



NEW MEXICO
ENVIRONMENT DEPARTMENT



DOE Oversight Bureau

BILL RICHARDSON
Governor
DIANE DENISH
Lieutenant Governor

604B N Canal Street
Carlsbad, NM 88220
Phone (575) 887-6851 Fax (575) 887-6862
www.nmenv.state.nm.us

RON CURRY
Secretary
SARAH
COTTRELL

October 5, 2010

George Basabilvazo
Department of Energy
Carlsbad Field Office
Carlsbad, NM 88220

Subject: Analytical Results of Sediments Collected From Selected Water Bodies Near the WIPP, New Mexico, 2010

Mr. Basabilvazo,

This letter transmits the subject final report.

The monitoring results are provided to DOE as final. If you have any questions, or would like copies of the complete data set, please contact me at 575-887-6851.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas Kesterson".

Thomas Kesterson
Environmental Specialist –O
WIPP Oversight Section

Enclosure: Draft data submittal entitled: "Analytical Results of Sediments Collected From Selected Water Bodies Near the WIPP, New Mexico, 2010", with the following enclosures:

1. Table 1 – Analytical Results for Sediments Collected From Selected Water Bodies Near the WIPPP, 2010.
2. Definitions.

Cc: Barry Birch, Program Manager, NMED DOE OB/SO
Dan Ferguson, DOE, CBFO



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Deputy Secretary

Subject: Analytical Results of Sediments Collected From Selected Water Bodies Near the WIPP, New Mexico, 2010

The New Mexico Environment Department (NMED) DOE Oversight Bureau has compiled and assessed laboratory data for sediment collected from selected water bodies near the Waste Isolation Pilot Plant (WIPP), New Mexico, during 2010.

The accompanying data report includes results for sediment collected from eight surface water bodies near the WIPP, with graphs for each analyte indicating results in mBq/g (millibecquerels per gram) \pm 2TPU (Total Propagated Uncertainty) and a Table of Analytical Laboratory Results. Selected analytes included americium- 241 (Am-241), cesium- 137 (Cs-137), plutonium-238 (Pu-238), plutonium-239/240 (Pu-239/240), strontium-90 (Sr-90), uranium-234 (U-234), uranium-235 (U-235), and uranium-238 (U-238).

At all sampling locations, U-234 and U-238 exceeded both the sample MDC (Minimum Detectable Concentration) and the requested MDC. The results for the remaining analytes were either below the Sample MDC or below the Requested MDC.

U-234 ranged from a minimum of 8.51 ± 2.997 mBq/g from Lost Tank 1, to a maximum of 27.01 ± 6.660 mBq/g from Under-the-Hill-Tank. The results for U-238 showed a minimum of 18.13 ± 4.810 mBq/g from Noya Tank to a maximum of 31.82 ± 7.40 mBq/g, from Poker Tank.

All uranium activities were within the average range of uranium found naturally in soils worldwide.

Response

Questions and or comments may be addressed to Thomas Kesterson by phone at (575)-887-6851, by e-mail at thomasl.kesterson@state.nm.us, or to the address in the above letterhead.

Enclosures: 1. Table 1 – Analytical Laboratory Results For Sediment Collected From Selected Water Bodies Near the WIPP, 2010.

2. Definitions

Cc: Barry Birch, Project Manager, NMED DOE OB/SO
George Basabilvazo, DOE, CBFO
Dan Ferguson, Site Regulatory Specialist, DOE, CBFO

Table 1 – Analytical Laboratory Results For Sediment Collected From Selected Water Bodies Near the WIPP, 2010.

Table 1 – Analytical Laboratory Results For Sediment Collected From Selected Water Bodies Near the WIPP, 2010.

<i>Hill Tank, 2010</i>	Result				<i>Data Summaries</i>	
		(2 s) TPU	MDC	Lab Flag	Result	Uncertainty
					mBq/g	(2 s) TPU
Analyte	pCi/g					
Sr-90	0.11	0.098	0.19	U	4.070	3.626
Pu-239/240	0.0063	0.0080	0.013	U	0.233	0.296
Pu-238	0.0033	0.0067	0.0045	U	0.122	0.248
Am-241	0.015	0.010	0.0093	LT	0.555	0.370
Cs-137	0.27	0.12	0.15	LT, G	9.990	4.440
U-234	0.550	0.14	0.043		20.350	5.180
U-235	0.040	0.033	0.018	LT	1.480	1.221
U-238	0.68	0.17	0.035		25.160	6.290

<i>Indian Tank, 2010</i>	Result				<i>Data Summaries</i>	
		(2 s) TPU	MDC	Lab Flag	Result	Uncertainty
					mBq/g	(2 s) TPU
Analyte	pCi/g					
Sr-90	0.18	0.11	0.19	Y1, U	6.660	4.070
Pu-239/240	0.0073	0.0080	0.012	U	0.270	0.296
Pu-238	-0.0012	0.0062	0.014	U	-0.044	0.229
Am-241	0.0027	0.0061	0.0120	U	0.100	0.226
Cs-137	0.28	0.12	0.16	LT, G	10.360	4.440
U-234	0.62	0.15	0.044		22.940	5.550
U-235	0.013	0.022	0.044	U	0.481	0.814
U-238	0.75	0.18	0.038		27.750	6.660

<i>Lost Tank 1, 2010</i>	Result				<i>Data Summaries</i>	
		(2 s) TPU	MDC	Lab Flag	Result	Uncertainty
					mBq/g	(2 s) TPU
Analyte	pCi/g					
Sr-90	0.066	0.10	0.20	U	2.442	3.700
Pu-239/240	0.0014	0.0068	0.013	U	0.052	0.252
Pu-238	0.0017	0.0068	0.0046	U	0.063	0.252
Am-241	0.016	0.0099	0.0037	LT	0.592	0.366
Cs-137	0.070	0.11	0.18	U, G	2.590	4.070
U-234	0.23	0.081	0.039		8.510	2.997
U-235	0.030	0.029	0.035	U	1.110	1.073
U-238	0.20	0.074	0.036		7.400	2.738

Table 1 – Analytical Laboratory Results For Sediment Collected From Selected Water Bodies Near the WIPP, 2010.

<i>Lost Tank 2, 2010</i>	Result				<i>Data Summaries</i>	
		(2 s) TPU	MDC	Lab Flag	Result	Uncertainty
					mBq/g	(2 s) TPU
Analyte	pCi/g				mBq/g	
Sr-90	0.065	0.10	0.21	U	2.405	3.700
Pu-239/240	0.0072	0.0092	0.016	U	0.266	0.340
Pu-238	0	0.0063	0.0043	U	0.000	0.233
Am-241	0.0068	0.0075	0.011	U	0.252	0.278
Cs-137	0.25	0.11	0.13	LT, G, T1	9.250	4.070
U-234	0.62	0.16	0.044		22.940	5.920
U-235	0.056	0.043	0.040	LT	2.072	1.591
U-238	0.70	0.18	0.038		25.900	6.660

<i>Noya Tank, 2010</i>	Result				<i>Data Summaries</i>	
		(2 s) TPU	MDC	Lab Flag	Result	Uncertainty
					mBq/g	(2 s) TPU
Analyte	pCi/g				mBq/g	
Sr-90	0.099	0.095	0.18	Y1, U	3.663	3.515
Pu-239/240	0.0083	0.0091	0.014	U	0.307	0.337
Pu-238	-0.00095	0.0064	0.010	U	-0.035	0.237
Am-241	0.011	0.0082	0.0041	LT	0.407	0.303
Cs-137	0.13	0.078	0.11	LT, G, T1	4.810	2.886
U-234	0.59	0.15	0.030		21.830	5.550
U-235	0.0027	0.021	0.036	U	0.100	0.777
U-238	0.490	0.130	0.033		18.130	4.810

<i>Pierce Canyon, 2010</i>	Result				<i>Data Summaries</i>	
		(2 s) TPU	MDC	Lab Flag	Result	Uncertainty
					mBq/g	(2 s) TPU
Analyte	pCi/g				mBq/g	
Sr-90	0.026	0.086	0.18	Y1, U	0.962	3.182
Pu-239/240	0.0029	0.0065	0.013	U	0.107	0.241
Pu-238	0.0013	0.0065	0.013	U	0.048	0.241
Am-241	0.0043	0.0058	0.0039	LT	0.159	0.215
Cs-137	0.0056	0.074	0.14	U, G	0.207	2.738
U-234	0.53	0.13	0.033		19.610	4.810
U-235	0.0081	0.02	0.03	U	0.300	0.740
U-238	0.62	0.15	0.029		22.940	5.550

Table 1 – Analytical Laboratory Results For Sediment Collected From Selected Water Bodies Near the WIPP, 2010.

<i>Poker Tank, 2010</i>					<i>Data Summaries</i>	
	Result	(2 s) TPU	MDC	Lab Flag	Result	Uncertainty
					mBq/g	
Analyte	pCi/g					
Sr-90	0.041	0.11	0.22	U	1.517	4.070
Pu-239/240	0.0084	0.0094	0.015	U	0.311	0.348
Pu-238	0.0015	0.0061	0.0041	U	0.056	0.226
Am-241	0.014	0.0090	0.0037	LT	0.518	0.333
Cs-137	0.12	0.10	0.15	U, G	4.440	3.700
U-234	0.66	0.17	0.067		24.420	6.290
U-235	0.028	0.030	0.044	U	1.036	1.110
U-238	0.86	0.20	0.052		31.820	7.400

<i>Red Tank, 2010</i>					<i>Data Summaries</i>	
	Result	2 s TPU (±)	MDC	Lab Flag	Result	Uncertainty
					mBq/g	
Analyte	pCi/g					
Sr-90	0.021	0.094	0.19	Y1, U	0.777	3.478
Pu-239/240	0.0082	0.0090	0.014	U	0.303	0.333
Pu-238	0.0031	0.0064	0.0043	U	0.115	0.237
Am-241	0.010	0.0074	0.0035	LT	0.370	0.274
Cs-137	0.19	0.12	0.16	LT, G, T1	7.030	4.440
U-234	0.58	0.15	0.035		21.460	5.550
U-235	0.025	0.025	0.017	LT	0.925	0.925
U-238	0.62	0.15	0.014		22.940	5.550

<i>Under-the-Hill Tank 2010</i>					<i>Data Summaries</i>	
	Result	(2 s) TPU	MDC	Lab Flag	Result	Uncertainty
					mBq/g	
Analyte	pCi/g					
Sr-90	0.070	0.10	0.21	U	2.590	3.700
Pu-239/240	0.016	0.011	0.013	LT	0.592	0.407
Pu-238	-0.00032	0.0065	0.013	U	-0.012	0.241
Am-241	0.010	0.0078	0.0039	LT	0.370	0.289
Cs-137	0.15	0.11	0.16	U, G	5.550	4.070
U-234	0.73	0.18	0.042		27.010	6.660
U-235	0.034	0.032	0.033	LT	1.258	1.184
U-238	0.64	0.16	0.033		23.680	5.920

Definitions:

Qualifiers / Flags:

U – Result is less than the sample specific MDC.

LT – Result is less than requested MDC; greater than sample specific MDC.

Y1 – Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

G – Sample density differs by more than 15% of LCS density.

TI – Nuclide identification is tentative.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC – Minimum detectable Concentration