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12 December 1995

Mr. Ivan Trujillo, LAAO AIP
Point of Contact
Department of Energy
Los Alamos Area Office
MS A316
Los Alamos, NM 87544

RE: Data submittal and recommendations concerning Mortandad Canyon sediment trap (ST) No. 1, Field Unit 4, Operable Unit 1129, Tech Area 5, SWMU NO. 0-001, Los Alamos National Laboratory

Dear Mr. Trujillo:

The New Mexico Environment Department (NMED) Department of Energy Oversight Bureau (DOE OB) staff performed sediment sampling at the referenced SWMU on October 28, 1994. Sampling occurred at two locations within ST No. 1. A total of four samples were taken. Two samples (Fines-1 and Sand-1) were taken at the head of ST No.1 and two samples (Fines-2 and Sand-2) were taken at approximately the center of ST No.1. Sample Fines-1 apparently represents fine-grained deposits (0.3-1.0 cm thick) or suspended fraction and overlies sample Sand-1 which may represent coarse-grained deposits (unknown thickness) or bedload fraction. The sediments may correspond to some type of prograding fluvial facies. Fines-2 apparently represents fine-grained pond deposits (2-3 cm thick) that overlies sample Sand-2 (unknown thickness) which may represent the base of the most recent excavation or a coarse-grained fluvial deposit. Our observations at ST No. 1 indicate that a fining-upward sequence results from storm events. Since the fine-grained fraction absorbs the bulk of the contaminants we recommend that the fine-grained fraction be selectively removed on a routine basis. We feel this would be very cost effective and would decrease the amount of contaminant dispersion. It should be noted that the ST No. 1 material that was removed by past excavations probably contain a mixture of these deposits; hence, investigations that assume homogeneity may need to be reevaluated.

The preliminary data (see attachment) are being submitted for your thirty-day review as stated in the Agreement-in-Principle Umbrella Protocol. After you have had the opportunity to review and comment on the data, they will be released to applicable agencies. Contact Michael Dale at 672-0449 if you have any questions concerning this matter.

Sincerely,

Michael R. Dale for SY

Steve Yanicak, NMED, DOE Oversight Bureau, LANL POC
New Mexico Environment Department

attachments
SY:mrd
cc: Mat Johansen, DOE LAAO, MS A316
Bob Simeone, DOE LAAO, MS A316
Allyn Pratt, LANL, EES-13, MS J521
Steve Rae, LANL, ESH-18, MS K490
Neil Weber, NMED, Chief, DOE Oversight Bureau

Table 1. Preliminr nalytical results (metals) for NMED DOE Oversight Bureau sampl 'n Sediment Trap ST No. 1, Mortandad Canyon, Field Unit 4, Lo amos National Laboratory, New Mexico

SAMPLE ID	Date	Ag (mg/kg)	Al (mg/kg)	As (mg/kg	B (mg/kg)	Ba (mg/kg)	Be (mg/kg	Ca (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg	Cu (mg/kg)	Fe (mg/kg	Hg (mg/kg)	K (mg/kg)	Mg (mg/kg)	Mn (mg/kg)	Mo (mg/kg)	Na (mg/k	Ni (mg/kg)	Pb (mg/kg)	Sb (mg/kg)	Se (mg/kg)	Si (mg/kg	Sn (mg/kg)	Sr (mg/kg)	Tl (mg/kg)	V (mg/kg)	Zn (mg/kg)
FINES-1	10/28/94	<1	5100	2.5	<1	80	0.8	2000	<0.5	6	3	9	9400	<0.2	900	940	380	1	70	4	13	<6	0.6	580	6	12	<0.5	10	39
SAND-1	10/28/94	<1	650	<0.5	<1	<10	0.1	220	<0.5	<1	<1	<1	1600	<0.2	100	100	62	<1	20	<2	1.9	<6	<0.5	200	3	<1	<0.5	1	9
FINES-2	10/28/94	<2	4330	2.1	NA	92.9	1	2810	<0.2	12	3.2	12	7190	<0.025	RP	1090	439	<2	127	5	18	<10	<0.05	NA	<10	NA	NA	10.1	37.4
SAND-2	10/28/94	<2	278	<0.5	NA	10.3	<0.2	184	<0.2	0.41	<2	0.87	791	<0.025	NA	54.5	93	<2	<50	<5	1.5	<10	<0.5	NA	<10	NA	<0.5	<2	<5
*SAL	-	400	n/a	0.4	n/a	5500	0.16	n/a	80	400	n/a	3000	n/a	24	n/a	n/a	11000	n/a	n/a	1600	500	32	400	n/a	n/a	n/a	6.4	560	24000
*Background (mean)	-	n/a	n/a	5	n/a	510	2.3	n/a	0.17	36.3	6	10	n/a	n/a	n/a	n/a	n/a	0.59	n/a	9.9	27	n/a	0.26	n/a	n/a	120	n/a	52	34

NA - Not Analyzed

BDL - Below Detection Limits

Fines-1 - Grab sample of fine-grained deposits at head of pond

Sand-1 - Grab sample of coarse-grained deposits beneath Fines-1

Fines-2 - Grab sample of fine-grained deposits within pond

Sand-2 - Grab sample of coarse-grained deposits beneath Fines-2

SAL - Screening Action Level

n/a - not available

* - SAL and background data from TA-21 OU RFI phase report 1B, Table 2.3 and Final Draft of RFI Work Plan for OU 1136, Appendix D

TBD - To be determined

Table 2. Preliminary analytical results (radionuclides) for NMED DOE Oversight Program samples in Sediment Trap ST No. 1, Mortandad Canyon, Field Unit 4, Los Alamos National Laboratory, New Mexico

SAMPLE ID	Date	Gross Alpha (pCi/g)	UNC	Gross Beta (pCi/g)	UNC	90Sr (pCi/g)	UNC	89Sr (pCi/g)	UNC	238Pu (pCi/g)	UNC	239/240 Pu (pCi/g)	UNC	241Am (pCi/g)	UNC	137Cs (pCi/g)	UNC	60Co (pCi/g)	UNC
FINES-1	10/28/94	32.80	4.0	29.50	3.4	3.01	0.87	<2.6	BDL	2.95	0.40	8.3	1.0	10.50	0.989	27	4.1	0.309	0.062
SAND-1	10/28/94	4.44	0.56	4.16	0.51	<0.72	BDL	<0.83	BDL	0.37	0.07	1.29	0.19	1.19	0.241	3.15	0.225	<0.043	BDL
FINES-2	10/28/94	86	12	67.6	7.8	4.51	0.95	NA	-	10.0	1.2	26.4	3.1	33.87	4.50	57	7.1	<1.2	BDL
SAND-2	10/28/94	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-	3.0	0.46	<0.03	BDL
*SAL	-	n/a		n/a		8.9		n/a		27		24		22		4		0.90	
*Background (mean)	-	n/a		n/a		0.34		n/a		0.001		0.007		n/a		0.01-0.82		TBD	

NA - Not Analyzed

BDL - Below Detection Limits

Fines-1 - Grab sample of fine-grained deposits at head of pond

Sand-1 - Grab sample of coarse-grained deposits beneath Fines-1

Fines-2 - Grab sample of fine-grained deposits within pond

Sand-2 - Grab sample of coarse-grained deposits beneath Fines-2

SAL - LANL's Environmental Restoration screening action level

n/a - not available

* - SAL and background data from TA-21 OU RFI phase report 1B, Table 2.3 and Final Draft of RFI Work Plan for OU 1136, Appendix D

TBL - To be determined