CANNON-HICKS ASSOCIATES LTD.

D. M. CANNON, P.Eng. (Geological)
H. BRODIE HICKS, P.Eng. (Mining)
M. GUIGUET, Geologist

STE. 713 - 744 WEST HASTINGS STREET, VANCOUVER 1, B.C.

TELEPHONE: 685-0181

825218

23rd June, 1971.

Mr. Carl Jonsson,
Secretary,
Dusty Mac Mines Ltd.,
1710-1177 W.Hastings St.,
VANCOUVER, B.C.

Dear Sir:

Further to your discussion yesterday with Mr. D.M. Cannon, he has requested that I write you concerning certain points in our feasibility study of February 24, 1971.

In our letter of December 17, 1970, we outlined the projected scope of this study. In the subsequent report, not all of the proposed investigations were discussed. In some instances this was because the nature of our conclusions rendered additional investigation redundant; in others we had verbally communicated our findings without subsequent written confirmation for which we apologise.

As you are aware, we had reason to believe, through a number of communications with Cominco Ltd., that they would be prepared to accept raw siliceous ore under a favourable smelter contract. We therefore stressed our investigations in this area, in particular with respect to a determination of the average silica content of the material, which required a considerable amount of unbudgeted on-site time for two senior members of our firm. We believe that all of the necessary study required to determine raw-ore economics was satisfactorily oompleted. The eventual withdrawal by Cominco of the proposed terms vitiated this effort.

Turning to concentrating techniques, we did produce studies of the economics of both flotation and cyanidation but did not report fully on all of the aspects covered in our original letter. We can advise, however, that we did cover such items as cost and availability of water, power and equipment by correspondence or phone. An air-photo reconnaissance of water route from Skaha Lake was made and correspondence conducted with the land owner effected. Power costs were obtained from West Kootenay Power. Equipment manufacturers were consulted with respect to availability of

second-hand milling and mining machinery. Mill design and erection costs were discussed with a local consulting metallurgical designer. None of these details were given in our final study which simply summarized the information.

Of chief concern to us, in respect of milling, was the problem of disposal of tailings in a settled, agricultural area. We concluded this to be the most serious obstacle in the way of proceeding with a concentrating plant and one whose solution would be so expensive as to be prohibitive when equated against the relatively small Dusty Mac tonnage. This conclusion was communicated verbally to yourself and Mr. Field, but has not hitherto been confirmed in writing.

From time to time Cominco experiences difficulty in obtaining adequate supplies of siliceous flux and we believe that at some future date the Dusty Mac will prove to be viable as a raw-ore shipper. It is therefore our recommendation that the property be retained in good standing and the situation be reviewed at intervals. We would not recommend any attempt to high-grade selected portions which would only result in depleting the potential value of the remainder of the deposit.

Yours very truly,

CANNON-HICKS ASSOCIATES LTD.

H. BRODIE HICKS, P.ENG.

HBH:mdc.

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January 22, 1971

Mr. C. R. Jonsson, Secretary,
Dusty Mac Mines Ltd.,
1710 - 1177 W. Hastings St.,
Vancouver, B. C.

Dear Carl:

As you know, we had hoped to complete our feasibility study of Dusty Mac by the end of January, but unfortunately there have been delays at Britton Research laboratories in carrying out the flotation tests, and it now appears that it will probably be the middle of February before we are able to complete our study.

I would like to point out, however, that we are increasingly optimistic about the possibility of the company carrying out its own operation, and would suggest that you await receipt of our report before making any outside commitments.

Yours very truly,

CANNON-HICKS ASSOCIATES LTD.,

H. Brodie Hicks,
P. Eng.

HBH/lm

CANNON-HICKS ASSOCIATES LTD.

D. M. CANNON, P.Eng. (Geological)
H. BRODIE HICKS, P.Eng. (Mining)
M. GUIGUET, Geologist

STE. 713 - 744 WEST HASTINGS STREET, VANCOUVER 1, B.C. TELEPHONE: 685-0181

February 15, 1971

Dusty Mac Mines Ltd.
1710-1177 West Hastings Street
Vancouver, B.C.

Attention: Mr. C. Jonsson
Secretary Treasurer

Dear Sir:

We regret to advise that our preliminary feasibility study of the economics of the Dusty Mac Property cannot as yet be completed because (a) the final metallurgical reports from Britton Laboratories will not be available until this week and (b) firm smelter terms from Cominco at Trail have yet to be received. However, we have sufficient information from both sources to be able to conclude that a viable operation will be possible in any one of three ways - (1) shipment of raw ore, (2) production of a flotation concentrate or, (3) production of a cyanide precipitate. It remains only to select the optimum method, bearing in mind both operating and capital costs. On the basis of present information, shipping of raw ore appears the most attractive choice.

ORE RESERVES:

The highly erratic nature of the occurrence makes it difficult to arrive at a firm estimate of reserves. However, recent large-scale resampling of diamond drill hole rejects from earlier work and considerations of open-pit design make it possible to estimate a minimum probable reserve of 55,350 tons grading 0.23 oz/ton gold, 4.9 oz/ton silver, 80.4% silica, 5.9% alumina and 1.8% iron. Ore: waste ration will be approximately 18:15.

From known surface exposures and the occurrence of values in drill hole intersections outside the above estimates, it is probable that, as mining proceeds, additional ore will be found.

MINING:

Whether or not a mill be erected, it will be most economical to carry out all breaking in one annual concentrated period of approximately two or three months. The broken ore will be stockpiled and drawn on as required during the remainder

of the year. Mining cost, delivered to the stockpile, is estimated at $3.00 per ton, including all overhead expenses.

A comparatively high cost from drilling and blasting has been accepted in order to produce maximum fragmentation and avoid the necessity of purchasing a large crusher the expense of which cannot be justified in view of the small total tonnage involved.

SHIPMENT OF RAW ORE:

On the basis of a preliminary indication of terms by Cominco, material of the estimated ore reserve grade is expected to return $17.62 per ton before the cost of mining and shipping. This is not yet firm nor are Cominco as yet prepared to specify the quantity and rate of delivery although the figure of 1,500 tons per month has been suggested.

Cost of shipping including loading from the stockpile, sampling, supervision and all overhead is estimated at $7.84 per ton which, when added to the mining cost of $3.00 per ton, leaves a net profit per ton of $6.78.

Preproduction costs would include pit preparation and breaking of, say, 18,000 tons or ore plus normal overhead charges. Actual delivery of ore would commence toward the end of the first month of operations, but payments might be delayed for as much as a further two months, hence it will be well to provide for three months working capital. A preliminary overall figure of $75,000 may be suggested.

FLOTATION CONCENTRATION:

Preliminary figures from Britton Laboratories indicate that by flotation, 92.1% of the gold and 83.1% of the silver can be recovered in a concentrate grading 14.5 oz/ton gold and 255.6 oz/ton silver. Concentration ratio will be approximately 50:1.

Cominco will accept this material but the grade is outside the range normally covered by their smelter sohedules and it will accordingly be necessary for them to submit a special offer which is in the course of preparation. It is probable that the net return per ton of ore mined will be of the order of $16.00 per ton.

Mining cost will continue at $3.00 per ton and milling is estimated at $4.00 per ton for a total cost of $7.00 per ton and a profit of $9.00 per ton.

Capital cost of a flotation mill including provision of electricity and water, tailings disposal and all ancillary requirements is estimated at $250,000. Of this, $75,000 would be recovered by resale of equipment after the termination of operations. The net cost of the plant, therefore, written off against the known ore would be of the order of $3.15 per ton. This may be contrasted against the additional $2.22 recoverable by milling as opposed to shipment of raw ore and suggests that the latter is the more profitable unless additional reserves can be found.

This conclusion is not yet final because the Cominco terms for both ore and concentrates and their rate of acoeptance of raw ore are not known.

The overall preproduction capital required would be the cost of the mill $250,000 plus the mining preproduction costs cited above at $75,000 for a total of $325,000.

CYANIDATION:

On the basis of Britton's preliminary figures, better recoveries can be made by cyanidation than by flotation viz. 96.7% of the gold and 95.1% of the silver. Again, net smelter return can only be estimated but it may be suggested that the improvement over flotation would be of the order of $1.50 per ton of ore.

Because the cyanide process is more complicated than flotation and requires closer supervision and better qualified operators, milling cost could be expected to increase by possibly $0.50 per ton. In addition, cost of the mill would probably be increased by $25,000.

These considerations would still leave a margin in favour of cyanidation over flotation but the most urgent consideration is probably the diffioulty of dealing with the satisfactory disposal of the cyanide residues in the light of present ecological pressures. On the whole, it is doubtful if cyanidation can be accepted.

SUMMARY:

On the basis of present known data, the greatest profit

and lowest capital requirement appear to lie with shipment of raw ore to Trail.

It is hoped that within a week or ten days all further necessary information will be on hand to permit firm recommendations to be made.

Respectfully submitted,

CANNON-HICKS ASSOCIATES LTD.

H. BRODIE HICKS, P. ENG.

CONSULTING ENGINEER.

HBH/lce

cc Mr. Harold Field

CANNON-HICKS ASSOCIATES LTD.

D. M. CANNON, P.Eng. (Geological)
H. BRODIE HICKS, P.Eng. (Mining)
M. GUIGUET, Geologist

STE. 713 - 744 WEST HASTINGS STREET, VANCOUVER 1, B.C. TELEPHONE: 685-0181

19th March, 1971.

Dusty Mac Mines Ltd. N.P.L.,
1710-1177 W.Hastings St.,
VANCOUVER.

Attention : Mr. C.Jonsson.

Dear Carl:

Thank you for your letter of March 18 with the enclosed cheque. With respect to your various comments concerning our account, this will be reviewed with our accountant early next week and I will then be advising you concerning the various charges.

Turning to your comments with respect to the Feasibility Report, I could comment as follows:

Ore Reserves:

There has not been any change in the overall ore reserves. However, in considering the best method of open pit mining the deposit, it became apparent that optimum costs could be achieved by attacking the ore bodies by means of three small open pits. This method leaves a certain tonnage of reserves in areas between open pits, and on the basis of present information, these additional tonnages could only be mined by breaking an inordinate amount of waste. In other words, by reducing the tonnage we believe we have increased the profit per ton on the remaining quantity. It is possible as mining proceeds, that we will find leads from the pits into those other areas which will then of course be mined.

With respect to the categorization of the reserves as "probable", I would draw to your attention that the standards for "proven" ore is that it be developed on four sides. This is obviously not the case here and no reputable engineer would rate the reserves in a category higher than we have done. In our opinion, there is no question that the deposit is sufficiently well proven to warrant the necessary expenditures for placing it into production.

19th March, 1971.

Cash Flow:

We are not in agreement with your suggestion that the profit potential is very close to marginal. We would draw to your attention that the discounted cash flow on page 2 is exactly that. The profit per ton has been estimated at $6.78 and therefore the actual cash received for the 55,350 tons will be of the order of $375,000. The pre-production capital is for the most part made up of advances which will be recovered at the end of the project. It would appear that if our estimates are correct, the company should wind up the productive period with approximately $300,000 in its treasury.

You will have received a copy of our letter of yesterday's date to Cominco, and we assume that you wish us to continue to follow up this situation.

Yours very truly,

CANNON-HICKS ASSOCIATES LTD.

H. BRODIE HICKS, P.ENG.

HBH:mdc.

CANNON-HICKS ASSOCIATES LTD.

D. M. CANNON, P.Eng. (Geological)
H. BRODIE HICKS, P.Eng. (Mining)
M. GUIGUET, Geologist

STE. 713 - 744 WEST HASTINGS STREET, VANCOUVER 1, B.C. TELEPHONE: 685-0181

18th March, 1971.

Mr. W.G. Siddall,
Administrative Asst.,
Cominco Ltd.,
TRAIL, B.C.

Dear Mr. Siddall:

Re: DUSTY MAC MINES LTD.

Further to your letter to me of February 16, 1971, I am pleased to be able to advise that we have completed our Feasibility Study of the above property, and are able to confirm that we will be able to supply material of the grade mentioned in my letter of January 22, namely: 80.4% Silica, 5.9% Alumina, 1.8% Iron, 0.23 ounces per ton gold and 5 ounces per ton silver.

The Directors of the company are anxious to make plans for production at as early a date as possible, hence we would again request your early consideration of a possible contract for delivery of the ore.

In your letter of February 16, you mention that a decision would probably be made within a month or six weeks, and we are therefore hopeful that we may hear from you at an early date.

Our ore reserve estimate is approximately 55,000 tons with good possibilities of adding to this as mining progresses. We are therefore in a position to supply substantial quantities of material and as a minimum would like you to consider the acceptance of 1500 tons per month.

With kind personal regards,

Yours very truly,

CANNON-HICKS ASSOCIATES LTD.

H. BRODIE HICKS, P.ENG.

HBH:mdc.

cc:Dusty Mac Mining Co.

SUITE 700, 1177 WEST HASTINGS STREET, VANCOUVER 1, B.C. (604) 681-1392

KEEVIL MINING GROUP

LEITCH MINES LIMITED

March 3, 1971.

Shulman, Tupper, Jonsson, Laxton,
Page, Shortt & Dickerson,
Barristers & Solicitors,
1710 Board of Trade Tower,
1177 West Hastings St.,
Vancouver 1, B. C.

Attention: Mr. Carl R. Jonsson

Dear Sir:

Re: Dusty Mac Mines Ltd.

The figures we used for reserve tonnage and recoverable value were those as reported in the Cannon Hicks report. We feel in light of the work done by Noranda that the area has been well delineated and the figure of 129,750 tons is quite liberal. A high recovery of 95% of both gold and silver without consideration of either a smelter debit or credit gives a return of approximately $8.70/ton (Au $37.50, Ag $1.80).

Yours very truly,

LEITCH MINES LIMITED

Jules La Prairie

J. P. LaPrairie, P. Eng.

JPL/ged

CANNON-HICKS ASSOCIATES LTD.

D. M. CANNON, P.Eng. (Geological)
H. BRODIE HICKS, P.Eng. (Mining)
M. GUIGUET, Geologist

STE. 713 - 744 WEST HASTINGS STREET, VANCOUVER 1, B.C. TELEPHONE: 685-0181

21st April, 1971.

Mr. C. Jonsson,
Dusty Mac Mines Ltd. (N.P.L.)
1710-1177 W.Hastings St.,
VANCOUVER, B.C.

Dear Carl:

In view of the lack of information from Mr. Siddall of Cominco regarding the Dusty Mac property at Okanagan Falls, I telephoned him yesterday and queried as to amounts and prices his company would be prepared to accept.

As inferred from his previous conversation with Brodie Hicks, Cominco is currently completing a contract for the purchase of enough high grade silica to satisfy their requirements for the next five year period. He is therefore not in a position to take the amount that he had previously mentioned, nor is the price as good as their present contract calls for. He is willing to confirm that they will accept between 300 and 500 tons per month at a price of 5 cents per unit for the contained silica. The penalties and payments for precious metals would be the same as before.

In view of this change, it is unlikely that it would be profitable to mine and ship the pure ore from the Dusty Mac property, so that some further consideration should be given to the possibility of installing a small mill.

Although the figures contained in Brodie Hicks' summary suggests that this would also be possible, my own opinion is that some further work will be required to investigate the problems arising from establishing a cyanide type operation in that district, before we can be completely satisfied. Of probably equal importance is the fact that to construct a mill and get into operation would probably involve the use of all of the funds that Dusty Mac has on hand. I hesitate to recommend this, unless a further underwriting can be arranged.

Yours very truly,

CANNON-HICKS ASSOCIATES LTD.

DMC:mdc.

D.M. CANNON, P.ENG.