

# UNC MINING AND MILLING



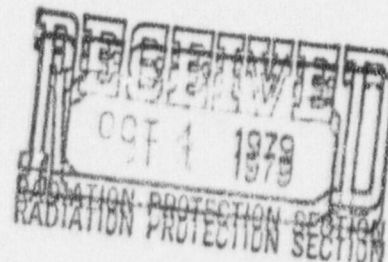
Division of United Nuclear Corporation  
A **UNC RESOURCES** Company

Church Rock Operations  
P.O. Drawer QQ

Gallup, New Mexico 87301  
Telephone 505/722-6651

October 3, 1979

Mr. Gerry Stewart  
Program Manager  
Uranium Licensing Unit  
NMEID  
Box 968  
Santa Fe, New Mexico 87503



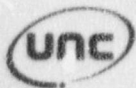
Dear Gerry:

In response to your letters of September 10, and September 17, we submit the following information.

Filtration and acidification procedures for all water samples follow the recommendations for preservation of samples according to measurement described in "Methods of Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March, 1979, USEPA, Cincinnati, Ohio. The "Manual for the Interim Certification of Laboratories Involved in Analyzing Public Drinking Water Supplies - Criteria and Procedures", EPA-600/8-78-008, May, 1978, USEPA, Cincinnati, Ohio is also used as guidance. For example: conductance; Nitrogen (Nitrate); and Cyanide need to be analyzed within 24 hours. Samples for analysis of most radionuclides must be acidified to pH <2 with Hydrochloric or Nitric acids.

Besides the references mentioned above, methods listed in the following tabulation are used for physical properties, metals, non-metals and radionuclide analyses.

<u>Parameter</u>	<u>EPA Methods</u> <sup>1</sup>	<u>Standard Methods</u> <sup>2</sup>	<u>EPA Handbook</u> <sup>3</sup>
Aluminum	202.2		
Arsenic	206.2		
Barium	208.2		
Cadmium	213.2		
Calcium	215.1		
Chloride	325.3		
Chromium	218.2		
Cobalt	219.2		
Conductivity	120.1		
Copper	220.2		
Cyanide		p. 372	
Fluoride	340.2		
Iron	236.2		



<u>Parameter</u>	<u>EPA Methods</u> <sup>1</sup>	<u>Standard Methods</u> <sup>2</sup>	<u>EPA Handbook</u> <sup>3</sup>
Lead	239.2		
Magnesium	242.1		
Manganese	243.2		
Molybdenum	246.2		
Mercury, Total		p. 229	
Nitrogen (Nitrate)		p. 423	
Potassium	258.1		
pH	150.1		
Selenium	270.2		
Silver	272.2		
Sodium	273.1		
Sulfate	375.3		
TDS	160.1		
Nickel	249.2		
Vanadium	286.2		
Zinc	289.2		
Total Uranium			X
Radium-226		p. 661	X
Thorium-230			X
Gross Alpha		p. 648	X
Hardness		p. 201	

<sup>1</sup> "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March, 1979, USEPA, Cincinnati, Ohio

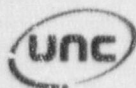
<sup>2</sup> "Standard Methods for the Examination of Water and Wastewater", 14th Edition, American Public Health Association 1975, Washington, D. C.

<sup>3</sup> "Handbook of Radiochemical Analyses Methods", EPA-680/4-75-001, February, 1975

The following additional methods and procedures are also utilized.

Gross Alpha & Gross Beta - "Tenative Reference Method for the Measurement of Gross Alpha and Gross Beta Radioactivities in Environmental Waters", EPA-680/4-75-005, June, 1975, USEPA, Cincinnati, Ohio.

Radium-226 - "Measurement of Total Radium and Radium-226 in Environmental Waters", EPA-600/4-76-012, March, 1976, USEPA, Cincinnati, Ohio.



Thorium-230 - "Determination of Ra-226 and Th-230 in Mill Effluents - The 6th Annual Meeting on Bio-assay and Analytical Chemistry, TID-7616, USACE, 1960, page 149. "EPA Radiochemistry Handbook" - 1975, page 95.

Our quality control program follows recommendations described in the "Handbook for Analytical Quality Control in Water and Wastewater Laboratories", EPA-600/4-79-019, March, 1979, USEPA, Cincinnati, Ohio. Split, duplicate, spiked, unknown, and blank samples are also used to check the accuracy and precision of analytical results. For example, in Uranium analysis, one (1) unknown, one (1) reagent blank, three (3) standards and one (1) duplicate and/or one (1) spiked sample are analyzed with each eight (8) to twenty (20) samples. Absorbances of standards and unknowns are checked within the control limits established by EPA. In Radium and Thorium analyses one (1) blank and two (2) standards are analyzed with each six (6) to twelve (12) samples. Results are checked within the control limits. Split samples for Uranium and trace element analyses are cross-checked with our chemical laboratory or with a commercial laboratory.

In addition, our participation in the EPA laboratory inter-comparison studies includes Uranium, Ra-226, and Ra-228, Gross Alpha and Gross Beta analyses.

Our estimate of total radioactivity released on July 16 is 14.18 Curies. This estimate includes the following breakdown of radionuclides.

	Solids (Curies)	Liquids (Curies)
U-Natural	0.05	2.9
Thorium-230	0.14	7.5
Radium-226	0.39	3.2
Total	0.58	13.6

Combined Total = 14.18

To date we have no good estimate of Lead-210 concentrations in the material released. When this information is available it will be forwarded.

The personnel dosimetry program has continued throughout this time period and will into the future. Bioassay samples are being collected from selected individuals off the cleanup crew. High volume air samples will be taken in a cleanup location on monthly basis.





Radon sampling directly on the tailings pile has shown little increase above background levels and therefore samples from the arroyo are judged unnecessary.

If you have any questions please call.

Regards,

A handwritten signature in black ink, which appears to read "Todd Miller". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Todd Miller,  
Manager of Environmental Operations

TM/cr

cc: H. J. Abbiss, UNC Mining & Milling  
C. N. O'felt, UNC Mining & Milling



# New Mexico State Senate

STATE CAPITOL

Santa Fe 87503

File No. 205.86

Mr. Thomas E. Baca, Director  
Environmental Improvement Division  
Crown Building  
Santa Fe, New Mexico 87503

Dear Mr. Baca:

I wish to express the concern of the members of the interim energy and environment committee at the amount of time that the United Nuclear Corporation's Churchrock mill has been forced to remain closed. While all members of the committee realize the paramount importance of protecting the health and safety of New Mexicans, the committee encourages you to move in the most expeditious manner possible in this matter to allow the mill to reopen.

As I understand the situation, you yourself have stated that the corporation has been cooperative in dealing with the tailings spill. In addition, it is my understanding that no employees have yet been laid off, but that continuation of the closure might force lay-offs. In view of both the cooperation of the corporation and the possible effects on the workers and the surrounding communities, we think it clear that action should and must be taken soon.

The committee does not wish to usurp your statutory functions but does wish to stress that in this age of outcry regarding over-regulation, regulatory agencies must consider the economic implications of their actions.

Very truly yours,

*Bill L. Lee*  
Senator Bill L. Lee, Chairman  
Interim Energy and Environment Committee