

MEMORANDUM

VANCOUVER

1982 April 21

CC: R. L. Roscoe ←

TO: D. A. Barr

FROM: T. W. Law

Baker Mine - Reserve Forecast

As a follow-up to my memorandum "Baker Mine - Operating Options" 1982 March 15, and in response to your comments, I initiated a comparison of the Roscoe Reserve Forecast to the Kierans 19 Block ore model used as the basis for the Baker Mine project. The objectives of this review were:

- (i) to better understand both the Roscoe Forecast and the Kieran's model,
- (ii) to define the factors in the Roscoe forecast that resulted in overall metal recovery estimates of 63.8% gold and 59.2% silver,
- (iii) to confirm the suitability of the Roscoe Reserve forecast as "the" planning model, and,
- (iv) to decide the merit in re-issuing my 1982 March 15 memorandum with current performance data.

The purpose of this memorandum is to answer objective (ii). A follow-up report on objectives (iii) and (iv) will be prepared after a meeting with Bob Roscoe 1982 April 26/29.

1980/81 Mining Experience

A comparison of recorded 1980/81 mining and milling production data to the Kieran's model defined the following factors:

ore dilution	=	69%
gold value content	=	81.7%
silver value content	=	72.4%

These data confirm previously reported experience factors. However, adjusted value content factors of 95% for gold and 84% for silver were used for 1982-84.

Roscoe Reserve Breakdown

(i) Gold

The worksheet for gold, attached as Appendix I, is summarized.

Recovered	56,114 oz	63.8%
Lower recoveries	3,182	3.6%
Value content	5,572	6.3%
Exclusion - high risk	<u>23,132</u>	<u>26.3%</u>
	88,000 oz	100.0%

(ii) Silver

The worksheet for silver, attached as Appendix II, is summarized.

Recovered	1,064,193 oz	59.2%
Lower recoveries	62,602	3.5%
Value content	266,345	14.8%
Exclusion - high risk	<u>404,860</u>	<u>22.5%</u>
	1,798,000 oz	100.0%

The most significant item for both gold and silver is the exclusion factor (shown in red and orange on attached sketch). This includes

- (a) vein areas in the Kieran's model that don't exist or have been bypassed,
- (b) areas excluded because of cut-off, and
- (c) a large area defined as ore by Kierans that in Roscoe's judgment is high risk and is just as likely to be sub-ore.

My preliminary review breaks this down as follows:

	<u>Gold(oz)</u>		<u>Silver(oz)</u>	
Bypassed	8,000	9.1%	172,808	9.6%
Cutoff (0.3)	612	0.7	10,798	0.6
High Risk	<u>14,520</u>	<u>16.5</u>	<u>221,254</u>	<u>12.3</u>
	23,132	26.3%	404,860	22.5%

Conclusion

The reason for the overall metal recovery estimates of 63.8% gold and 59.2% silver, is the large block of ore above the 54 level considered as high risk by Roscoe. Preliminary sampling and development work out of the 54 stope appears to support Roscoe's contention.

I have explained why the forecast metal recovery percentages are so low, but I am not convinced Roscoe's "exclusion" judgment is correct. This will be reviewed the week of April 26 and reported on in the follow-up report.



TWL/ap

APPENDIX I

Roscoe Reserve Forecast - Explanation Worksheet

<u>Gold</u>	<u>Ore Au Value</u>	<u>Project Recovery Au .955</u>	<u>Actual Recovery</u>
Mined 80/81	18,260	17,447*	8,955
Stockpile			4,230
Value Content 80/81 @ .817	<u>(3,349)</u>		<u>13,185</u>
Adjusted Ore	14,911	14,247	
Lower Recovery		<u>(1,062)</u>	
		13,185	
55 & 54 Levels To Mine	49,630	47,420*	42,929
Value Content 82/84 @ .95	<u>(2,482)</u>		
	47,148	45,050	
Lower Recovery		<u>(2,121)</u>	
		42,929	
Ore Bodies Excluded	24,111	23,132*	Ø

SUMMARY

Project Ore	92,101	88,000* oz.	
Lower Recovery 80/81		(1,062)	
Lower Recovery 82/84		(2,120)	
Value Content 82/81 (.817)		(3,200)	
Value Content 82/84 (.955)		(2,372)	
Excluded as Low Value		<u>(23,132)</u>	
		<u>56,114</u> oz. Au recovered.	

TWL/krl

APPENDIX II

Roscoe Reserve Forecast - Explanation Worksheet

<u>Silver</u>	<u>Ore Au Value</u>	<u>Project Recovery Au .955</u>	<u>Actual Recovery</u>
Mined 80/81 Stockpile	396,986	352,565*	157,022
Value Content 80/81 @ .724	<u>(109,568)</u>		<u>71,910</u>
Adjusted Ore Lower Recovery	287,418	255,256 <u>(26,324)</u> 228,932	228,932
55 & 54 Level To Mine	1,171,688	1,040,575*	835,261
Value Content 82/84 @ .838	<u>(190,337)</u>		
Lower Recovery	981,351	871,539 <u>(36,278)</u> 835,261	
Ore Bodies Excluded	455,956	404,860*	

SUMMARY

Project Ore 2,024,630 oz.	1,798,000	
Lower Recovery 80/81	(26,324)	
Lower Recovery 82/84	(36,278)	
Value Content 82/81	(97,307)	
Value Content 82/84	(169,038)	
Excluded as Low Value	<u>(404,860)</u>	
	<u>1,064,193</u> oz. Ag recovered.	
		<u>228,932</u>

TWL/krl