LEDINGHAM

Ledingham Construction Ltd.
1758 W. 8th Ave.,
Vancouver, B.C. V6J 1V6
604-736-3373

TURN OVER

Bruce W. Ledingham
PRESIDENT

MAC 20-03-82 1705 HR

SORRY TO MISS YOU.

I TRIED TO CALL A COUPLE OF TIMES, BUT N/A.

PLEASE MAIL THE MATERIAL AS SOON AS YOU CAN, AS IT IS FUNDAMENTAL IN OUR DESISION MAKING

THANKS, BRUCE

RICHARD W. PADDACK
vice president/general manager

LEDINGHAM CONSTRUCTION LTD.
1758 W. 8th Ave., Vancouver, B.C. V6J 1V6 736-3373

CLAUDE DESJARDINS

V. P. FINANCE

D.D.H. GEOMANAGEMENT LTD.

D.A. (Dave) HOWARD, M.SC. P.ENG
SECRETARY AND DIRECTOR

422
~~317~~ - 470 Granville Street,
Vancouver, B.C.
Canada V6C 1V5
Tel.: (604) 681-4413

Rawhide Pad

8700 Tons @ 61 lbs

@ 0.0073 lbs

X 400 = $24,400

21,801 lbs @ $9 196,209

$220,609

EMPIRE

8700 Tons X 0.058 lbs

504.6 lbs X 400 = $201,840

X 2.59 lbs X 8700

$2253302 lbs X $9 202,797

EMPIRE → $404,637

Rawhide pad remaining → 201,609

Should have Received → $203,028

Avery 10

A u

0•	*
1•559	+
0•250	+
002••••••••••	◊
1•809	◊
1•809	÷
31•	=
0•058	*
0•058	×
500•	=
29•000	*
0•	*

Au

35•338	+
44•864	+
002••••••••••	◊
80•202	◊
80•202	÷
31•	=
2•587	*
2•587	×
15•	=
38•805	*

29.00
38.805
$67.805

~~44•864~~	~~+~~
~~25•739~~	~~−~~
~~4•486~~	~~+~~
~~005••••••••••~~	~~◊~~
~~103•813~~	~~◊~~
~~103•813~~	~~÷~~
~~10•~~	~~=~~
~~10•381~~	~~*~~

0•	*
44•865	+
25•739	−
4868•000	+
	#
44•864	+
44•864	−
2•	#
005••••••••••	T
4887•126	T
4•864	+
0•	*
44•864	+
25•739	−
19•125	◊
19•125	÷
10•	=
1•913	*
35•338	+
19•125	+
73•588	÷
31•	=
2•374	*
2•374	×
15•	=
35•610	*
35•610	+
0•	*
35•610	+
35•610	+
38•805	+

	0•	*
	Sa	
RA-1	0•151	+
	0•088	+
	0•071	+
	0•161	+
	0•117	+
	0•029	+
	0•000	+
	0•030	+
	0•236	+
	0•106	+
	0•295	+
	0•082	+
	0•000	+
	0•046	+
	0•050	+
	0•041	+
	0•022	+
	0•009	+
	0•000	+
	0•025	+
	0•000	+
021	••••••••••	◊
	1•559	◊
	1•559	÷
	21•	=
02 —	0•074	*
	0•074	×
	500•	=
#	37•000	*
	0•	*

	0•	*
RR—	Ag	
	1•269	+
	2•459	+
	0•634	+
	2•154	+
	1•319	+
	0•499	+
	0•000	+
	0•381	+
	1•860	+
	0•966	+
	1•259	+
	0•231	+
	0•045	+
	0•970	+
	15•222	+
	0•617	+
	4•033	+
	0•330	+
	0•566	+
	0•425	+
FR 5C	0•099	+
021••••••••••		◊
	35•338	◊
	35•338	÷
	21•	=
	1•683	*
	0•	*
	1•683	+
	1•683	×
	15•	=
	25•245	*
	25•245	+
	0•	*
	25•245	+
	0•	*
	25•245	+
	37•000	+
002••••••••••		T
	62•245	T
	0•	*

CA—	Au	
	0•029	+
	0•031	+
	0•014	+
	0•011	+
	0•007	+
	0•014	+
	0•012	+
	0•019	+
	0•085	+
	0•028	+
	0•250	◊
.025	0•250	÷
500	10•	=
$12,500	0•025	*
	0•	*
		↳
	0•	*

CA— A_9 *

1•172	+
0•927	+
0•160	+
2•278	+
1•039	+
5•038	+
1•406	+
1•856	+
25•739	+
5•249	+
010••••••••••	◊
44•864	◊
44•864	÷
10•	=
4•486	*

4.486
× 15
= $67.29
12.50
$79.79

S/T—

4•486	×
15•	=
67•290	*

44•864	+
25•739	−
19•125	◊
4•486	+
23•611	◊
23•611	÷
10•	=
2•361	*

CA

~~35•338~~	~~+~~
~~23•661~~	~~+~~
~~82•610~~	~~◊~~

0•	*

35•338	+
23•661	+
58•999	◊
58•999	÷
31•	=
1•903	*
1•903	×
15•	=
28•545	*
0•	*

RA×CA

	*
1•172	+
0•927	+
0•16	+
2•278	+
1•039	+
5•033	+
1•406	+
1•856	+
25•739	+
5•249	+
44•364	◊
1•269	+
2•459	+
0•634	+
2•154	+
1•319	+
0•499	+
0•	+
0•381	+
1•36	+
0•966	+
1•259	+
0•231	+
0•045	+
0•97	+
15•222	+
0•617	+
4•033	+
0•33	+
0•566	+
0•425	+
0•099	+
80•202	◊
44•364	−
35•338	T
0•	*
80•202	÷
31•	=
2•58716129	*
2•59	×
9•	=
23•31	*
23•31	×
8700•	=
202797•	*
0•	*
2•59	×
8700•	=
22533•	*

	22533•	×
	9•	=
	202797•	*
	0•	*

	0•029	+
Au	0•031	+
	0•014	+
	0•011	+
	0•007	+
	0•014	+
	0•012	+
	0•019	+
	0•085	+
	0•085	+
	0•085	−
	0•028	+
10	0•25	◊
0.151 →	0•15	+
	0•088	+
Au	0•071	+
	0•161	+
	0•117	+
	0•029	+
	0•	+
	0•03	+
	0•236	+
	0•106	+
	0•295	+
	0•082	+
	0•	+
	0•046	+
	0•05	+
	0•041	+
	0•022	+
	0•	+
21	0•025	+
	0•	+
	0•009	+
Total →	1•808	◊
	0•25	−
	1•558	T
	1•808	÷
	31•	=
	0•05832258	*

oz/Ton Au

	0•058	×
	8700•	=
oz Au	504•6	*
	504•6	×
	400•	=
$ Au	201840•	*

	*
400•	×
0•07	=
(A) 28•00	*
0•05	=
(B) 20•00	*
0•02	=
(C) 8•00	*
9•00	×
1•68	=
(A) 15•12	*
1•45	=
(B) 13•05	*
0•096	=
(C) 0•86	*

7+B

Aq

```
                    *
A          0•15     +
           0•08     +
           0•07     +
           0•16     +
           0•11     +
           0•02     +
           0•00     +
           0•03     +
           0•23     +
           0•01     +
           0•29     +
           0•08     +
           0•00     +
           0•04     +
           0•05     +
           0•04     +
           0•02     +
           0•00     +
           0•00     +
           0•02     +
           0•00     +
     021••••••••••  ◊
A          1•40     ◊


           0•02     +
           0•03     +
           0•01     +
           0•01     +
           0•00     +
           0•01     +
           0•01     +
           0•01     +
           0•08     +
           0•02     +
B    031••••••••••  ◊
           1•60     ◊
Peter


           0•       *

           1•60     +
         140•00     −
           0•       *

           1•60     +
           1•40     −
C    002••••••••••  T
           0•20     T

           1•40     ÷
            21•     =
A          0•07     *


           160•     ÷
            31•     =
           5•16     *


           1•60     ÷
            31•     =
B          0•05     *
           0•20     ÷
            10•     =
C          0•02     *
```

A3

0•	*
	*
1•26	+
2•45	+
0•63	+
2•15	+
1•30	+
0•49	+
0•00	+
0•38	+
1•86	+
0•96	+
1•26	+
0•23	+
0•04	+
0•97	+
15•22	+
0•61	+
4•03	+
0•33	+
0•56	+
0•42	+
0•09	+
35•24	◊

B

35,24
25,73
$60,97

0•	*
1•17	+
0•92	+
0•16	+
2•27	+
1•03	+
5•03	+
1•40	+
1•85	+
25•73	+
5•24	+
010••••••••••	◊
44•80	◊
44•80	÷
31•	=
1•45	*

A

35•24	÷
21•	=
1•68	*

C

~~44•80~~	~~+~~
~~35•24~~	~~−~~
~~014••••••••~~	~~◊~~
~~63•72~~	~~◊~~

0•	*
44•80	+
35•24	−
9•56	÷
10•	=
0•96	*

	0•	*
Ag	1•21	+
	0•09	+
	0•	+
	1•23	+
	0•25	+
	0•44	+
	4•5	+
	24•47	+
	4•66	+
	2•82	+
	0•37	+
	1•58	+
	0•	+
	1•88	+
	4•97	+
	0•07	+
	0•	+
	0•	+
	0•064	+
	0•002	+
	0•064	−
	0•002	−
	0•82	+
	0•1	+
	1•36	+
025•••••••••		◊
	50•82	◊
	50•82	÷
30.72	21•	=
31.20	2•42	*
#62.92	2•42	×
	16•	=
	38•72	*

	0•	*
Au	0•074	+
	0•018	+
	0•002	+
	0•172	+
	0•1	+
	0•012	+
	0•014	+
	0•05	+
	0•016	+
	0•064	+
	0•032	+
	0•044	+
	0•01	+
	0•022	+
	0•202	+
	0•012	+
	0•01	+
	0•002	+
	0•064	+
	0•002	+
	0•17	+
021•••••••••		◊
	1•092	◊
	1•092	÷
	21•	=
	0•052	*
	0•052	×
	600•	=
	31•2	*

Tom Melrose

Jim Marsh

9 oz

+ 400 —

Ac

Tg

#21

0.07

1.68

$28 oz

$43.12

15.12

B # 31 Total = B

1.45

0.05

$20 oz

33.05

13.05

C #10

0.02

0.96

$8 oz

8.86

0.86

Not Weighted Averages

CA RAWHIDE

Sample No	Gold Oz/Ton	Silver Oz/Ton
CA1	.029	1.172
CA2	.031	.927
CA8	.014	.160
CA16	.011	2.278
CA16A	.007	1.039
CA18	.014	5.038
CA18A	.012	1.406
CA21	.019	1.854
CA22 "R"	.085	25.739
CA22A "L"	.028	5.249
	Au @ 50¢ Lbs .025 $12.50	Ag @ 15¢ Lbs 4.486 $79.779 $67.290

THE BELOW DUMPS WERE ELIMINATED

CA3	.021	.072
CA4	None	None
CA5	Trace	.109
CA6	None	None
CA7	None	None
CA9	.006	.036
CA10	None	Trace
CA11	.009	.049
CA open cut "R" Side	None	None
CA11A	.008	.077
CA13	None	Trace
CA14	None	Trace
CA15	None	Trace
CA16B	None	Trace
CA17	None	Trace
CA19	None	None
CA20	None	.028

Not weighted

Au .058 x 500 = 29.00

Ag 2.587 x 15 = 38.805

Accum $67.805

Not acquested

acquested

Au the same 29.00 28.545 Ag = $57.545

Not acquested 2.361 @ $15 = $35.415

Acquested Ag 1.903 @ $15 = 28.545 35.

Total

RR & C — RAWHIDE

Sample No	Oz/Ton Gold	Oz/Ton Silver
RR1	.151	1.269
RR2	.088	2.459
RR3	.071	.634
RR4	.161	2.154
RR5	.117	1.319
RR6	.029	.499
RR7	None	Trace
Allens Lad Cut	.030	.381
RR4A	.236	1.860
RR4B	.106	.964
RR4C	.295	1.259
RR4D	.082	.231
RR4E	Trace	.045
RR4F	.046	.970
RH1	.050	15.222
RH1 "L" Cut	.041	.617
RH2	.022	4.033
RH3	.009	.330
RR5A	Trace	.566
RR5B	.025	.425
RR5C	Trace	.099
	0.074	1.683

(A)

500 oz Au $37.00 — 15 oz Ag 25.245

$500 + 15 — $62.245

RR + C + CA

0.25 oz
1.80 oz

Prudence Mine Gros Ventr

Sample No	Dry WT.	oz/Ton Au	oz/Ton Ag
— Rawhide - Hill behind Sad —			
C3T-1 Mouth	4.542	2.845	1.711
C3T-2 Inside	.264	.045	.223
C3F face	1.255	.152	1.125
#3 behind upper open cut	9.995	.063	10.131
C4A Dump	4.132	.154	4.058
C4A upper cut	.853	.059	.840
C4A lower cut	2.748	.747	2.041
C4A between cuts	.586	.017	.580
#4 Hill behind open cut upper vein	1.185	.016	1.192
behind open cut upper vein Right	2.030	.025	2.045
behind open cut upper vein	.338		
behind open cut lower vein	.111		
behind open cut lower vein to Right	.100		
		Σ 4.143	Σ 23.946
		÷ .4143	÷ 2.39
		w/o C3T-1	w/o #3
		Σ 1.278	Σ 13.815
		÷ .147	÷ 1.54

Value Gouge $500 ; Silver @ $12

		Σ
207.15	28.68	235.83
71.	18.48	89.48

Per Mac

.192 × 5 = .71 ÷ 30 = .02 × $500. = $10./ton

1.54 × 5 = 7.70 ÷ 30 = .26 × $12. = 3.08

upper open Cut

lower open Cut

C3
Tunnel

C4 Dump

large
Rock

upper

Behind open Cut

lower

C5
Dump

Western Testing Laboratories
1080 Linda Way, No. 3
Sparks, Nevada 89431
Telephone: (702) 331-3600

Report of Analysis

Submitted by: Aztec Royalties
P.O. Box 283
Mina, Nevada 89422
Attn: Merl Richard

Date: April 3, 1980

Laboratory number: 092-3

Analytical method: Fire Assay

Your order number:

Report on: Au, Ag

Invoice number: B347

	Au (Oz/Ton)	Ag (Oz/Ton)
Rawhide		
Dump 1	0.074	1.21
Dump 2	0.018	0.09
Dump 3	0.002	0.00
Dump 4	0.172	1.23
Dump 5	0.100	0.25
Dump 6	0.012	0.44
Dump 7	0.014	4.50
Dump 8	0.050	24.47
Dump 9	0.016	4.66
Dump 10	0.064	2.82
Dump 11	0.032	0.37
Cut A	0.044	1.58
Cut B	0.010	0.00
Cut C	0.022	1.88
Cut D	0.202	4.97
Cut E	0.012	0.07
Cut F	0.010	0.00
Cut G	0.002	0.00

(Continued)

ppm = Parts per million
Percent = Parts per hundred
1 oz/ton = 34.286 ppm
1.0% = 20 pounds/ton

Oz/ton = Troy ounces per ton of 2000 pounds avoirdupois
Fineness = Parts per thousand
1 ppm = 0.0001% 1 ppm = 0.029167 oz/ton
Read + as "greater than." Read – as "less than."

Western Testing Laboratories
1080 Linda Way, No. 3
Sparks, Nevada 89431
Telephone: (702) 331-3600

Report of Analysis

Submitted by: Aztec Royalties
P.O. Box 283
Mina, Nevada 89422
Attn: Merl Richard

Date: April 3, 1980
Laboratory number: 092-3
Analytical method: Fire Assay
Your order number:
Invoice number: B347

Report on: Au, Ag

	Au (Oz/Ton)	Ag (Oz/Ton)
Rawhide		
RRHH		
Dump 1	0.064	0.82
Dump 2	0.002	0.10
Cut 1	0.170	1.36

Robert Cassell
Robert Cassell
Assayer

ppm = Parts per million
Percent = Parts per hundred
1 oz/ton = 34.286 ppm
1.0% = 20 pounds/ton

Oz/ton = Troy ounces per ton of 2000 pounds avoirdupois
Fineness = Parts per thousand
1 ppm = 0.0001% 1 ppm = 0.029167 oz/ton
Read + as "greater than." Read – as "less than."

KARL DOUGLAS KASH
GEOLOGIST.

Western Testing Laboratories
1080 Linda Way
Sparks, Nevada 89431
(702) 331-3600

REPORT

on

COLUMN CYANIDE LEACH TEST
(Laboratory No. 042-7)

to

Aztec Royalties
P.O. Box 283
Mina, Nevada 89422

SUMMARY

A column percolation cyanide leach test was conducted on a 50-pound charge of dump ore from Rawhide, Nevada, that was crushed to a nominal 1/2-inch feed. Precious metal extraction achieved in this simulated heap leach test was 65 percent of the gold and 47 percent of the silver from heads containing 0.017 ounce of gold and 3.87 ounces of silver per ton.

ORE SAMPLE PREPARATION

The entire submitted sample of dump ore was crushed to a nominal 1/2-inch size feed. A small sample, about 5 pounds was split out of the 55 pounds of ore sample, using a Jones riffle sampler. This split was crushed finer pulverized to minus 80 mesh and used for analysis.

ANALYSIS OF THE HEAD SAMPLE

The gold and silver contents of the head sample were determined by the conventional fire assay procedure. Results were:

Gold	0.013 Troy Ounce per Ton of Ore
Silver	3.10 Troy Ounce per Ton of Ore

COLUMN PERCOLATION LEACH EXPERIMENT

A 50-pound charge of a nominal 1/2-inch feed was mixed with 56.8 grams of lime (≅ to 5.0 pounds of CaO per ton of ore). This mixture was then placed in a 5.5-inch (inside diameter) plexiglass column to make a bed approximately 3 feet thick. The ore charge was leached with a solution containing 5.0 pounds of NaCN per ton. The leach liquor was applied onto the top of the bed of ore from an overhead reservoir. The solution outlet line was plumbed into the side of the reservoir. Consequently, the starting volume of leach solution was larger than the rest to compensate for the amount that did not drain from the reservoir. The leach solution dripped onto a burlap disk covering the charge of ore to disperse the solution to obtain uniform flow onto the surface of the ore. The application rate was approximately 10 gal/day/ft^2 of surface area, which amounted to 5 liters per day in this experiment.

Solution flow was regulated by means of a stopcock and a screw-type pinch clamp in the line. The pregnant effluents were collected in a plastic container underneath the leach column. Each day, the volume of solution collected was measured, analyzed for free cyanide contents, and assayed for gold and silver--using the atomic absorption analytical procedure. No attempt was made to produce barren cyanide solutions for recycle for leaching.

Upon completion of the leach period, the bed of ore was washed with tap water at the same application rate as for the leach solution. A wet screen analysis test was conducted on the tailings to determine the distribution of the unleached precious metal values in the various size fractions.

The daily operational logs, showing the volume of leach and wash solutions applied and effluents collected, are shown in Table 1.

TABLE 1

LOG FOR LEACHING ORE CRUSHED TO 1/2 INCH

Date	Cyanide Leach Solution		Pregnant Effluent		
	Volume Added (Liters)	NaCN Added (Grams)	Solution Number	Volume ~~Added~~ (Liters) Collected	NaCN ~~Added~~ Lbs/Ton Collected
2-26	7.5	17.5	----	----	----
2-27	5.0	12.5	1	3.05	0.9
2-28	5.0	12.5	2	5.07	1.0
2-29	5.0	12.5	3	4.38	1.5
3-3	5.0	12.5	4	3.50	1.4
3-4	5.0	12.5	5	5.15	1.8
3-5	5.0	12.5	6	3.75	1.8
3-6	5.0	12.5	7	8.45	2.0
3-7	5.0	12.5	8	4.00	2.2
3-10	5.0	12.5	9	5.07	2.2
3-11	5.0	12.5	10	3.65	1.9
3-12	5.0	----	11	5.67	1.7
3-13	5.0	----	12	5.70	0.9
3-14	5.0	----	13	5.63	0.3
3-17	---	----	14	4.48	0.2

EXPERIMENTAL RESULTS

The leach solution percolated downward through the 3-foot bed of ore, crushed to 1/2 inch, with no visible difficulty. No ponding of solution on top of the bed of ore was observed at any time. No migration or localization of the small amount of clayey slimes present was observed.

The amount of precious metals extracted was determined daily by conducting Chiddy-fire assays on 600-ml aliquots of pregnant and wash solutions. The recovery results are summarized in Table 2.

TABLE 2

DAILY GOLD/SILVER RECOVERIES FROM COLUMN
Leaching 50 Pounds of Dump Ore

Solution Number	Effluent Volume Liters	F.A. Analyses (600ml)		Extraction Ounce/Ton of Ore	
		Mgs Au	Mgs Ag	Gold	Silver
1	3.05	0.156	26.83	0.0010	0.175
2	5.07	0.248	40.21	0.0027	0.437
3	4.38	0.206	34.37	0.0019	0.323
4	3.50	0.185	31.51	0.0014	0.236
5	5.15	0.110	18.18	0.0012	0.201
6	3.75	0.065	10.45	0.0005	0.084
7	8.45	0.020	3.33	0.0004	0.060
8	4.00	0.065	11.20	0.0006	0.096
9	5.07	0.027	5.60	0.0003	0.061
10	3.65	0.055	8.56	0.0004	0.067
11	5.67	0.016	2.69	0.0002	0.033
12	5.70	0.016	2.26	0.0002	0.028
13	5.63	0.005	0.67	0.0001	0.008
14	4.48	0.009	0.43	0.0001	0.004
			Total	0.011	1.813
			Cyanide Tails Assay, Ounce/Ton	~~0.006~~	~~2.06~~
			Calculated Heads, Ounce/Ton	0.017	3.87

Wrong

96% Gold Extraction = 64.7 Percent
92% Silver Extraction = 46.8 Percent

.05
.005

.03
7.61

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1080 Linda Way
Sparks, Nevada 89431
(702) 331-3600

The column leach test demonstrated that the Rawhide Dump ore, crushed to a nominal 1/2-inch size, is partially amenable to percolation cyanidation treatment. Precious metals recovery was 64.7 percent of the total gold and 46.8 percent of the total silver. This recovery is equivalent to 0.011 ounce of gold and 1.81 ounce of silver per ton of ore. The tailings assayed 0.006 ounce of gold and 2.06 ounce of silver per ton.

The tailings were screened wet to determine which size fractions contained the residual precious metal values. The results, together with the particle size distribution and the fire assays, are shown in Table 3.

TABLE 3

SCREEN ANALYSIS OF CYANIDE TAILINGS

Product Size	Weight Percent Distribution	Gold		Silver	
		Assay Oz/Ton	Percent of Total	Assay Oz/Ton	Percent of Total
+1/2 Inch	11.6	0.026	23.8	5.80	34.4
-1/2" +1/4"	46.7	0.012	47.6	1.91	45.6
-1/4" +10 Mesh	21.0	0.014	23.8	1.69	17.9
-10 +20 Mesh	4.2	0.004	1.6	0.25	0.6
-20 +35 Mesh	4.6	0.002	0.8	0.17	0.4
-35 Sands	6.1	0.004	1.6	0.24	0.8
Slimes	5.8	0.002	0.8	0.21	0.3
Composite	100.0	0.013	100.0	1.95	100.0

The screen analysis results show that 70 percent of the residual gold and 80 percent of the silver in the tailings occurred in the plus 1/4-inch fraction, which represented 58 percent of the weight of the feed. Finer crushing would expose more values for leaching. The above results indicate that crushing to minus 1/2 inch or to minus 10 mesh would markedly increase the recovery of the gold and silver. It appears that crushing the plus 1/2-inch fraction of the mill feed to all minus 1/2 inch will increase the silver recovery by 0.5 ounce per ton of ore, equivalent to 60 percent of total silver. The grind for optimum gold and silver extractions is minus 10-mesh feed. Assuming that the silver mineralization is consistent between the coarse and fine fractions, one can expect a silver recovery of about 93 percent from the dump ore crushed to minus 10 mesh. However, dry crushing the ore to this fine size is difficult in practice; and, it would also preclude the application of heap leaching because of the large amounts of fines generated. ∴ 8' No 3'-5' is ok.

Reagent consumption for this column leach treatment was 5.0 pounds of lime and 8.3 pounds of sodium cyanide per ton of ore. It is believed that the cyanide consumption can be decreased markedly by application of a weaker leach solution with sacrificing the gold/silver extractions.

No attempt was made in this study to recover the silver and gold from the cyanide process solutions. Heap leach operations in the Western United States employ either the conventional Merrill-Crowe precipitation process or the adsorption process, using granular activated carbon for treating pregnant cyanide solutions. Generally, the smaller operations prefer the zinc precipitation method for processing silver-rich cyanide solutions.

CONCLUSIONS

Precious metal recovery obtained in this laboratory-simulated heap-leach experiment was equivalent to 1.8 ounces of silver and 0.011 ounce of gold per ton from ore crushed to a nominal 1/2-inch size. These recoveries represent 47 percent of the silver and 65 percent of the gold from dump ore carrying 3.9 ounces of silver and 0.017 ounce of gold per ton. The screen analysis of the tailings show that the precious metal recovery is strongly dependent on the size of feed treated. It appears that the silver recovery can be increased to over 90 percent by crushing the dump ore to minus 10 mesh.

RECOMMENDATIONS

If the size of the ore dump is large enough to warrant additional investigation, it is suggested that column leach tests be conducted on either minus 3/8-inch or 10-mesh feed to verify my interpretations of the screen analysis results. The U.S. Bureau of Mines recently developed an agglomeration pretreatment process which permits heap leaching of finely crushed ores for improving the gold and silver extractions or recoveries. You may be interested in evaluating this technology in the laboratory or field, before commencing a conventional heap-leach operation.

$50.88
90,000
4,579,200.
<1,125,000.>
3,454,200.
25%
863,550.
÷ 200,000
432%

12.50
90,000.

HH/dj

Harold Heinen
Harold Heinen
Projects Manager

	Percent Recovery	oz./Ton @ Price =		oz./Ton @ Price =	
Gold	64.7%	.017	+500 (A) 5.50		
	96%	.017	+500 (B) 8.16		
Silver	46.8%	3.87	+12 (A) 21.73		
	92%	3.87	+12 (B) 42.72		

ΣA 27.23
ΣB 50.88

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Western Testing Laboratories

1080 Linda Way Sparks, Nevada 89431 (702) 331-3600

Invoice

No. B336

To: Aztec Royalties
P.O. Box 283
Mina, Nevada 89422
Attn: Merl Richard

Date: April 3, 1980

Laboratory Number: 089-1

Your Order Number:

Terms: Net cash payable upon presentation, unless otherwise indicated.
Please note our invoice number on your remittance.

Description	*Price*	*Amount*
Fire Assay 3 Samples for Au, Ag--RUSH BASIS	$35.00 ea	$105.00

THANK YOU

Western Testing Laboratories
1080 Linda Way, No. 3
Sparks, Nevada 89431
Telephone: (702) 331-3600

Report of Analysis

Submitted by: Aztec Royalties
P.O. Box 283
Mina, Nevada 89422
Attn: Merl Richard

Date: April 3, 1980
Laboratory number: 089-1
Analytical method: Fire Assay
Your order number:
Invoice number: B336

Report on: Au, Ag

	Au (Oz/Ton)	Ag (Oz/Ton)
Rawhide		
#1 Little Hill	0.002	0.09
#2 Across 400 ft. left on hill	0.012	0.30
#3 150' on right side of hill on out cropping	0.070	0.22

Robert Cassell
Robert Cassell
Assayer

ppm = Parts per million
Percent = Parts per hundred
1 oz/ton = 34.286 ppm
1.0% = 20 pounds/ton

Oz/ton = Troy ounces per ton of 2000 pounds avoirdupois
Fineness = Parts per thousand
1 ppm = 0.0001% 1 ppm = 0.029167 oz/ton
Read + as "greater than." Read – as "less than."