sr-90	3.67E-01	3.8E-01	6.48E-01	U	1440	1490	2540
				Total Air Volume (m³)	9454		

LVAS 2 ***Far Field***

	pCi/sample				nBq/m3		
Analyte	Result	±2 s TPU	MDC	Lab Flag	Result	±2 s TPU	MDC
Gross alpha	9.87E+01	2.6E+01	1.79E+00		386000	102000	7000
Gross beta	2.64E+02	3.9E+01	1.90E+00		1030000	152000	7430
Am 241	5.41E-03	1.2E-02	3.06E-02	U	21	47	120
Cs-137	-1.60E-01	1.7E+00	2.98E+00	U	-625	6640	11600
Pu-238	0.00E+00	1.6E-02	4.18E-02	U	0	63	163
Pu-239/240	1.14E-02	2.3E-02	4.18E-02	U	45	90	163
Sr-90	1.14E-01	3.8E-01	7.00E-01	U	446	1490	2740
				Total Air Volume (m³)	9468		

LVAS 3 ***Met Tower***

	pCi/sample				nBq/m3		
Analyte	Result	±2 s TPU	MDC	Lab Flag	Result	±2 s TPU	MDC
Gross alpha	9.77E+01	2.5E+01	1.38E+00		378000	96800	5340
Gross beta	2.54E+02	3.4E+01	2.19E+00		984000	132000	8480
Am-241	-5.65E-03	1.6E-02	4.85E-02	U	-22	62	188
Cs-137	1.20E+00	2.1E+00	3.69E+00	U	4650	8130	14300
Pu-238	7.85E-03	1.4E-02	2.77E-02	U	30	54	107
Pu-239/240	1.76E-02	2.0E-02	2.77E-02	U	68	77	107
Sr-90	4.68E-01	4.4E-01	7.39E-01	U	1810	1700	2860
				Total Air Volume (m³)	9554		

LVAS 7 ***Met Tower Duplicate***

	pCi/sample				nBq/m3		
Analyte	Result	±2 s TPU	MDC	Lab Flag	Result	±2 s TPU	MDC
Gross alpha	9.78E+01	2.5E+01	1.37E+00		380000	97000	5320
Gross beta	2.72E+02	3.4E+01	2.23E+00		1060000	132000	8650
Am-241	-2.56E-03	1.4E-02	3.62E-02	U	-10	54	140
Cs-137	-2.52E-01	2.5E+00	4.32E+00	U	-978	9700	16800
Pu-238	1.20E-03	1.4E-02	4.14E-02	U	5	54	161
Pu-239/240	3.61E-03	1.3E-02	3.40E-02	U	14	50	132
Sr-90	9.70E-02	3.9E-01	7.18E-01	U	376	1510	2790
Total Air Volume (m³) 9534							

LVAS 9 ***Southeast Control***

	pCi/sample				nBq/m3		
Analyte	Result	±2 s TPU	MDC	Lab Flag	Result	±2 s TPU	MDC
Gross alpha	8.36E+01	2.2E+01	1.44E+00		370000	97400	6370
Gross beta	2.33E+02	3.1E+01	2.07E+00		1030000	137000	9160
Am-241	9.34E-03	1.7E-02	3.30E-02	U	41	75	146
Cs-137	1.39E+00	1.6E+00	2.85E+00	U	6150	7080	12600
Pu-238	2.06E-02	2.4E-02	3.23E-02	U	91	106	143
Pu-239/240	1.72E-02	2.0E-02	3.23E-02	U	76	89	143
Sr-90	1.74E-01	3.4E-01	6.09E-01	U	770	1500	2700
Total Air Volume (m³) 8360							

WPLA ***Filter Blank***

	pCi/sample			
Analyte	Result	±2 s TPU	MDC	Lab Flag
Gross alpha	6.83E-01	7.5E-01	1.21E+00	U
Gross beta	9.44E+00	2.0E+00	2.08E+00	
Am-241	-2.61E-03	1.4E-02	3.69E-02	U
Cs-137	-5.06E-01	1.3E+00	2.28E+00	U
Pu-238	1.09E-02	1.8E-02	3.40E-02	U
Pu-239/240	2.97E-03	1.1E-02	2.79E-02	U
Sr-90	-5.94E-02	3.7E-01	6.97E-01	U

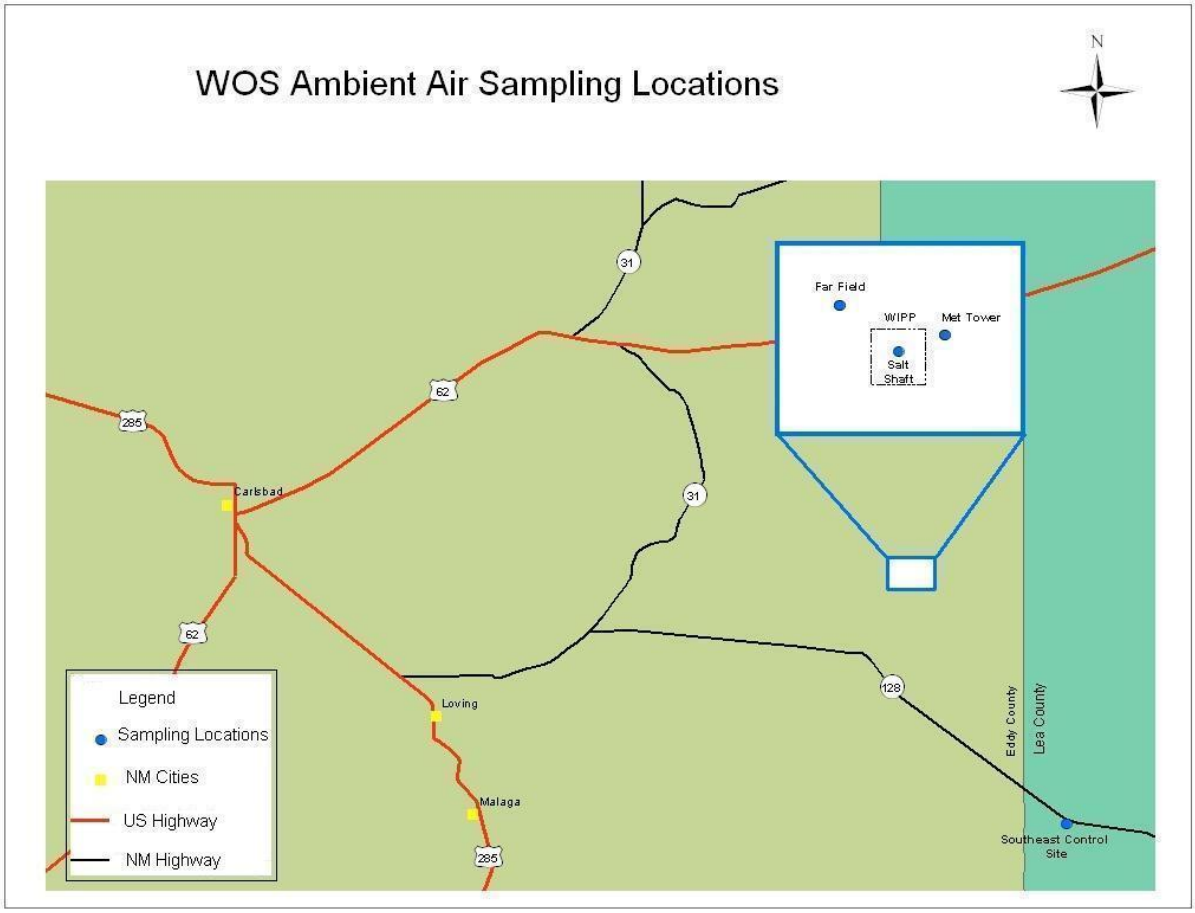
Abbreviations

TPU – Total Propagated Uncertainty

MDC – Minimum Detectable Concentration

Qualifiers/Flags

U – Result is less than 2sTPU and the sample MDC



Map of NMED's Ambient Air Sampling Locations