

UNC MINING AND MILLING

5 7/7

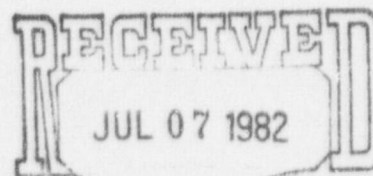


Division of United Nuclear Corporation
A **UNC RESOURCES** Company

Church Rock Operations
P.O. Drawer QQ

Gallup, New Mexico 87301
Telephone 505/722-6651

July 6, 1982



RADIATION PROTECTION BUREAU

Mr. Kent Breese
Environmental Engineer
Uranium Licensing Section
Radiation Protection Bureau
N.M. Environmental Improvement Division
P.O. Box 968
Santa Fe, New Mexico 87504

Dear Kent:

To comply with your request (letter of February 9, 1982) UNC has sampled the wells 317, TWQ-124, Gallup-3 and 450-A on March 1, 1982 and analyzed for radiological data in the UNC laboratory. The analysis data are enclosed.

Also enclosed are the radiological analysis data, for the samples of the north pond liquid and neutralized cyclone underflow tailings sands. These samples were taken on March 1, 1982 to comply with NMEID (Radiation Protection Bureau) letter of January 26, 1982. Radiological analysis of the neutralized tailings slimer (precipitate) was not performed because of confusion in regards to the methodology of sampling and other clarification which you are well aware of. Since this matter has been well clarified in our past meetings and letters, UNC will provide all the necessary data for quarterly samples starting from June 1982 in accordance with UNC letter of May 6, 1982.

If you have any question or comment please do not hesitate to contact me.

Sincerely,

S. Deb Misra

S. Deb Misra
Sr. Engineer



North pond liquid

pH 8.62 Temp. 23.0 Gross α _____
 TDS _____ Cond. 20,500 Gross β _____
 TSS _____ Sal. _____

LAB NO. W-205
 SAMPLE ID North pond
 COLL. DATE 3 SEP-82
 COLL. TIME 0845
 SAMPLER D.A

TOTAL ANALYSES

Aliquot _____

Filter dig. acids _____

Parameters

REMARKS

[] INDICATE TOTAL VALUES

FIELD DATA

pH 8.26

COND. 20,000

TEMP. 28.0

WORK SENT OUT

Aliquot _____

Where _____

For _____

AA METALS

Filtered _____

HNO₃ to pH < 2 _____

Aluminum _____

Antimony _____

Arsenic _____

Barium _____

Cadmium _____

Calcium _____

Chromium _____

Cobalt _____

Copper _____

Iron _____

Lead _____

Magnesium _____

Manganese _____

Molybdenum _____

Mercury _____

Nickel _____

Potassium _____

Selenium _____

Silver _____

Sodium _____

Vanadium _____

Zinc _____

OTHER

SELECTIVE ION

Nitrate-N _____

Ammonia-N _____

Cyanide _____

Fluoride _____

GRAVIMETRIC or TITRIMETRIC

Chloride _____

Carbonate _____

Bicarbonate _____

Alkalinity _____

Sulfate _____

COLORIMETRIC

Boron _____

Uranium 0.02 mg/l

Phenols _____

RADIOMETRIC

pc/l

Thorium-230 15.2 ± 1.3

Radium-226 31.5 ± 1.7

Lead-210 2.6 ± 1.6

Polonium-210 _____

Radium-228 _____

W-205

pH _____ Temp. _____ Gross α _____
TDS _____ Cond. _____ Gross β _____
TSS _____ Sal. _____

Neutralized cyclone underflow
Tailing Sands

LAB NO. _____
SAMPLE ID NEUTRALIZED
CYCLOWE UFI
COLL. DATE 3-1-82
COLL. TIME _____
SAMPLER D.A.

TOTAL ANALYSES

Aliquot _____

Filter dig. acids _____

Parameters

REMARKS

WORK SENT OUT

Aliquot _____

Where _____

For _____

AA METALS

Filtered _____

HNO₃ to pH < 2 _____

Aluminum _____

Antimony _____

Arsenic _____

Barium _____

Cadmium _____

Calcium _____

Chromium _____

Cobalt _____

Copper _____

Iron _____

Lead _____

Magnesium _____

Manganese _____

Molybdenum _____

Mercury _____

Nickel _____

Potassium _____

Selenium _____

Silver _____

Sodium _____

Vanadium _____

Zinc _____

OTHER

SELECTIVE ION

Nitrate-N _____

Ammonia-N _____

Cyanide _____

Fluoride _____

GRAVIMETRIC or TITRIMETRIC

Chloride _____

Carbonate _____

Bicarbonate _____

Alkalinity _____

Sulfate _____

COLORIMETRIC

Boron _____

Uranium 0.004 %

Phenols _____

RADIOMETRIC

Thorium-230 PC/gm
135 ± 0.4

Radium-226 181 ± 1

Lead-210 413 ± 9

Polonium-210 _____

Radium-228 _____

pH 2.29 Temp. 24.0 Gross α _____
TDS _____ Cond. 15.500 Gross β _____
TSS _____ Sal. _____

LAB NO. W-201
SAMPLE ID 124
COLL. DATE 3-1-82
COLL. TIME 0930
SAMPLER D.H.

TOTAL ANALYSES

Aliquot _____

Filter dig. acids _____

ParametersAA METALS

Filtered _____

HNO₃ to pH < 2 _____

Aluminum _____

Antimony _____

Arsenic _____

Barium _____

Cadmium _____

Calcium _____

Chromium _____

Cobalt _____

Copper _____

Iron _____

Lead _____

Magnesium _____

Manganese _____

Molybdenum _____

Mercury _____

Nickel _____

Potassium _____

Selenium _____

Silver _____

Sodium _____

Vanadium _____

Zinc _____

SELECTIVE ION

Nitrate-N _____

Ammonia-N _____

Cyanide _____

Fluoride _____

GRAVIMETRIC or TITRIMETRIC

Chloride _____

Carbonate _____

Bicarbonate _____

Alkalinity _____

Sulfate _____

COLORIMETRIC

Boron _____

Uranium 8.22 mg/L

Phenols _____

RADIOMETRICThorium-230 3578 ± 40Radium-226 35 ± 3Lead-210 24 ± 49 *

Polonium-210 _____

Radium-228 _____

* Preliminary data - low Pb recovery caused high uncertainty in reported value. Samples are being rerun.

*Restricted*OTHER

REMARKS☒ ☐ INDICATE TOTAL VALUESFIELD DATApH 2.31COND. 15.000TEMP. 10.5WORK SENT OUT

Aliquot _____

Where _____

For _____

pH 3.42 Temp. 18.0 Gross α _____
TDS _____ Cond. 10.100 Gross β _____
TSS _____ Sal. _____

LAB NO. W-203
SAMPLE ID 317
COLL. DATE 3-1-82
COLL. TIME 0855
SAMPLER D.A

TOTAL ANALYSES

Aliquot _____

Filter dig. acids _____

Parameters

REMARKS

☐ ☐ INDICATE TOTAL VALUES

FIELD DATA

pH 3.30

COND. 10,000

TEMP. 9.0

WORK SENT OUT

Aliquot _____

Where _____

For _____

AA METALS

Filtered _____

HNO₃ to pH < 2 _____

Aluminum _____

Antimony _____

Arsenic _____

Barium _____

Cadmium _____

Calcium _____

Chromium _____

Cobalt _____

Copper _____

Iron _____

Lead _____

Magnesium _____

Manganese _____

Molybdenum _____

Mercury _____

Nickel _____

Potassium _____

Selenium _____

Silver _____

Sodium _____

Vanadium _____

Zinc _____

OTHER

SELECTIVE ION

Nitrate-N _____

Ammonia-N _____

Cyanide _____

Fluoride _____

GRAVIMETRIC or TITRIMETRIC

Chloride _____

Carbonate _____

Bicarbonate _____

Alkalinity _____

Sulfate _____

COLORIMETRIC

Boron _____

Uranium 1.71 mg/L

Phenols _____

RADIOMETRIC

Thorium-230 1863 ± 52

Radium-226 17 ± 2

Lead-210 2.62 ± 0.38

Polonium-210 _____

Radium-228 _____

Restricted

W-203

pH 2.21 Temp. 22.0 Gross α _____
TDS _____ Cond. 14,250 Gross β _____
TSS _____ Sal. _____

LAB NO. W-204
SAMPLE ID Gallup #3
COLL. DATE 3-1-82
COLL. TIME 0840
SAMPLER D.A

TOTAL ANALYSES

Aliquot _____

Filter dig. acids _____

Parameters

REMARKS

☐ ☐ INDICATE TOTAL VALUES

FIELD DATA

pH 2.16

COND. 14,000

TEMP. 12.0

WORK SENT OUT

Aliquot _____

Where _____

For _____

AA METALS

Filtered _____

HNO₃ to pH < 2 _____

Aluminum _____

Antimony _____

Arsenic _____

Barium _____

Cadmium _____

Calcium _____

Chromium _____

Cobalt _____

Copper _____

Iron _____

Lead _____

Magnesium _____

Manganese _____

Molybdenum _____

Mercury _____

Nickel _____

Potassium _____

Selenium _____

Silver _____

Sodium _____

Vanadium _____

Zinc _____

OTHER

SELECTIVE ION

Nitrate-N _____

Ammonia-N _____

Cyanide _____

Fluoride _____

GRAVIMETRIC or TITRIMETRIC

Chloride _____

Carbonate _____

Bicarbonate _____

Alkalinity _____

Sulfate _____

COLORIMETRIC

Boron _____

Uranium 9.18 mg/L

Phenols _____

RADIOMETRIC

Thorium-230 3053 ± 34

Radium-226 75 ± 4

Lead-210 4.6 ± 13.0 *

Polonium-210 _____

Radium-228 _____

* Preliminary data - low Pb recovery caused high uncertainty in reported value. Samples are being rerun

Restricted

W-204

pH 2.19 Temp. 20.0 Gross α _____
TDS _____ Cond. 10.750 Gross β _____
TSS _____ Sal. _____

LAB NO. W-202
SAMPLE ID 450A
COLL. DATE 3-1-82
COLL. TIME 0920
SAMPLER D.A

TOTAL ANALYSES

Aliquot _____

Filter dig. acids _____

Parameters

REMARKS

☐ INDICATE TOTAL VALUES

FIELD DATA

pH 2.08

COND. 10.500

TEMP. 10.0

WORK SENT OUT

Aliquot _____

Where _____

For _____

AA METALS

Filtered _____

HNO₃ to pH < 2 _____

Aluminum _____

Antimony _____

Arsenic _____

Barium _____

Cadmium _____

Calcium _____

Chromium _____

Cobalt _____

Copper _____

Iron _____

Lead _____

Magnesium _____

Manganese _____

Molybdenum _____

Mercury _____

Nickel _____

Potassium _____

Selenium _____

Silver _____

Sodium _____

Vanadium _____

Zinc _____

OTHER

SELECTIVE ION

Nitrate-N _____

Ammonia-N _____

Cyanide _____

Fluoride _____

GRAVIMETRIC or TITRIMETRIC

Chloride _____

Carbonate _____

Bicarbonate _____

Alkalinity _____

Sulfate _____

COLORIMETRIC

Boron _____

Uranium 4.15 mg/L

Phenols _____

RADIOMETRIC

Thorium-230 1699 ± 29

Radium-226 30 ± 2

Lead-210 1.93 ± 0.40

Polonium-210 _____

Radium-228 _____

W-202

Split Sample with
(not a quarterly sample)
Gross α

FOR Radiometrics only

pH 6.50 Temp. 13.5

TDS _____ Cond. 7500

TSS _____ Sal. _____

LAB NO. W-462

SAMPLE ID 29-D

COLL. DATE 4-14-82

COLL. TIME 0845

SAMPLER D.A.

TOTAL ANALYSES

Aliquot _____

Filter dig. acids _____

Parameters

REMARKS

WORK SENT OUT

Aliquot _____

Where _____

For _____

AA METALS

Filtered _____

HNO₃ to pH < 2 _____

Aluminum _____

Antimony _____

Arsenic _____

Barium _____

Cadmium _____

Calcium _____

Chromium _____

Cobalt _____

Copper _____

Iron _____

Lead _____

Magnesium _____

Manganese _____

Molybdenum _____

Mercury _____

Nickel _____

Potassium _____

Selenium _____

Silver _____

Sodium _____

Vanadium _____

Zinc _____

OTHER

SELECTIVE ION

Nitrate-N _____

Ammonia-N _____

Cyanide _____

Fluoride _____

GRAVIMETRIC or TITRIMETRIC

Chloride _____

Carbonate _____

Bicarbonate _____

Alkalinity _____

Sulfate _____

COLORIMETRIC

Boron _____

Uranium _____

Phenols _____

RADIOMETRIC

Thorium-230 15.3 ± .7

Radium-226 .62 ± .11

Lead-210 _____

Polonium-210 _____

Radium-228 _____

restricted

Kent:

P.S. please let me
know how does it
compare with your analysis