ANACONDA Copper Company
New Mexico Operations
P.O. Box 638
Grants, New Mexico 87020
505/876-2211

November 5, 1979

Mr. A. F. Czarnowsky
Area Mining Supervisor
United States Geological Survey
P. O. Box 26124
Albuquerque, New Mexico
87125

Dear Mr. Czarnowsky:

The following information is being submitted in accordance with the Jackpile-Paguate Minesite Reclamation Sampling Program. As per Mr. Nelson's requests, this information is being submitted as we have received it.

1. Radiological and Chemical analysis of reclamation site soils and vegetation.
2. Surface gamma emission from reclaimed sites.
3. Radon exhalation values from reclaimed sites.

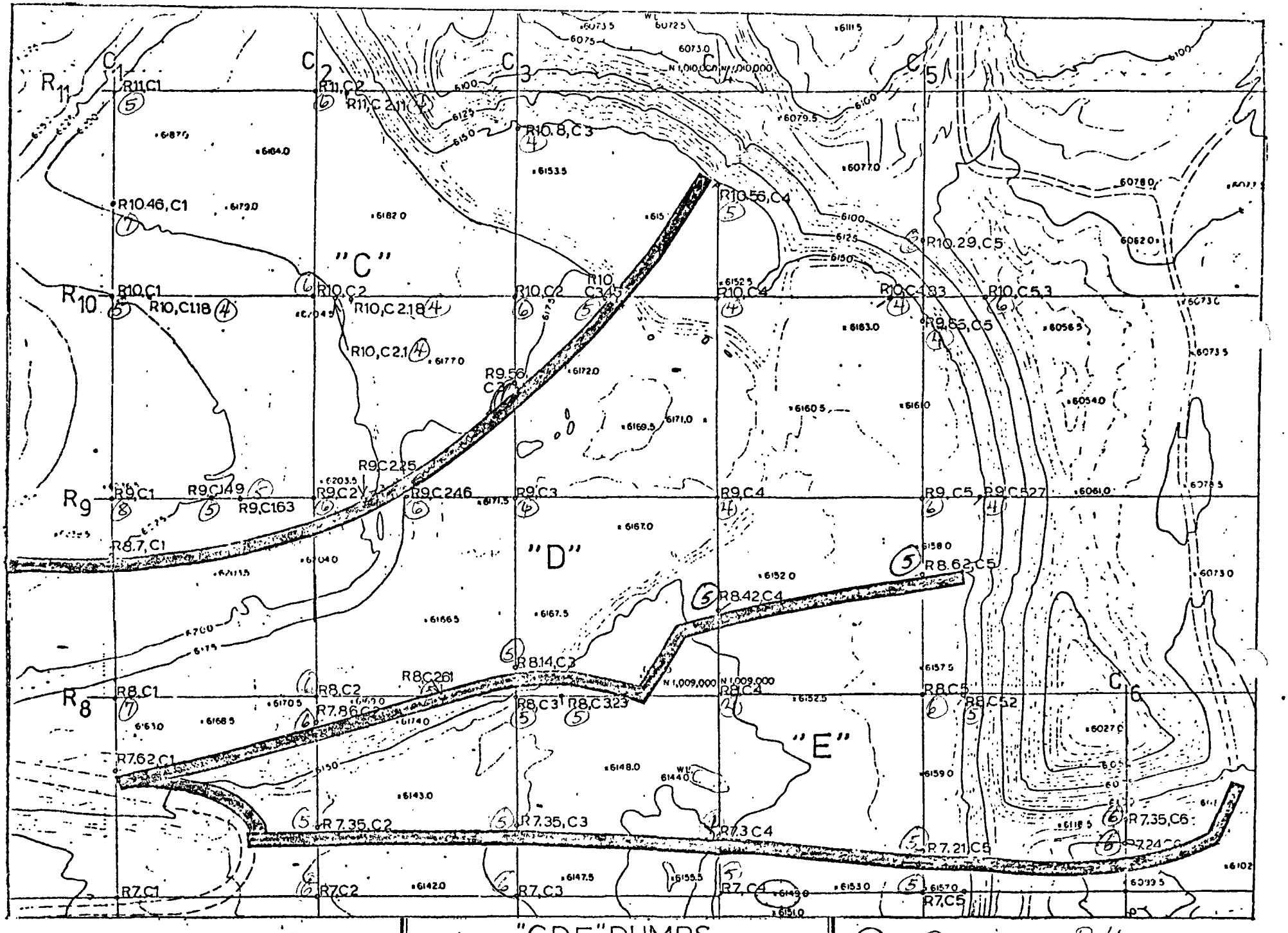
Sincerely,

Meade A Stirland
Manager
Environmental Health and Safety

MAS/bg

Encls.

RECEIVED
NOV 8 1979
U.S. GEOLOGICAL SURVEY
ALBUQUERQUE, NEW MEXICO



"C,D,E" DUMPS
Radiological Survey
100 meter

(N) = Reading μR/hr.
gamma

CONFIDENTIAL

POL-EPA01-0004769

GAMMA SURVEY - Ludlum 100meter measmnts. in uR/hr.

Location: Dumps C, D, E Date: 10-29-8

	C1	C2	C3	C4	C5	C6
R11	5	6	4	—	—	
R10	5	6	6	4	4	—
R9	8	6	6	4	6	—
R8	7	6	5	4	6	6
R7	—	6	6	5	5	6

Note: No anomalous readings were encountered between the above stations. Refer to attached map for detail.

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STATISTICAL ANALYSIS:

Dump C:

All surveyed points are used for statistics (refer to map for detail).

Readings uR/hr
5, 7, 5, 8, 7, 4, 5, 5, 6, 6, 6, 4, 4, 4, 5, 4, 6, 6, 5.

Population mean $\bar{x} = 5.36$

Standard Deviation $= 1.16$

Uniformity $\frac{1.16}{5.36} = .21$ or 21%*

Dump D:

All surveyed points are used for statistics (refer to map for detail).

Readings uR/hr
7, 6, 6, 6, 5, 6, 5, 5, 4, 4, 5, 4, 4, 6, 5, 8, 6, 4.

Population mean $\bar{x} = 5.33$

Standard Deviation $= 1.13$

Uniformity $\frac{1.13}{5.33} = .21$ or 21%*

Dump E:

All surveyed points are used for statistics (refer to map for detail).

Reading uR/hr
5, 5, 5, 5, 4, 4, 6, 5, 5, 6, 6,

Population mean $\bar{x} = 5.09$

Standard Deviation $= 0.7$

Uniformity $\frac{0.7}{5.33} = 0.13$ or 13%*

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* A population is considered uniform provided the standard deviation is less than 35% of the mean population.

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Soil Analysis

Chemical

Site	Date Taken	As ppm	Se ppm	Mo ppm	Pb ppm	V ppm	Cd ppm	Zn ppm
Dump P1	4-20-79	<0.5	<2.0	<1.0	<1.0	<1.0	<0.1	0.40

Radiological

Site	Date Taken	Thorium-230 pCi/gm	Radium-226 pCi/gm	Lead-210 pCi/gm	Uranium-Nat µg/g
Dump P1	4-20-79	0.66	0.28	1.20	3.12

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Vegetation Analysis

Chemical

Site	Date Taken	As ppm	Se ppm	Mo ppm	Pb ppm	V ppm	Cd ppm	Zn ppm
Dump S (Composite)	7-27-79	0.45	<1.0	<0.1	0.96	3.87	0.125	30.9
Dump S (R-4)	7-27-79	0.43	<1.0	<0.1	<0.5	3.0	<0.1	35.0
Dump J (R-2)	7-17-79	<0.25	<1.0	0.7	1.2	<1.0	<0.1	25.0
Dump J (R-4)	7-17-79	1.2	1.6	1.3	2.0	<1.0	<0.1	22.9
Dump P1 (R3C4)	8-2-79	0.68	<1.0	<0.1	<0.5	6.0	<0.1	30.1

Radiological

Site	Date Taken	Thorium-230 pCi/gm	Radium-226 pCi/gm	Lead-210 pCi/gm	Uranium-Nat. µg/g
Dump S (Composite)	7-27-79	0.43	0.32	1.44	3.66
Dump S (R-4)	7-27-79	0.52	0.28	1.0	1.76
Dump J (R-2)	9-17-79	0.53	1.59	*	1.02
Dump J (R-4)	9-17-79	1.85	0.24	*	2.14
Dump P1 (R3C4)	8-2-79	0.59	0.16	2.0	0.76

* Presently being analyzed

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Jackpile Radon Exhalation Program

Summer Radon Flux Measurements

Site	Date Collected	Radon Flux f ci/cm^2-sec
Dump S	7-17-79	1.384
Dump J	9-13-79	4.802
Dump P 1	7-24-79	0.065