

CONTACT INFORMATION  
Mining Records Curator  
Arizona Geological Survey  
3550 N. Central Ave, 2nd floor  
Phoenix, AZ, 85012  
602-771-1601  
<http://www.azgs.az.gov>  
[inquiries@azgs.az.gov](mailto:inquiries@azgs.az.gov)

The following file is part of the Anderson Mine Collection

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ANDERSON MINE CORE and PULP SAMPLES in CASPER, WYOMING

<u>Hole #</u>	<u>Beta Gamma Pulps</u>	<u>Footages</u>
AM 1C		70-78'9", 78'9"-89, 98-107'5", 107'5"-117'4", 117'4"-126'5", 126'5"-135, 135-140
AM 7C	1 bx Pwdr Samples	15-25, 95-105, 105-10, 110-18
AM 13C	1 box	100-11, 111-21, 121-31, 131-40, 140'3"-149'9"
AM 16C		240-249'8", 249'8"-262'6", 262'5"-72'5", 272'5"-86'5", 286'5"-296, 296-306, 306-16, 316-27, 327-35
AM 17C	2 boxes	100-110, 110-20, 120-30, 130-140, 140-150, 153-162'5", 162'5"-72, 172-190 (lost 7'), 190-200, 200-08, 208-215
AM 18C	1 box	270-80, 280-90, 290-98'10", 298'10"-310'9", 310'9"-320'4", 476-84
AM 26C	4 boxes	595-603, 603-11, 611-19, 619-27, 627-35, 635-43, 643-?, 705-13, 713-21, 721-29, 729-37, 737-45, 745-53, 753-55
AM 49C	1 box	606-14, 614-22, 622-30, 630-38, 638-42, 642-50
AM 51C	2 boxes	338-46, 377-85, 385-93, 393-401, 401-09, 409-17, 417-18, 430-38, 446-54, 454-62, 462-70, 470-75
AM 79C	1 box	25-34, 34-44, 44-54, 54-64, 64-70
AM 113C	1 box	270-80, 280-90, 290-300, 300-10, 310-20, 320-35, 335-50
AM 119C	1 box	26-36, 36-41, 105-15, 115-25, 125-35
AM 127C	1 box	40-50
AM 135C	1 box	373-83, 383-91, 391-99, 452-60, 460-68, 468-78, 676-84
AM 149C	1 box	340-48, 348-55, 380-88, 388-96, 396-404, 404-12, 412-422

**A. H. ROSS & ASSOCIATES**  
CONSULTING CHEMICAL & METALLURGICAL ENGINEERS  
1706 - 80 RICHMOND STREET WEST  
TORONTO, ONTARIO M5H 2A4  
CANADA

~~1848~~  
2-20  
J. ABRAMO  
JAN 9 1978  
Mgr. Met. Opr.

A. H. ROSS - PRINCIPAL  
K. R. COYNE - PRINCIPAL ASSOCIATE (SENIOR)  
N. GIBSON - PRINCIPAL ASSOCIATE

D. H. EBERTS - SENIOR ASSOCIATE  
M. J. LAKE - SENIOR ASSOCIATE  
D. F. LILLIE - SENIOR ASSOCIATE

W. V. BARKER  
M. E. GRIMES  
A. S. HAYDEN  
J. L. HOPKINS  
R. H. RICHARDS  
R. C. SWIDER  
E. W. S. WARD

January 4, 1978

CODE 416-366-1653  
CABLE "ROSSONTO"  
TELEX 06-22325 (ROSSONTO TOR.)

Minerals Exploration Company,  
P.O. Box 50324,  
Tucson, Arizona, 85703,  
U.S.A.

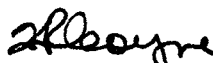
Attention: Mr. J.A. Abramo

Dear Sir: Re: Anderson Project - Hazen Research Invoice

We enclose two copies of an invoice dated December 27, 1977 from Hazen Research, Inc. in the amount of \$12,307.00.

This statement is for test work performed during the month of December on samples from the Anderson deposit. The charges are consistent with the services rendered during the stated period. We recommend that payment of this invoice be made directly to Hazen Research, Inc.

Yours very truly,

  
K.R. Coyne, P. Eng.

KRC:bm  
Enclosure

35  
J. J. [Signature]  
JAN 19 1978  
Mgr. Met. Dept.  
9.103

January 16th, 1978

Mr. E. E. Hivaly  
Koppers Company, Inc.  
Hardinge Operation  
P.O. Box 312  
York, Pa 17405  
U.S.A.

Dear Gene:

Re: Minerals Exploration Company-Anderson Project

Samples of core from the above noted uranium deposit were submitted to you for assessment to determine whether a continuous pilot plant scale test of semi-autogenous grinding is warranted. Mr. A. H. Renault had requested additional samples for laboratory testing from Mr. J. A. Abramo of Minerals Exploration Company. In a conversation with Mr. Renault on January 3, we advised that the drill core available for metallurgical testing was limited but a sample of a deposit composite would be sent to you; in this respect Mr. E. Coltrinari of Hazen Research, Inc., Golden, Colorado has been instructed to ship 5 lbs of a weighted composite to your attention.

This overall weighted composite sample available to you has been made from six separate composite samples, each of which generally represents a mining period during the life of the project. The composite was weighted as follows:

	<u>% Weight</u>
Composite A	16
B	14
C	22
D	19
E	21
F	8

For your information the enclosed Table 1 is a copy of telexed information reporting the results of laboratory scale wet ball mill tests on each of the six individual composites performed by Hazen Research to determine comparative ore hardness.

C  
O  
P  
Y

Mr. E. E. Hively  
Koppers Company, Inc.  
Pg. (2)

January 16th, 1978


In addition, we attach a copy of Table 2 which is telexed information from Hazen Research reporting the results of wet rod mill grinding tests on Composite C using grinding times of 2, 4, 5, 7 and 10 minutes.

Table 3 attached shows the results of wet ball grinds for 7 and 11 minutes on Master Composite 1 which was made from equal weights of each of the six individual composites A, B, C, D, E and F. The ball milling conditions were the same as shown on Table 1 except for time.

C  
The purpose in providing you with samples and grinding test data is to obtain your recommendation on the type of sample that should be selected for pilot plant testing should you believe that semi-autogenous grinding has merit for this project. We are anxious to have your comments as soon as possible so that plans can be formulated on where to locate an adit into the deposit for sampling purposes.

O  
Our representative on this project is Maurice E. Grimes and you should contact him if you have any questions or require assistance.

Yours very truly,

  
K. R. Coyne, P. Eng.

KRC:mlh

Y  
cc: J. A. Abramo - (with enclosures)  
A. H. Renault - (with enclosures)  
R. A. Smith - (with enclosures)

TABLE I

ORE HARDNESS-COMPARATIVE GRINDS

GRINDING CONDITIONS:

ORE FEED

MINUS 6 MESH, ALL COMPOSITES OF SIMILAR SIZE DISTRIBUTION, 1000 G

BALL MILL  
BALL CHARGE

7-5/8 INCH ID X 7-1/8 INCH, 65/90 RPM  
SIZE  
INCH DIAM NO.

1-1/2 - 1-3/4 7

1 - 1-1/4 33

3/4 17

1/2 25

/ SOLIDS  
TIME

50  
10 MINUTES

SCREEN ANALYSIS

WEIGHT DISTRIBUTION, %

MESH SIZE	MINUS 6 M FEED	COMP A	COMP B	COMP C	COMP D	COMP E	COMP F
/8	6.7-7.5						
8X10	17.6-19.8						
10X14	15.0-16.7						
14X20	11.3-12.0						
20X28	8.7-9.0	5.0	4.8	4.5	2.5	6.6	0.5
28X35	6.6-6.7	2.1	2.0	1.7	0.8	1.5	0.6
35X48	5.6-6.0	7.5	7.4	6.8	4.2	6.7	1.6
48 X 65	4.1-4.7	9.5	9.3	9.2	6.7	9.1	3.4
65X100	3.9-4.6	10.6	10.4	11.0	9.3	10.0	6.4
100X150	3.0-4.6	9.4	9.4	10.0	8.7	9.4	8.7
150 X200	2.7-5.5	6.6	6.0	6.3	6.1	5.9	8.5
MINUS 200	8.4-10.0	49.3	50.7	50.5	61.7	50.8	70.3

ROD MILL GRINDING DATA ARE:

TABLE 2

ROD MILL GRIND, COMPOSITE C

GRIND CONDITIONS:

ROD MILL	7-5/8" DIA. X 9-1/2", 85/90 RPM
ROD CHARGE	8.04 KG
ORE CHARGE	1.0 KG -6 MESH
H2O	1.0 LITER
TIME	2, 4, 5, 7, 10 MIN

SCREEN ANALYSIS

GRIND TIME, MIN MESH	2	4	5	7	10
/14	5.1	0.3	0.0		
14 X 20	7.2	0.8	0.1		
20 X 28	10.2	4.1	1.5	0.0	
28 X 35	10.3	9.9	3.9	0.1	0.0
35 X 48	9.6	11.9	12.3	1.9	0.2
48 X 65	8.1	8.0	11.2	8.3	2.2
65 X 100	3.1	8.3	11.0	14.9	10.5
100 X 150	6.0	7.7	11.8	14.1	14.6
150 X 200	5.8	6.9	8.6	11.0	14.0
200 X 270	4.8	5.9	2.7	7.3	9.3
270 X 325	1.2	2.0	0.4	1.2	2.4
- 325	28.6	34.2	36.5	41.2	46.8
	100.0	100.0	100.0	100.0	100.0

Table 3

A49

COMPOSITE SAMPLE GRIND TIME, MIN	MASTER COMP. #1 LEACH FEED 7			MASTER COMP. #1 LEACH FEED 11		
	SIZE MESH	WT %	Cum. WT. % RETAINED PASSING	WT %	Cum. WT. % RETAINED PASSING	WT %
+8						
8x10	0					
10x14	1.9	1.9	98.1			
14x20	2.0	3.9	96.1	0.6	0.6	99.4
20x28	3.6	7.5	92.5	0.7	1.3	98.7
28x35	5.9	13.4	86.6	2.0	3.3	96.7
35x48	7.9	21.3	78.7	5.1	8.4	91.6
48x65	8.2	29.5	70.5	8.1	16.5	83.5
65x100	8.8	38.3	61.7	10.8	27.3	72.7
100x150	9.0	47.3	52.7	11.5	38.8	61.2
150x200	7.3	54.6	45.4	8.6	47.4	52.6
200x270	7.5	62.1	37.9	8.9	56.3	43.7
270x325	3.1	65.2	34.8	3.8	60.1	39.9
-325	24.8	100.0	0.0	39.9	100.0	0.0



**A. H. ROSS & ASSOCIATES**  
CONSULTING CHEMICAL & METALLURGICAL ENGINEERS  
1706 - 80 RICHMOND STREET WEST  
TORONTO, ONTARIO M5H 2A4  
CANADA

J. ABRAM

MAR 27 1978

Mgr. Met. Upr.

A. H. ROSS - PRINCIPAL  
K. R. COYNE - PRINCIPAL ASSOCIATE (SENIOR)  
N. GIBSON - PRINCIPAL ASSOCIATE

D. H. EBERTS - SENIOR ASSOCIATE  
M. J. LAKE - SENIOR ASSOCIATE  
D. F. LILLIE - SENIOR ASSOCIATE

W. V. BARKER  
M. E. GRIMES  
A. S. HAYDEN  
J. L. HOPKINS  
R. H. RICHARDS  
R. C. SWIDER  
E. W. S. WARD

CODE 416-366-1653  
CABLE "ROSSONTO"  
TELEX 06-22325 (ROSSONTO TOR.)

20th March, 1978

Minerals Exploration Company,  
P. O. Box 50324,  
Tucson, Arizona 85703  
U.S.A.

Attn: Mr. J. A. Abramo


Dear Sir,

Re. Hazen Research Invoice - Anderson  
Project

We enclose two copies of an invoice from Hazen Research Inc., dated March 1, 1978, in the amount of \$14,615.43.

These charges are for testwork performed by Hazen Research Inc., during February, 1978 in developing the flowsheet for the Anderson project. We find the charges consistent with the services performed, and would recommend payment to Hazen Research Inc.

Yours truly,

  
M. E. Grimes, P.Eng.

MEG/va  
enc.

# INVOICE



## HAZEN RESEARCH, INC.

4601 INDIANA ST.      TELE. (303) 279-4501  
GOLDEN, COLORADO 80401

March 1, 1970  
Period Covered: 2/1 - 2/28/70  
Hazen Research Project 4407  
Accountability of Anderson Uranium Ore  
to Acid Leach and SX for U Recovery

Minerals Exploration Co.  
Attn: John Abrams  
P.O. Box 2674  
Gasper, Wyoming 82501

DESCRIPTION	SUB TOTAL	TOTAL
Staff Charges		
Apprentice Technicians	3,256.00	
Technicians	1,563.00	
Shop Personnel	54.00	
Senior Technicians	150.50	
Project Foreman	2,145.00	
Project Engineers	1,362.50	
Management	4,390.00	
Total Staff Charges		18,399.00
Analytical Charges		30.00
Instrument Charges		120.00
Direct Charges		1,076.45
<b>TOTAL INVOICE</b>		<b>\$19,625.45</b>
PREVIOUS BALANCE	CURRENT CHARGES	CREDITS
<b>AMOUNT DUE</b>		<b>\$19,625.45</b>

John Abrams  
2/28/70  
Business Manager

INVOICES DUE WITHIN 10 DAYS OF RECEIPT

PAYABLE IN U.S. CURRENCY

PLEASE RETURN ONE COPY WITH REMITTANCE

A. H. ROSS & ASSOCIATES  
CONSULTING CHEMICAL & METALLURGICAL ENGINEERS  
1706 - 80 RICHMOND STREET WEST  
TORONTO, ONTARIO M5H 2A4  
CANADA

J. ABRAMO

APR 24 1978

Mgr. Met. Opr.

A. H. ROSS - PRINCIPAL  
K. R. COYNE - PRINCIPAL ASSOCIATE (SENIOR)  
N. GIBSON - PRINCIPAL ASSOCIATE

D. H. EBERTS - SENIOR ASSOCIATE  
M. J. LAKE - SENIOR ASSOCIATE  
D. F. LILLIE - SENIOR ASSOCIATE  
R. H. RICHARDS - SENIOR ASSOCIATE

W. V. BARKER  
M. E. GRIMES  
A. S. HAYDEN  
R. C. SWIDER  
E. W. S. WARD

April 17, 1978

CODE 416-366-1653

CABLE "ROSSONTO"

TELEX 06-22325 (ROSSONTO TOR.)

Mr. J.A. Abramo,  
Minerals Exploration Company,  
P.O. Box 50324,  
Tucson, Arizona, 85703,  
U.S.A.

Dear John:

Re: Hazen Research Charges, March 1978

We have reviewed the enclosed invoice from Hazen Research Inc. for the month of March 1978 and find it to be consistent with the work undertaken on the Anderson project. We recommend that the invoice be paid directly to Hazen Research.

Yours truly,

  
M.E. Grimes, P. Eng.

MEG:bm

cc: Mr. D. Soderstrom(without enclosure)

2.20



# INVOICE



## HAZEN RESEARCH, INC.

4601 INDIANA ST.                      TELE. (303) 279-4501  
GOLDEN, COLORADO 80401

J. ABRAMO  
JUL 13 1978  
Mgr. Met. Opr.

July 1, 1978  
Period Covered: 6/1-6/30/78  
Hazen Research Project: 4407  
Amenability of Anderson Uranium Ore to  
Acid Leach and SX for U Recovery

Minerals Exploration Co.  
Attn: Mr. John Abramo  
P.O. Box 50324  
Tucson, AZ 85705

*2-20.04*

DESCRIPTION	SUB TOTAL	TOTAL
Staff Charges		
Technicians	14.00	
Secretarial	5.00	
Total Staff Charges		19.00
Analytical Charges		30.00
Direct Charges		6.01
<b>TOTAL INVOICE</b>		<b>\$55.01</b>
PREVIOUS BALANCE	CURRENT CHARGES	CREDITS
<b>AMOUNT DUE</b>		<b>\$55.01</b>

APPROVED: *[Signature]*

VERIFIED: *[Signature]*

CHARGE: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# INVOICE



## HAZEN RESEARCH, INC.

4601 INDIANA ST.

TELE. (303) 279-4501

GOLDEN, COLORADO 80401

July 1, 1978

Period Covered: 6/1-6/30/78

Hazen Research Project: 1987

Assessability of Anderson Uranium Ore to  
Acid Leach and SX for U Recovery

Minerals Exploration Co.  
Attn: Mr. John Adriano  
P.O. Box 50824  
Phoenix, AZ 85005

DESCRIPTION	SUB TOTAL	TOTAL		
Staff Charges Technicians Secretarial Total Staff Charges	14.00 5.00	19.00		
Analytical Charges		30.00		
Direct Charges		6.01		
TOTAL INVOICE ►		\$85.01		
PREVIOUS BALANCE	CURRENT CHARGES	CREDITS	AMOUNT DUE ►	\$85.01

INVOICES DUE WITHIN 10 DAYS OF RECEIPT

PAYABLE IN U.S. CURRENCY

PLEASE RETURN ONE COPY WITH REMITTANCE

Minerals Exploration Company  
P.O. Box 50324  
Mine Development Group  
1846 W. Grant Road, Suite 108  
Tucson, Arizona 85705  
Telephone: (602) 884-8073



July 29, 1977

Head Office:  
P.O. Box 54945  
Los Angeles, California 90054  
(213) 486-6929

Chemical & Geological Laboratories  
P.O. Box 2794  
Casper, Wyoming 82601

Dear Sir:

I am enclosing 15 pulp samples from the Anderson Project to be analyzed for chemical uranium. These are the samples we discussed on the phone. Please analyze them at no cost to Minerals Exploration. I hope we can pinpoint the problem with these analyses.

Thank you for your cooperation in dealing with this problem.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Robert F. Lucht". The signature is written in a cursive style with a large, prominent "R" and "L".

Robert F. Lucht  
Geological Engineer

RFL/pb  
Enclosures

ANDERSON MINE - ADIT TO OBTAIN BULK SAMPLE

OPTION A

Portal Preparation	\$10,000
Portal Sets-5 @ \$150 each	750
Decline 310' @ \$150/ft	46,500
Drift on Ore-35' @ \$150/ft	5,250
Timbered Sets thru Lakebed-27 @ \$150 each	4,050
Muck Haulage-1245 Tons @ \$.95/ton	1,180
Contingencies @ 10%	<u>7,270</u>
TOTAL	\$75,000

OPTION B

Portal Preparation	\$10,000
Decline 250' @ \$200/ft (extra steep)	50,000
Full Timbered Sets-50 @ \$150 each	7,500
Muck Haulage-610 tons @ \$.95/ton	580
Contingencies @ 10%	<u>6,920</u>
TOTAL	\$75,000

GCD (10/21/77)