MINNOVA Inc.

REDFERN-TULSEQUAH CHIEF

ECONOMIC EVALUATION OF RESERVES
AND POTENTIAL VALUE

825877

Samatosum Division

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Prepared by: J. Purkis
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SUMMARY

The Tulsequah Chief deposit is located 60 Km Northeast of Juneau, Alaska, on the Tulsequah River, 15 Km upstream from its confluence with the Taku River. Redfern Resources Ltd. (40%) has a deal with Cominco (currently 60%) to purchase 100% of the property and is seeking a joint venture partner to earn up to 50.1% ownership and operator status.

A 7.257 million tonne geological reserve grading 1.55% Cu, 1.23% pb, 6.81% Zn, 109 g/t Ag, and 2.74 g/t Au has been predicted by Redfern. My investigations indicate this is optimistic due to using too low a cutoff grade (they used Gross Value of $72/tonne) and too narrow a minimum width for a low cost mining option. It is also felt that the predicted tonnes are too highly based on a few holes and therefore, infill drilling is required to satisfy a more rigid geological reserve definition.

Net Smelter Returns based on feasibility prices of $0.95/lb Cu, $0.30/lb Pb, $0.55/lb Zn, $4.00/oz Ag, $375/oz Au at a 1.15 exchange rate are $Cdn 63/tonne milled. A 20% price increase would increase this to $Cdn 76/tonne milled.

Improvements in NSR may be possible as my estimates are based on Samatosum contracts which are not the best. Also, I may have been unreasonably pessimistic on recoveries to payable concentrates which have been guided by 1950-1957 actual experience.

Operating costs are estimated at a low of $46/tonne milled meaning operating margins in the $20/t milled are expected at feasibility prices. This study concludes that the combination of these factors lead towards a mine of the following statistics:

Rate	- 4000 tpd
Mining Reserve	- 14,600,000 tonnes
Geological Reserve	- approx. 20,000,000 tonnes

Future Investment costs which include exploration and feasibility also, are predicted to be between $125 Million and $180 Million with a best estimate of $156 million.

The deposit does not lend itself to a 4000 tpd rate, but the current mining reserve of 5 million tonnes (my estimate) is too small anyhow; so, it is too early to reach this conclusion. Also, relatively minor improvements in recoveries, smelter terms, feed grades, etc., will lead to an economic deposit at lower rates and smaller reserve.

The main conclusion is that the currently defined reserve must be valued very low. Any deal offered by Minnova must reflect the fact that the break-even reserve will be, at the very least, two times the current one and probably three times the current one; i.e., minimal cash payment and staged exploration to an ownership position is all that can be considered.

Therefore, when one looks at Redfern's preferred deal (Appendix "A"), it is obvious we are in a different world. Any deal which implies a per tonne value to "proven" reserves must be made in the context of certainty of doubling or tripling the reserve. My personal view is that the unfolding picture is not that bright, although, I will defer this conclusion to the exploration group.

If that isn't negative enough, there is a negative environmental legacy that Cominco has smartly transferred to Redfern in the buy-out agreement. I have valued this at up to $7.0 Million over and above the $2.5 Million fund currently created.

Also, the 708,000 tonne old reserve must be considered suspect, if not zero, as some may be caved and/or inaccessible and is probably a prime sourse of 50% of the acid water. One of the mitigation plans will be to seal and flood this area if it is technically feasible.

To sum up, the project is easily killed by a few negative assumptions, yet, I can see a combination of factors unfolding that would lead to an economically viable mine. Subject to exploration's assessments though, I believe we should avoid this one.

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1.0 INTRODUCTION

On May 3, 1991, Ian Pirie and myself reviewed Cominco/Redferns Tulsequah Chief project. Redfern has an exclusive right to purchase Cominco's 60% share and is looking for a joint venture partner to enter a deal whereby they can earn 50.1% and operator status. (A Redfern preferred deal has been offered by Redfern - see Appendix "A").

The following is a report on my findings and initial assessment of the property. My investigation, to this point, is quite superficial and is speculative where there is lack of information. Therefore, if Ian Pirie feels reserve increase potential is attractive, I would be prepared to give it a more thorough examination.

Rather than regurgitate the property description, I have copied Redfern's reports in Appendices "A" and "B". There is nothing terribly wrong with their work other than, as this report shows, choosing prices, costs, etc. that lead to a high return project.

2.0 GEOLOGICAL RESERVES

The geological reserves calculated by Redfern are probably too optimistic in that there is an implied economics at gross values of $65/SDT ($72/DMT) and 6 ft. (1.82 metre) widths. This equates to about a $33/DMT NSR. Given the expected tpd ranges (1500 to 3000 tpd) and need for low mining costs, gross values of $98/DMT ($89/SDT) and 3.0 metre (9.8 ft) are recommended if this classification system is to be pursued. (Personally, I prefer geological reserves at varying NSR along with minimum mining width).

The Redfern reserve is summarized as follows:

TABLE 1 - GEOLOGICAL RESERVES PER REDFERN PROCEDURE

		A/B Lens	H Lens	Old	Total
Tonneage	(t)	2,871,000	3,678,000	708,000	7,257,000
Cu	(%)	1.55	1.59	1.30	1.55
Pb	(%)	1.17	1.28	1.60	1.23
Zn	(%)	6.61	7.01	8.00	6.81
Ag	(g/t)	91	127	99	109
Au	(g/t)	2.3	3.2	2.4	2.7

(Reserve sheets are enclosed in Appendix "B")

There are three notable observations concerning the reserve and geological "picture".

First, much of the reserve is based on only a few holes, and, in particular, Holes 89-21, 90-22, and 90-23. If one tallies the reserve (A/B and H Lens only) in descending tonnes per hole order the following results:

	tonnes	% of Reserve	% of Holes
Best 1 hole	1129178	17.2	4.3
Best 2 holes	1826419	27.9	8.7
Best 3 holes	2471639	37.7	13.0
Best 4 holes	3017813	46.1	17.4
Best 5 holes	3531354	53.9	21.7
↓	↓	↓	↓
All 23 holes	6549878	100.0	100.0

This relationship is worrisome but, at the same time enticing, especially when one considers that four of these five holes are H lens and three of the five have been recently drilled.

Secondly, the structural picture indicates not only the synformal structure in plan view but also one in the north-south axis. The syncline's plunge angle is reducing from the old mine's surface exposure steadily to the deepest elevation drilled. Unless thicknesses increase, this will have negative mining cost implications (i.e. too flat), but, if the "trough" has not been hit with holes 21, 22, and 23, then thicknesses and tonnes might increase. This feature also means that one must be cautious in extrapolating the thickness in holes 21, 22, and 23 as they have a high probability (given the other hole intersections) of being the best, having hit the troughs of both fold axes.

Thirdly, much of the reserve is at depth and it sounds like the most potential is deeper rather than along strike at shallower depths.

The implications of these observations are as follows:

1. Expensive exploration to increase reserves to level necessary to carry this project. Infill is required.

2. Mining situation is curreatly "mediocre" for the mining rates required and may get worse.

3. The next deep drilling program will probably make or break the project. (Statement made in context that shallower potential has been determined).

3.0 MINING RESERVE DETERMINATION

3.1 General Observations

The Redfern premise that these geological reserves translate into "Mining Reserves" is very suspect and is not borne out by industry experience or, from what I was able to determine, past mining experience.

The old mine used shrinkage stopes with a sub-level blasthole method in the pillars. Drawings indicate relatively small, irregular shaped stopes and pillars. I suspect this indicates not only thinness but also that cutoff grades were used that were relatively high in relationship to the mean grade. This is somewhat supported by the fact that mill head grades were above currently estimated geological reserve grade. It also means that zones of higher grade are identifiable and have some spacial extent.

The old mine thicknesses and strike lengths increased with depth from the 6500 ft. to the 5200 ft. elevation (from 600 tons per vert. ft. to >2000 tons per vert. ft.) so the currently estimated values of 3000 tons per vert. ft., although unusual, are supported to some extent by the old mine's trend with depth.

In the last year's mining, ground condition problems occurred in the larger shrinkage stopes. No blasting was occurring at times as the back caved. There is some speculation that the developing stopes have caved since closure and are inaccessible. (This is important to know as 708,000 tonnes are in the old reserve). Therefore, the unsupported "span" was too great and, as the spans increased with depth, caving occurred. There is no indication of bursting, although this should not be discounted.

Therefore, Mining Reserves are a guesstimate until intensive investigations are carried out. At this point, we need some assessment of what percentage of the geological reserves will become mining reserves. The factors affecting this are:

- NSR (i.e., grades/recoveries/prices/exchange/smelter contract)

- Operating Cost (i.e., methods, tpd, materials costs)

3.2 Net Smelter Returns

To determine a Net Smelter Return, I used Samatosum's Dowa (Cu), Cominco (Zn), and Asarco (Pb) contracts modified to reflect better and worse transportation, latest smelter terms (still under negotiation), and a cleaner Zn concentrate. Hg's are guesstimates, As and Sb for Cu concentrate are from old records and guesstimates in the other concentrates.

A gold concentrate contract was guesstimated which gives 95% NSR of 98% of Gross Value, i.e. 93% of Gross Value.

Recoveries and concentrate grades used were the better old results improved slightly:

	Best Old	Used	RedF	Smelter pay
Cu to Cu Conc	78%	79%	92	75
Pb to Pb Conc	65%	70%	93	40
Zn to Zn Conc	71%	76%	90	60
Overall Ag	88%	88%	90	90
Overall Au	77%	80%	90	90

The Prices used were feasibility prices as follows:

			RedF US $	Midland US
Cu	-	$US 0.95/lb	1.21	1.00
Pb	-	$US 0.30/lb	.34	.35
Zn	-	$US 0.55/lb	.61.	.75
Ag	-	$US 4.00/oz	4.13	5.25
Au	-	$US 375/oz	369.	425

Exchange - $Cdn 1.15/$US

These yield the following average NSR's for the geological reserves:

Base Rec.-Feasibility Prices	-	$CDN 63.25/DMT
Base Rec.-Feas. Pr. + 20%	-	$CDN 85.51/DMT
Rec +2.5%-Feas. Pr.	-	$CDN 65.35/DMT
Base Rec.-Redfern Prices	-	$CDN 76.45/DMT

The "Redfern Prices" NSR compares to their estimate of $75.00/DMT verifying the main difference is prices used.

The detail is enclosed in Appendix "C".

As the Mining Reserve will be based on achieving positive operating margins, an NSR for each ore block (hole) was calculated. NSR's at feasibility prices vary from a low of $25/t to a high of $114/t. These results are enclosed in Appendix "D".

3.3 Operating Costs

There is little doubt, given that average NSR is less than $75/t that we will be looking at +1500 tpd mining rates and, from other analyses that I have done, probably +2500 tpd. Also, a "low" cost mining method must be feasible. Given the old mine layout and ore zone size, a rate above 1000 tpd would be pushing it, but, given the current view, rates above 2000 tpd are possible. Given the stage of this review, and the assumption that further moves would not be made without more in-depth review, I have assumed a mining cost range of $25 to $35/DMT and mill rates of 2000 to 3000 tpd so as to determine operating costs. The following table shows the breakdown:

TABLE 2 - OPERATING COST ($Cdn/DMT Milled)

	Low	Medium
Administration	4	5
Mill plus Plant Services	9	11
Mining	25	35
Sub-total	38	51
Power Surcharge	3	5
Camp Surcharge	5	7
Total Op Cost	$46	$63
"Situation"	- 3000tpd - Open stopes - Unconsolidated fill	- 2000tpd - Mech C&F/blasthole - Consolidated fill

Needless to say, this is very cursory and would require detailed review. It gives us a range, though, to look at.

3.4 Mining Reserve Calculation

3.4.1 Evaluation as Medium Tonneage/Medium to Low Cost Operation

The Tulsequah Chief deposit is at a key decision point. As I see it, there are two main ways to go. One option, and this is Redfern's view, is that if one believes the geological reserve is sufficient to go to detailed drilling for mine feasibility analysis, then one essentially is concluding that mineable tonnes and grade are available within the geological reserve to support capital expenditures of +$125 million (see Section 4 for source). It is very easy to back calculate what this means based on operating margins. Table 3 illustrates this calculation.

Table 4 illustrates the hole x hole NSR less Op Cost results (Op Margins) of the A/B and H lens. In the absence of more data, one can hypothesize that each hole equals a stope and therefore, if operating margin is positive, it would be mined and the sum of positives would be the mining reserve. Average operating margin has been estimated by taking a simple average of the positive margins. Dilution is not considered.

Therefore, only in the case of feasibility prices +20% and low cost mining methods (i.e. Op Margin >$30/t and a 6 million tonne Mine Reserve likely), are we at the decision point of abandoning geological reserve extension and concentrating investment on mining reserve definition.

If one sticks with feasibility prices, though, a $20/t operating margin is likely and reserves are currently far too small. Also worth noting is the fact that at $20 operating margins, rates below 3500 tpd are probably too low.

The other decision that can be made is to extend geological reserves. As can be seen in Table 3, @ $20/t Op Margin a 3000 tpd rate and a 15.4 Million mining reserve is required to return $125 Million NPV at a 15% DCF rate. Table 4 shows that this is available at roughly a mining reserve:geological reserve ratio of .75:1 for a low cost mining situation. Therefore, a geological reserve of over 20 million tonnes is required. To achieve the low cost, it should be emphasized that more intercepts of the holes No. 21, 22, 23 type are needed.

15 mt / .75

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TABLE 3 - CALCULATION OF MINING RESERVES SIZE TO SUPPORT VARYING CAPITAL EXPENDITURES

If Operating Margin ($/t) =	20					30					40				
And Operating Rate (tpd) =	1500	2000	2500	3000	3500	1500	2000	2500	3000	3500	1500	2000	2500	3000	3500
Therfore Operating Profit ($MM/yr) =	10.95	14.60	18.25	21.90	25.55	16.43	21.90	27.38	32.85	38.33	21.90	29.20	36.50	43.80	51.10
Then @ 15% DCF Rate															
Years to Generate + $100 MM NPV =	NA	NA	15.5	8.5	6.5	17.5	8.5	5.5	4.5	3.5	8.0	5.0	4.0	3.0	2.5
Mining Reserve Required =	NA	NA	14.14	9.31	8.30	9.58	6.21	5.02	4.93	4.47	4.38	3.65	3.65	3.29	3.19
Years to Generate + $125 MM NPV =	NA	NA	NA	14.0	9.5	NA	14.0	8.0	6.0	5.0	14.0	7.5	5.0	4.0	3.0
Mining Reserve Required =	NA	NA	NA	15.33	12.14	NA	10.22	7.30	6.57	6.39	7.67	5.48	4.56	4.38	3.83
Years to Generate + $150 MM NPV =	NA	NA	NA	NA	15.0	NA	NA	12.5	8.5	6.5	NA	10.5	7.0	5.0	4.0
Mining Reserve Required =	NA	NA	NA	NA	19.16	NA	NA	11.41	9.31	8.30	NA	7.67	6.39	5.48	5.11

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TABLE 4 - TULSEQUAH CHIEF OPERATING MARGIN SUMMARY AND MINING RESERVE ESTIMATE

		OPERATING MARGIN ($Cdn/tonne milled)			
Description	Tonneage	@ Feasibility Prices		@ Feasibility Prices + 20 %	
	(000's t)	@ Low Costs ($NSR/t - $46/t)	@ Med Costs ($NSR/t - $63/t)	@ Low Costs ($NSR/t - $46/t)	@ Med Costs ($NSR/t - $63/t)
A/B Lens					
87-1	111	69	52	104	87
87-5	63	8	(9)	27	10
88-2	193	4	(13)	24	7
88-3	546	1	(16)	25	8
88-4	131	(5)	(22)	8	(9)
88-5	137	(14)	(31)	(2)	(19)
88-7	264	0	(17)	16	(1)
88-8	77	6	(11)	35	18
89-12	95	(15)	(32)	2	(15)
89-15	382	(1)	(18)	16	(1)
89-16	183	37	20	63	46
89-18	348	40	23	69	52
89-20	130	(7)	(24)	6	(11)
X	212	(3)	(20)	13	(4)
sub-total A/B Lens	2872	7 positive of 14	3 positive of 14	13 positive of 14	7 positive of 14
H Lens					
89-13	514	8	(9)	27	10
89-15	96	14	(3)	36	19
89-18	198	(21)	(38)	(13)	(30)
89-19	189	24	7	51	34
89-21	697	24	7	47	30
90-22	1129	43	26	78	61
90-23	645	24	7	47	30
90-24	127	1	(16)	14	(3)
90-25	84	1	(16)	16	(1)
sub-total A/B Lens	3679	8 positive of 9	4 positive of 9	8 positive of 9	6 positive of 9
Total New Reserve	6551	15 positive of 23	7 positive of 23	21 positive of 23	13 positive of 23
Calc. Mining Reserve - (000's tonnes)		5,002	3,302	6,216	4,791
% # of holes with pos. op. margin		65.2%	30.4%	91.3%	56.5%
% Tonneage with pos. op margin		76.4%	50.4%	94.9%	73.1%
Simple Avg Op. Margin of Positives ($/tonne milled)					
A/B Lens		24	32	31	33
H Lens		17	12	40	31
All New Reserve		20	20	34	32

Again, I will emphasize that, if we believe our feasibility prices and the low operating cost of $46/t (at 3000 tpd), a much higher mining rate will be required. This is an iterative process where more and more detail is required to determine the optimum rate, but, I project that the following will be the outcome:

Milling Rate	-	4,000 tpd
Mining Rreserve	-	14,600,000 tonnes
Geological Reserve @ .75:1	-	19,500,000 tonnes
Capital Cost	-	$150,000,000

The current geological reserve is indicating a mining reserve of approximately 5 million tonnes so it is 1/3 of the way there.

3.4.2 Evaluation as Low Tonneage (<1500 tpd) Higher Cost Operation

A quick glance at Table 4 shows that NSR's of over $120/tonne are non-existent. Only one hole is above $100/tonne and there are four holes out of twenty-three representing 1.8 million tonnes above an $80/t NSR. I suspect that one could delineate more tonnes at this NSR cutoff if composited with that in mind.

A most optimistic operating cost at lower rates would be $50/t, so margins of $30/tonne would be the maximum. Also, it is very unlikely that Tulsequah Chief could be brought on stream for under $100 million. Therefore, a $30/t Operating Margin can generate at a 15% DCF rate in perpetuity for the following rates:

	@ $30/t Op Margin $NPV Generated in Perpetuity
500 tpd	**$36.5 million**
750 tpd	**54.8 million**
1000 tpd	**73.0 million**
1250 tpd	**91.3 million**

I think it is safe to conclude from the above that Tulsequah Chief is not a low tonneage, high grade proposition.

4.0 CAPITAL/FUTURE INVESTMENT COSTS

4.1 Exploration/Mining Feasibility

Sections 2 and 3 dictate that the deposit requires two phases to get to a production decision:

Phase 1 - Exploration to delineate a geological reserve of around 20 million tonnes using a 3.0 metre minimum width and at least +$40/t NSR. Infill drilling would be required on some blocks due to spacing being currently too wide.

Phase 2 - Mining Feasibility including mining reserve delineation.

4.1.1 Phase 1 - Exploration

For the purposes of this study, I have assumed the following investigation programs. They are slower than Redfern's as I believe we would want to assess the 1991 data before proceeding to the next year's program.

1991

- site mtce. etc.	$ 150,000
- drift extension/stations - 200 @ $2500/m	500,000
- drilling - 5000 m @ $75/m	375,000
	1,025,000
+ 25%	256,000
1991 Program	$1,281,000

1992

- site mtce. etc.	$ 150,000
- drifts/stations etc. - rehab/station prep.	250,000
- drilling - 15000 m @ $75/m	1,125,000
	$1,525,000
+ 25%	381,000
1992 Program	$1,906,000
TOTAL PHASE 1	$3,187,000

Vastly underestimated.
Will take $4.5m simply to prove up existing 8m tons assuming no u/g development.

4.1.2 Phase 2 - Final Mining Feasibility

The purpose here would be to take the project to the production decision stage. Therefore, the objectives would be to delineate mining reserves, determine metallurgical parameters, conceptual design of infrastructure and facilities, mine planning, obtain concentrate contract terms and pass through the Mine Development Review Process. The Phase 2 process would only begin following satisfactory completion of the 1992 exploration program thereby implying the 20 million tonne geological reserve was found. Phase 2 is projected as follows:

1992

- Pre-feasibility Study	$ 200,000
- Prospectus/Mine Feas. Work Permit	150,000
- Shaft Sinking - 1000 m @ $10000/m (25%)	2,500,000
	2,850,000
+ 25%	713,000
1992 Program	$3,563,000

1993

- Shaft Sinking - 1000 m @ $10000/m (75%)	7,500,000
- U/G Levels/Drill Stations 2000 m @ 2500/m	5,000,000
- Metallurgical Sample and Studies	250,000
- Infrastructure and Facilities Studies	250,000
- Mine Planning Studies	150,000
- Background Environmental/Stage 1 Prep.	350,000
- Detailed Drilling - 20,000 m @ $75	1,500,000
- Camp - 50 person @ 200 days @ $100/man/day	1,000,000
	$16,000,000
+ 25%	4,000,000
1993 Program	$20,000,000

1994

- Stage 1/Permits	$ 250,000
- Final Feasibility Study	250,000
- Site Mtce.	250,000
	750,000
+ 25%	187,000
1994 Program	$ 937,000

4.1.3 Summary Exploration/Mining Feasibility

TABLE 5 - Exploration and Mine Feasibility Cost Summary						
	($ in millions)					
	1991	1992	1993	1994	1995	TOTAL
Phase 1-Exploration	1.3	1.9	-	-	-	3.2
Phase 2-Mine Feasibility	-	3.6	20.0	0.9	-	24.5
TOTAL EXPL. & FEAS.	1.3	5.5	20.0	0.9	-	27.7

The key decision points on which any "deal" must be structured are as follows:

Decision Point 1 - now-to spend 1991 Expl.	- $ 1.3 million
Decision Point 2 - end 1991-to carry out 1992 Expl.	- + 1.9 million
-do pre-feas./prosp.	- + 0.3 million
	2.2 million
Decision Point 3 - ~fall 1992-to do Final Feas.	- +24.2 million
TOTAL	$27.7 million

This gets to the decision to go ahead with the production decision although, one would not get a yes decision at Point 3 unless production was quite certain.

4.2 Capital Cost

The shaft and underground development carried out as part of the final feasibility study would be designed with future mining use as a key factor. Even then, this mine will not be a low cost capital situation as the location and orebody geometry are not ideal.

The following estimates are largely without basis as I have not visited the site nor have I developed a mine plan to justify the development costs.

4.2.1 Mine Development

- 2nd Shaft	$10.0
- Levels//Raises etc. pre-prod'n	25.0
- Equipment/Plant Machinery	15.0
	$50.0

4.2.2 Infrastructure and Facilities

- Site Prep. (roads,pads,sewage,water,etc.	$ 2.0
- Power	4.0
- Offices	1.0
- Shops etc.	4.0
- Mill	60.0
- Tailings	2.0
- Loadout/Barge Trans shipment	5.0
	$78.0

4.2.3 Capital Cost Summary

TABLE 6 - Capital Cost Summary
($ in Millions)

	1991	1992	1993	1994	1995	TOTAL
Mine Development	-	-	-	25.0	25.0	50.0
Infra Structure & Facilities	-	-	-	25.0	53.0	78.0
TOTAL CAPITAL EXPENDITURES	-	-	-	50.0	78.0	$128.0

Production is expected approximately in Nov/Dec. 1995.

4.3 Summary of Future Investment Costs

The costs presented in Sections 4.1 and 4.2 are very much "ballpark" estimates to get into the range to expect. There may be substantial savings that are available or cost surprises that are not readily observable at this stage.

The location near tidewater offers many conceptual pluses, but these must be approached with caution due to the need to deal with two federal and two state/provincial governments. There is also an emotional/spiritual public attitude towards the Pacific coastal environment that may negate the advantages.

Therefore, at this stage, the investment cost picture should be viewed as follows:

	($ in Millions)		
	Lowest Imaginable	Best Guess	Top End
Expl/Feasibility	25	28	30
Capital Cost	100	128	150
TOTAL INVESTMENT	125	156	180

5.0 ENVIRONMENTAL

5.1 Old Mine Workings

Before any commitment to this project can be made, an assessment of how much liability is being undertaken concerning the responsibility to clean up past mistakes and negate future acid leaching from the old underground must be made.

I am not expert in this area, but, my understanding is that current owners are liable and purchasers are responsible for due diligence investigations to assess contamination and clean up requirements. If we did not oblige Cominco to deliver to us a "cleaned up" site then we have assumed all liabilities that may surface.

Redfern's agreement with Cominco lets Cominco off the hook on anything above $2.5 million. Although this may seem a lot in relation to surface cleanup, I cannot imagine how one is going to stop the current plus 200 m^3/hr of pH 3.0 to 4.5 metal rich leachate currently emanating from the old workings.

I can see sealing to reduce oxygen entrance but given the re-access limitations to the old workings, I doubt they can be refilled. Given the high hydraulic head, I doubt water sealing will be technically feasible so one must assume a very long term acid generation situation is going to occur.

Mitigation would then be one of reducing contaminated water and, given the major source of this is between the 5200 and 5400 levels, possibly not as threatening as one might first envisage.

The attempt to flood 5200 to 5400 elevation though, would sterilize the 708,000 tonne old reserve and require a grouted sill between 5200 and the "new mine" workings.

There is a high probability that this is an "in-perpetuity" situation so provision for water treatment must be included. I would recommend a $2.0 million capital cost and a $250,000/yr in perpetuity cost:

$$\text{i.e., } \$2.0 + \frac{\$0.25}{.05} = \$7.0 \text{ million}$$

↑ real rate of return

5.2 New Mine Environmental

As the new mine would be below water table, acid rock drainage from the workings is not a concern. Any excess mine waste would have to be buried as it is potentially acid generating.

Tailings would have to be water covered and, given the terrain, a suitable site might be difficult to locate. Most tailings would be used as backfill.

The Taku river has a significant salmon run so one can expect a very tough environmental permitting phase with large well funded groups opposing the project on principle. Although not insurmountable, it will be a cost and time factor.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 I can see why Cominco is not investing any more into this project. In the presence of capital limitations and better projects, this one is easily discarded.

The environmental legacy, which is Cominco's, is high and when one adds this to their expected cash payment from Redfern, I suspect the NPV is higher than this project can deliver unless reserves are dramatically increased.

6.2 I have not developed a cash flow model as this project is so far from a positive net present value based on the current reserve that it is not necessary.

I have used this project, though, as an example to show the important relationships between operating margin and minimum reserves/present value of cash flow stream and how these can be used by the exploration group to value deposits.

6.3 I am going to leave the final decision to the exploration group as it is their assessment of the reserve potential and the lengths they have to go to prove it that will decide the next step.

I have concluded that:

- A 20 million tonne geological reserve @ $63/t NSR will probably make a 4000 tpd 10 year mine. (See conclusion 6.5 also).

6.4 Metal prices are a key element of the conclusion. By using the feasibility prices we can see why few projects will make the grade even at relatively high grades. By using the feasibility prices, there is no doubt we will be low cost producers per our strategy.

6.5 The NSR:Gross Value of this analysis is 0.32:1. This is very low reflecting poor smelter terms (Samatosum), location (high transport), and also, possibly overly pessimistic recoveries. These areas could be re-assessed if we think it would help. If one took an optimistic outlook here, the average NSR might reach $70 so margins would be $27 as against $20 (assumes low cost mining). To generate $125 million present value at 2500 tpd, one needs about a 9 million tonne mining reserve (approximately 12 million tonne geological reserve).

The non-linearity of these relationships illustrates how quickly the picture can change.

6.6 As per 6.3, I have left it up to exploration to make the decision. If they still wish to pursue it, I recommend the following:

- Site visit by myself + geotechnical consultant.
- Assessment of past miners (H. Giegerich?).
- Pass concentrate grades through NSC and get better assessment of NSR's.
- Meet with MDRP personnel (N. Ringstad, L. Cox, J. Dick, D. Parsons).
- Conceptual Mine Development Plan prepared.

The above would cost in order of $10,000.

APPENDIX "A"

REDFERN PROPOSALS AND EVALUATION

REDFERN RESOURCES LTD.
Tulsequah Chief Property
Joint Venture Invitation

Redfern Resources Ltd. expects that it will shortly hold a 100% interest in the Tulsequah Chief Property, the Big Bull Property and certain surrounding properties. Subject to this, Redfern proposes to invite a major mining company to participate with Redfern in the exploration and development of these properties. Redfern believes its proposed terms offer far greater value than has been the case in several comparable transactions recently reviewed in the press, such as:

The Louvicourt Project:	Cominco/Teck's acquisition of an interest in Aur Resources and Noranda's acquisition of an interest in Societe Miniere Louvem.
The Eskay Creek Project:	Corona's acquisition of an interest in Prime Resources Group Inc. and Stikine Resources Ltd.
The Mount Milligan Project:	Placer Dome's acquisition of B.P. Canada and Continental Gold Ltd. interests.
The Hansen Lake Project:	Billiton Resources Canada's acquisition of Trimin Resources interests.

Redfern would be willing to allow a new participant to acquire a 50.1% undivided interest in the subject properties for cash and expenditures as follows:

1. A cash payment of $15,000,000 upon the execution of the participation agreement. (This represents a cost of approximately $3.75 per ton for a 50.1% interest in the geological reserves already identified on the properties.)

2. An indemnification to Cominco Ltd. against any liability for environmental protection, pollution clean up and reclamation costs to the extent these exceed $2,500,000 (Redfern will deposit $2,500,000 of the cash payment, above, immediately upon receipt, in a fund to offset the first $2,500,000 of such costs.)

3. Work programs to include:

   (a) before December 31, 1992, completion of:

      (i) deep drilling to identify extensions to depth of known mineral zones on the property, to be not less than 5,000 metres of drilling;

      (ii) infill drilling in the known mineral lenses sufficient to upgrade the geological reserves to the proven and probable categories;

(b) before March 31, 1993, a commitment on the sinking of a shaft as may be necessary to upgrade reserves to the proven category;

(c) before December 31, 1993, completion of all required Environmental Impact studies related to the properties;

(d) before December 31, 1995 (or sooner, if possible), completetion of a positive bankable feasibility study for production from the properties;

(e) before March 31, 1996 (or sooner, if possible), a decision to place the properties into production, provided that this decision may be deferred to March 31, 1997 for a cash payment of $2,000,000 made before March 31, 1996. In conjunction with the production decision, the participant would be obliged to arrange all required financing for the implementation of the production decision on a project finance basis (for which the properties could be pledged).

The 50.1 % interest would not vest unless all of the foregoing steps were completed.

The relationship between the participant and Redfern would be governed by a comprehensive joint venture agreement, which would provide for rights of first refusal on any sale of an interest in the property, rights to take minerals in kind, and other such matters.

The participant would have conduct of all programs, in consultation with Redfern, from the date of the participation agreement and the participant would be the initial Operator in the joint venture.

In addition to the foregoing, Redfern would give consideration to private placements of Redfern shares to the participant (of up to 2,000,000 shares at $10.00 per share), on terms which would include:

1. certain standstill commitments (with corresponding anti-dilution provisions); and

2. voting trust obligations;

binding until the properties commence commercial production.

The terms outlined above are designed, inter alia,

(a) to realize some immediate value for Redfern in recognition of the advanced state of the properties while providing an excellent opportunity to the participant at a relatively low cost;

(b) to see the properties develop and reach commercial production within an acceptable but reasonable time horizon;

(c) to ensure that, if the participant does not complete the required programs, the properties will remain unencumbered.

TULSEQUAH CHIEF
JOINT VENTURE INVITATION

Why Tulsequah Chief?

The opportunity at hand is an excellent entry level position (50.1% interest in the geological reserves plus operatorship) for one of North America's best new massive sulphide deposits.

- 8.0 million tons (grading 1.55% Cu, 1.23% Pb, 6.8% Zn, 0.08 oz/t Au, 3.19 oz/t Ag) of high grade ore value at $200.00/ton (current metal producer price March 91).

- no major infustructure, access, operating, environmental or permit application concerns are foreseen. Government agencies want to see this deposit developed as a producing mine.

Why $15 million?

Rationale

- at approximately $3.75/ton (for 50.1% of 8.0 million tons) exploration finding costs are very inexpensive by any standard.

- at $15 million, this play represents a good investment based on recent precedents such as Hansen Lake, Louvicourt, Mt. Milligan and Eskay Creek exploration projects. (See Below)

- Redfern is prepared to trade off a lower purchase price for 50.1% of the geological reserves provided the new J/V partner will explore (and infill drill) in an expedious manner. It is Redfern's intention to prove up the property's true potential so the mine can be expediously brought into production thereby benefiting from the increase in base metal prices forecast for the mid 1990's.

- cost vs upside potential
  $3.75 : $60 pre-tax

- Tulsequah ore has a potential pre-tax value of approximately $60-100/ton.

Recent Precedents:

The Louvicourt Project; Quebec: Cominco/Teck's acquisition of a 21% interest in Aur Resources and Noranda's acquisition of an interest in Societe Miniere Louvem.

Cominco/Teck purchased 10.53% and 10.67% respectively of Aur Resources via share purchase. $40.0 million for 21% interest in 20.8 million tons (3% cut off) grading 5.38% Cu, 2.28% Zn, 0.04 oz/ton Au, 0.96 oz/ton Ag.

The Eskay Creek Project, B.C.: Corona's acquisition of a 45.5% interest in Prime Resources Group Inc. and a 45% interest in Stikine Resource and Placer Dome's acquisition of a 45.3% interest. (Purchase price figures not public)

The Mount Milligan Project; B.C.: Placer Dome's acquisition of a 100% interest from B.P. Canada and Continental Gold Ltd. $260 million.

The Hansen Lake Project; Sask.: Billiton Resources Canada's acquisition of Trimin's Resources Ltd's 32.9% interest. $17.5 million for 32.9% interest in 10.8 million tons grading 0.95% Cu, 5.76% Zn, 0.42% Pb, 0.015 oz/t Au and 0.73 oz/t Ag.

Transportation Costs:

- with the proximity to the ocean (Juneau's deep ocean going port) and deep water barging capabilities (Taku Inlet) transportation costs will be low.

- a haul road from the mine along Taku Inlet a distance of 25-30 miles can be engineered and built cheaply.

Smelter Flexibility:

- with the proximity to the ocean a large number of Pacific Rim smelters could be accessed for Tulsequah's concentrate. Better smelter rates may be achievable offshore.

- Based on lower trans-ocean shipping cost (versus rail to Trail) overseas smelters would result in higher profitablities for the project.

- a large Japanese company has already approached Redfern offering favourable interest rates on mine capital costs if the concentrate from Tulsequah could be dedicated to them throughout the life of the project. These advantages could be pursued by a new participant.

Miscellaneous Risk:

- Minimal

- The Tulsequah deposit is polymetallic and therefore the project economics are not as vulnerable to dramatic changes in the price of the single metal.

- The Governments process for various feasibility studies and environmental impact assessments required is clearly defined.

- The B.C. and Alaskan governments have recently signed an Economic Development Agreement.

- There is no litigation current or pending against the property.

Why Tulsequah Chief?

Minimal Risk from any criteria:

Financial Risk:

- Minimal.

- at 9.0 million tons (at today's metal prices) a net present value analysis for Redfern's 40% share of the J.V. indicates considerable financial feasibility.
  (Payback = 2.5 years IRR = 26.08%) reference Mine Start document - 3000 ton/day case.

- as discussed, compared to other exploration projects a $15 million investment for 50.1% and operatorship of an 8.0 million ton polymetallic ore body is cheap - finding cost equal $3.75/ton for geologic reserves.

- if for some reason the ore body does not prove up the entire $15.0 million it becomes a tax write off resulting in a net risk of $7.5 million.

- Project has benefitted financially from a sunk cost aspect - ie: access through existing Cominco underground workings have reduced costs for exploration.

Geologic Risk:

- Minimal.

- VMS deposits are compact, high grade, simple and continuous in form. Reserves can be accurately determined based on wider spacing units.

- considerable reserve upside: open on strike, up and down.

- industry experience indicates once in production exploration reserves can be grossed up by a factor of five (5). (Trout Lake experience - massive sulphides, particularily multi-lens deposits will yeild between 3 and 8 times the pre-production reserve before exhaustion).

- in a recent study which examined the exploration capabilities of junior companies versus major companies it was indicated: that to locate and bring an exploration prospect to a production decision expenditures of $100,000,000 and a time frame of 8 to 10 years are reasonable. Using this standard the Tulsequah Prospect appears exemplary.

Geological Potential:

- 10,000,000 to 20,000,000 tons is realistic.

Big Bull 1 - Several million tons?

Other - Rhyolite Domes on properties look very interested.

Environmental Risk:

- All sulphide deposits have acid generating potential, by the very nature of sulphide material in the rock. Through identification of the source rock and proper handling, mitigation measures can be accomplished for minimal cost.

- Trans-border stream - potential fisheries consideration; minimal wildlife disruption.

- Will require full environmental impact assessment with attention paid to site conditions when locating tailings ponds, ect.

Permitting Risk:

- Redfern's management has met with Senior Officials of the Ministry of the Environment and they appear keen to see the project developed given appropriate environmental safeguards.

- Redfern's management has met with the Chairman of the Mine Site Development Committee; an expression of interest to help with the process as well as a commitment for assistance in working issues with the Alaskan authorities was offered.

Access and Infustructure Risk:

- The Alaskan Government officials and Redfern have met on several occasions to discuss road access to the property along the Taku Inlet. Such a road would provide Redfern with direct access to a deep water loading facility on the Taku Inlet from which point concentrates could be shipped to any smelters on the Pacific Rim. Coincidentally the road access would dove-tail with the Alaskan plan for any inland road to Atlin.

- Workers could be housed in Atlin or Juneau.

- Hydro electric capabilities exist in this area. An old dam is located at the abandoned mill site (Polaris-Taku) across the river, from this facility electricity could be generated.

REDFERN RESOURCES LTD.
The Tulsequah Chief Massive Sulphide Deposit

RFR @$5¼ — TSE
Rating: Buy
Risk: Speculative

Cash Flow Per Share/ Earnings Per Share			P/CF/ P/E	Ind.		BV/NAV	Price/BV	Shares	Est.	52-Wk.
12/89A	12/90E	12/91E	1990E	Div.	Yield	Share	Price/NAV	O/S(mm)	Float(mm)	Range
$0.00	$(0.04)	$(0.05)	NA			$0.49	10.7x	10.1	5.0	$8⅞-$3.10
$0.00	$(0.04)	$(0.05)	NA	Nil	0%	$2.00	2.6x			

RECOMMENDATION

We recommend the shares of Redfern Resources as a speculative buy to $10 per share for exposure to n exciting developing base metal deposit.

INVESTMENT HIGHLIGHTS

- Dramatically increased geological reserve potential at Tulsequah Chief base metal deposit, (40% Redfern, 60% Cominco). Now highly likely that the deposit will become a mine.
- Base case throughput would produce 61 Mlb. zinc, 7.4 Mlb copper, 17 Mlb lead, 2.0 Moz silver, and 47,000 oz gold, and generate earnings of $1.62 per share and cash flow of $2.76 per share for Redfern in 1993.
- Based on discounted cash flow analysis, 3,000 and 4,000 tonne per day operations are conservatively valued at $7½ and $13 per Redfern share, respectively.
- Cominco, as operator, lends solid technical management to the exploration and development of the deposit.

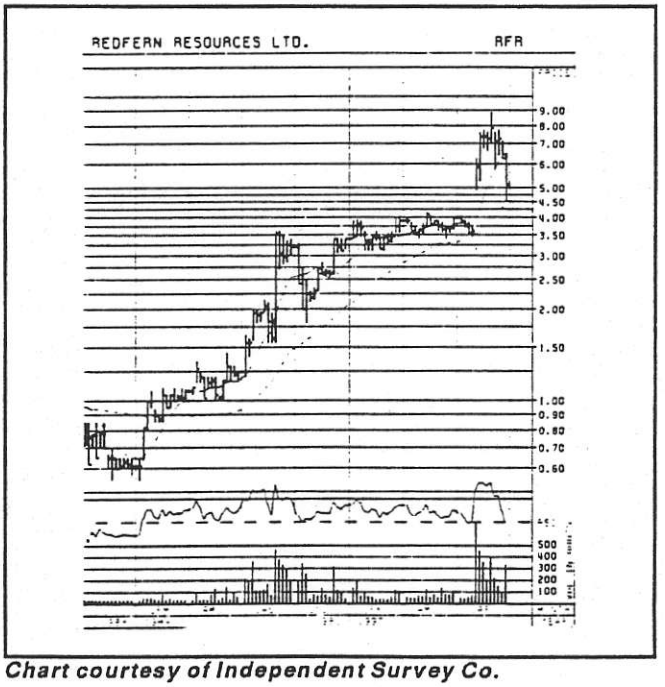


Chart courtesy of Independent Survey Co.

- Cominco will likely "fast-track" deposit development to ensure low-cost domestic feed for Trail metallurgical facility.
- Redfern's management team is highly competent, and capable of maximizing the value of Tulsequah Chief to shareholders.

ERIC ZAUNSCHERB, CFA
(416) 369-7534

OCTOBER 9, 1990

THE COMPANY

Redfern Resources is a Vancouver-based junior exploration company formed in 1979. Since that time, it has been actively accessing and exploring mineral properties throughout North America. The company's management team has excellent experience in the exploration of diverse geological environments and settings. President John A. Greig (M.Sc., P.Geol.), has been involved with the management of publicly traded exploration companies since 1969. J. Michael Kenyon (M.Sc., P.Geol.), Secretary of the company, has over 12 years experience with publicly traded exploration companies.

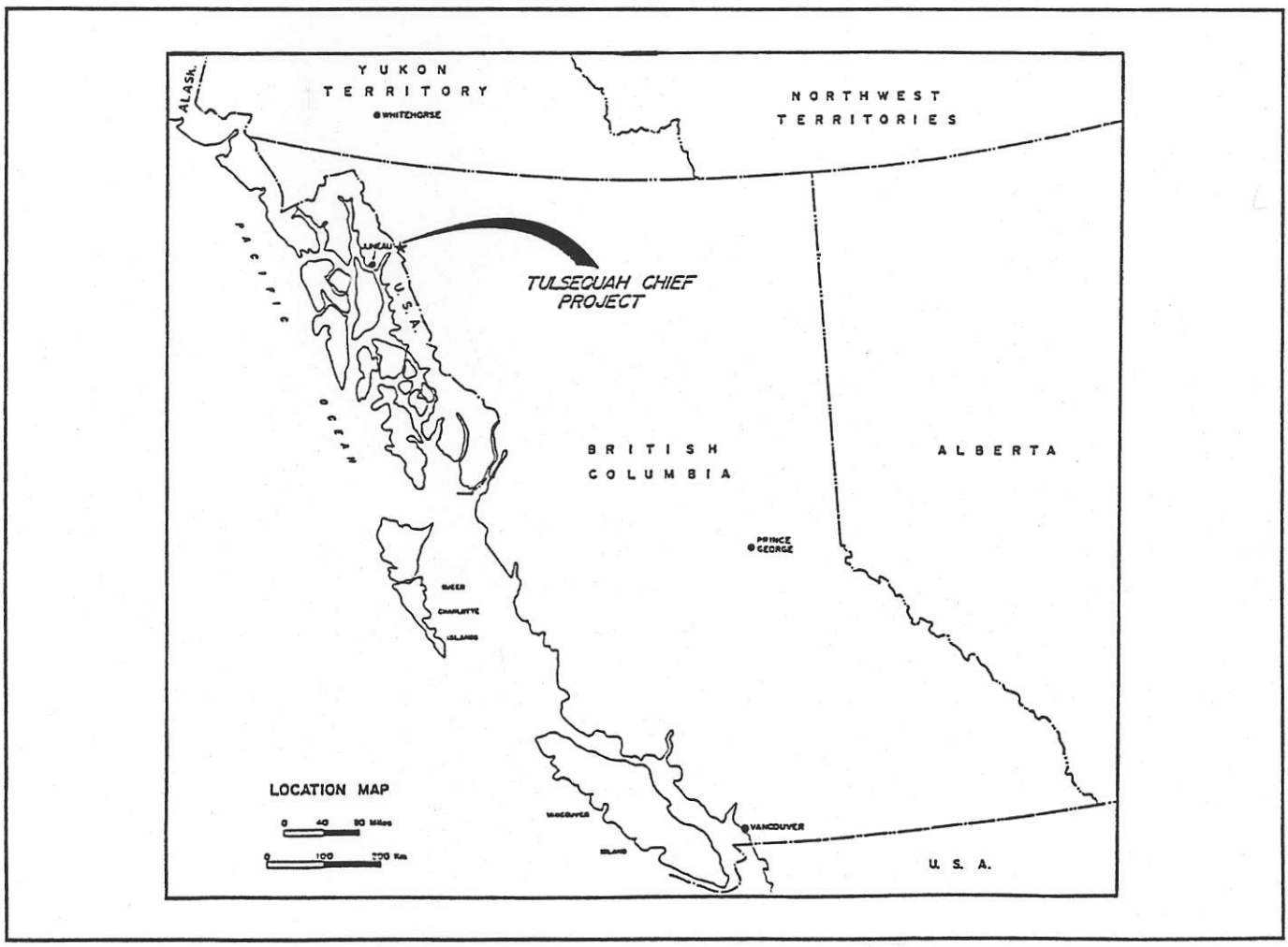
The largest shareholder of the company is Comaplex Resources International, a Calgary- based company with interests in cash- flow- generating oil and gas properties. It is our understanding that Comaplex views its share block as a long-term investment. Teck Corp., affiliated with Cominco, has taken an interest in Redfern, last purchasing 150,000 flow-through shares at $3.45 per share earlier this year, increasing its position to a total of approximately 6% of Redfern's outstanding capital. Teck has expressed an interest in participating in further financing for Redfern.

Redfern Resources is currently debt-free and has an unallocated working capital position of $1.5 million. The company's shares are listed on the Toronto Stock Exchange.

THE TULSEQUAH CHIEF DEPOSIT

Location. The deposit is located in northwestern British Columbia, 100 kilometres south of Atlin, B.C., and 60 kilometres northeast of Juneau, Alaska (see Exhibit 2). It is situated on the east side of the Tulsequah River, 120 metres above sea level. This river feeds into the Taku River 15 kilometres downstream from the mine. The Taku Inlet provides low-cost barge access to the tidewater port at Juneau. A nearby 1,200-metre gravel airstrip and local helicopter services provide direct

Exhibit 2
Tulsequah Chief Location Map



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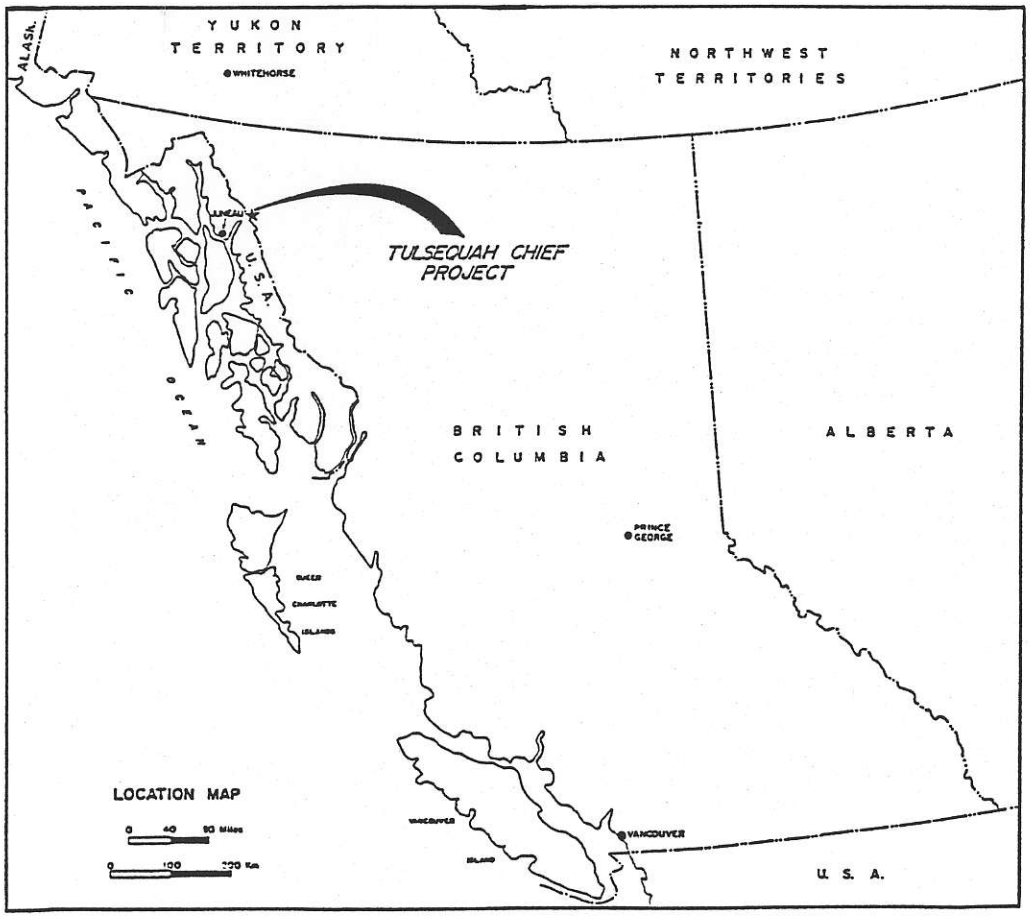


access to the property. Future costs may be further reduced, (and profitability enhanced) as the town of Juneau and state of Alaska are currently investigating the construction a road-link via the Taku River valley.

Ownership. The Tulsequah Chief massive sulphide deposit is being explored under a joint venture owned 60% by Cominco Ltd. and 40% by Redfern. Redfern optioned the property from Cominco in June 1987 and earned its interest by mid-1989 through the expenditure of $3 million in exploration funds. The joint venture is operated by Cominco.

Geology and History. Tulsequah Chief has been interpreted as a volcanogenic massive sulphide deposit, specifically of the Kuroko variety. Simply put, this suggests that the deposit was formed at an eruptive centre on the bottom of a shallow sea. These polymetallic deposits are typically simple in form, thick and continuous, allowing low-cost bulk mining methods to be applied. In this case, the ore is found within a rhyolitic unit in close proximity to a dacitic intrusive. The mineralized horizons, or lenses, generally plunge to the north at 70o to 75o. Mining at this angle minimizes problems with caving, resulting in minimal ore dilution and, consequently, greater profitability. Metallic mineralization consists of pyrite (iron sulphide), chalcopyrite (copper sulphide), galena (lead sulphide), sphalerite (zinc sulphide), and tetrahedrite — (copper-iron sulphide, sometimes containing silver), with some gold.

From 1951 to 1957, Cominco profitably operated the Tulsequah Chief mine. During this time, 574,000 tonnes of ore were mined grading an average 1.8% copper, 1.3% lead, 6.7% zinc, 3.42 g/t (0.10 oz/ton) gold, and 108 g/t (3.16 oz/ton) silver. Metallurgical recoveries were very good, with copper recoveries of 85%, lead 85.5%, zinc 91%, gold 77%, and silver 90%. Ore was accessed via four adits and mined using shrinkage stoping of the individual ore lenses. Ore was trncked from the mine to the Polaris Taku mill approximately 8 kilometres to the south. Three separate concentrates were produced (copper, lead, and zinc), trucked to a site further south, and barged to Juneau for shipment to the Trail smelter. (A similar process may be envisaged for future operations, with a modern mill nearby.)

The mine was shut down in 1957 as base metal prices dropped, leaving approximately 712,000 tonnes of ore grading 1.3% copper, 1.6% lead, 8.0% zinc, 2.4 g/t (0.07 oz/ton) gold, and 99.3 g/t (2.9 oz/ton) silver in reserve. In 1987, geologists applied the relatively new Kuroko mineralization model to the Tulsequah Chief deposit and concluded that considerable potential remained to increase reserves. Through subsequent exploration, the joint venture partners expanded geological reserves to 2.2 million tonnes in 1988 and to 5.3 million tonnes in 1989, grading an average 1.6% copper, 1.31% lead, 7.02% zinc, 2.74 g/t (0.08 oz/ton) gold, and 101 g/t (2.94 oz/toh) silver. Exploration revealed that grades and thicknesses were increasing with depth.

Current Exploration. The current exploration programme began with the extension of the 5400-level drift by 180 metres to provide drill stations for underground drilling. The first hole of the programme, No. 22, was designed to test for the extension of the main AB lens 200 metres down-dip from the last drill hole of the 1989 programme. On July 30, it was announced that the hole had intersected mineralization 150 metres above target, suggesting the discovery of an entirely new lens, now named the H lens. The assays, released August 9, indicated that No. 22 had intersected 50 metres (an estimated 40 metres true thickness) grading 2.92% copper, 1.58% lead, 9.09% zinc, 3.84 g/t (0.112 oz/ton) gold, and 170 g/t (4.96 oz/ton) silver at a depth of 544 metres. The H lens at this point is thicker and of higher grade than any discovered at Tulsequah Chief to date.

Hole No. 23 (assays announced September 12) has confirmed the existence of the H lens with a 27-metre intersection (estimated 19-metre true thickness) at a depth of 635 metres, grading 1.19% copper, 1.15% lead, 5.43% zinc, 3.60 g/t (0.105 oz/ton) gold, and 142 g/t (4.16 oz/ton) silver. This is the second-best intersection drilled on the Tulsequah property.

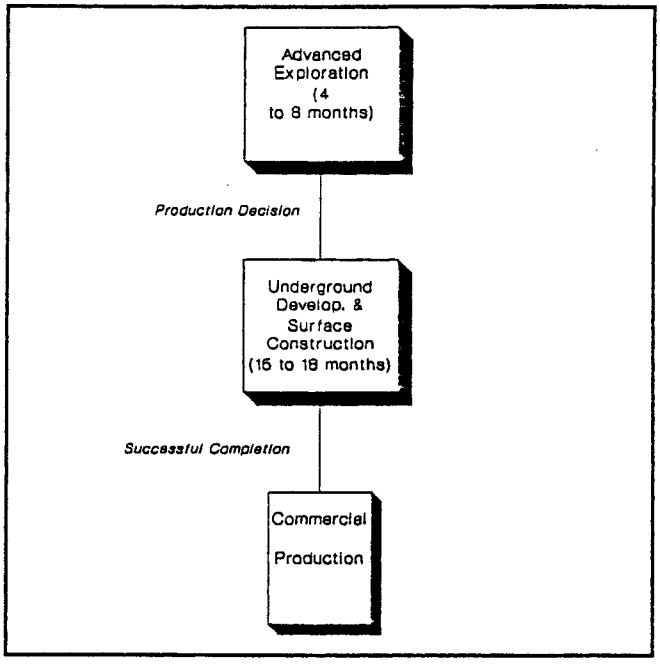
On September 27, Redfern announced that hole No. 24 had intersected sulphide mineralization (either the H or AB lens) 100 metres west of hole No. 23 but that, based on visual inspection, the intersection was thin (approximately 5 metres) and of moderate grade. This diminished intersection apparently was due to a disruption of mineralization by the nearby dacite intrusive, a generally localized effect. Alteration associated with mineralization was very intense, however, suggesting significant mineralization nearby.

Further exploration, with two drills currently on-site, is designed to test for the potential limits of the H lens and to increase the level of confidence with regard to previously known mineralization. We remain very encouraged by recent work, and will continue to follow the programme with interest.

THE TRANSITION FROM DEPOSIT TO MINE

The results returned from the current ongoing exploration programme lead us to believe that the Tulsequah Chief deposit will be developed as a mine. Exhibit 3 outlines the critical path of development together with our estimates of time. In our opinion, Cominco's desire to assure domestic feed for its Trail facility will lead it to "fast-track" the development of the Tulsequah Chief deposit.

Exhibit 3
Development Path



The advanced exploration of the deposit is expected to include additional underground drilling to establish a mineable reserve (as opposed to a less rigorous geological reserve). This phase may take from four to eight months. With sufficient confidence established, the partners may then go directly to a decision to sink a production shaft and develop the lower reaches of the AB and H lenses. Underground development and construction of surface facilities would take 15 to 18 months and involve capital expenditures of approximately $140 million to $170 million for 3,000-tonne- per-day and 4,000-tonne-per- day operations, respectively. Redfern's 40% share of expenditures could be readily financed through project debt, but a more buoyant equity market may allow for partial equity financing without undue shareholder dilution.

Commercial production may be attainable by the fourth quarter of 1992. A combination of mining methods — namely shrinkage and blasthole stoping — would be employed, depending upon the widths of specific stopes. Ore would be hoisted to surface via a newly constructed shaft and trucked to a new mill site in the vicinity. Mill parameters similar to those encountered in the 1950s may conservatively be assumed. Finally, concentrates could be barged to Juneau for shipment to smelters, as in the 1950s.

VALUATION

Table 1 presents the metal price assumptions made for the valuation of the Tulsequah Chief deposit. It has further been assumed that the project is entirely debt-financed, at 15% per annum. It is likely that actual financing will be by a combination of debt and equity, but the negative effect of share dilution on the cash flow stream will be somewhat offset by the reduction in interest expense.

Table 1
Summary of Parameters

Cdn$/US$	1.22
Interest rate	15%
Discount rate	12%
Reserve (Mt)	15

	Reserve Grade	Recovery Rate (%)	Price	
Zinc	7.00%	87	0.75	US$/lb
Lead	1.30%	85	0.35	US$/lb
Copper	1.60%	85	1.00	US$/lb
Silver	100g/t	90	5.25	US$/oz
Gold	2.75g/t	77	425	US$/oz
Tonnage rate (tpd)		3000	4000	
Operating cost (Cdn$/t)		48	45	
Capital cost (Cdn$M)		140	170	

Prior to this year's programme, the joint venture partners had outlined a geological reserve of 5.28 million tonnes with a grade of 1.6% copper, 1.31% lead, 7.02% zinc, 2.74 g/t (0.08 oz/ton) gold, and 101 g/t (2.94 oz/ton) silver. On a very preliminary basis, we calculate that the two recently drilled intersections potentially add six to ten million tonnes of mineralization, for a total geological reserve of 11 to 15 million tonnes. This is based upon the extension of the orebody to depth at a constant width of 300 metres, 350 metres beyond drill hole No. 21. The lower tonnage figure is based upon an average width of 16 metres (the

true width of the intersection in hole No. 21). The upper tonnage figure is based upon the intersected true widths. The historical tonnage factor of 3.2 tonnes per cubic metre was used for all calculations. None of these preliminary estimates is sufficiently rigorous from an engineering perspective, but should provide guidelines for investment purposes.

A reserve tonnage greater than 10 million tonnes is sufficient to envisage a 3,000-tonne-per-day operation. Additional reserves will allow the partners to achieve further throughput to a maximum of 4,000 tonnes per day, limited by working face availability and tailings capacity. Significant additional reserve potential exists in the down-dip extensions of the AB and H lens and the updip extension of the G lens, as well as in other targets. Higher throughput rates will result in the achievement of economies of scale.

Table 2 presents the results of the valuation. In the base case, 3,000 tonnes per day, annual production would amount to 61 Mlb. zinc, 7.4 Mlb copper, 17 Mlb lead, 2.0 Moz silver, and 47,000 oz gold. Assuming the metal prices in Table 1, this would generate earnings of $1.62 per share and cash flow of $2.76 per share for Redfern in 1993. Net cash flow discounted at 12 per annum is equal to $7½ per share. These values would increase as indicated in Table 2 for the 4,000-tonne-per-day operation.

Table 2
Summary of Results

Tonnage rate (tpd)	3000	4000
Discounted cash flow (Cdn$M)	76.23	129.97
DCF per share	7.55	12.87
Price to DCF	0.70	0.41
Internal rate of return	45.52%	51.22%

We believe that multiples of 4.0, 2.5, and 1.0 should be applied to earnings per share, cash flow per share and discount cash flow per share, respectively, for base-metal projects of this magnitude. If these multiples are applied to the measures indicated for the 3,000-tonne-per-day case in Table 2, Redfern's shares should be valued in the range of $6½ to $7½ per share. If the same multiples are applied to the measures in the 4,000 tonne-per-day case, Redfern's shares should be valued in the range of $8 to $13 per share. Clearly, the shares are trading well below the minimum value in the range for a 3,000-tonne-per-day operation. We believe that this is largely the result of recent exploration results taken out of geological context.

POSSIBLE ENVIRONMENTAL CONSIDERATIONS

Cominco's operation of the original Tulsequah Chief mine in the 1950s followed the letter of the law of the day with respect to the prevention of environmental degradation. The law, and public sensitivities in particular, have become more rigorous, however, where mining and the environment intersect. In Cominco's case, tailings were dumped directly into the Tulsequah River without regard to the salmon fishing industry downstream. Further, acid mine runoff has leaked directly into the river ever since operations began. These issues will have to be considered by the partners and regulatory bodies as development of the deposit proceeds.

Cominco has established an extensive water-monitoring system at the Tulsequah Chief site and in the vicinity. Although natural sources generate great quantities of acidic water flow, the mine's runoff is being carefully monitored for its contribution to the environment. Regardless, recent militancy by environmental advocates, particularly where cross-boundary pollution may be an issue, makes the entire environmental issue a risk to be considered.

CONCLUSIONS AND RECOMMENDATION

An important threshold has been reached in the life of the Tulsequah Chief deposit. Current drilling has greatly enhanced the economic feasibility of mining operations at Tulsequah Chief. While considerably more work needs to be done, and certain environmental issues addressed, we believe that Cominco, which desires greater flexibility in smelter-feed sourcing for its Trail smelter, will fast-track advanced exploration and development of the deposit. We consider the shares of Redfern Resources to represent an excellent exposure to potential base-metal production in the mid-1990s. Recent exploration results have been viewed out of geological context, and an extremely unforgiving equity market has oversold the shares of Redfern Resources. We believe the stock offers minimal downside, and recommend purchase, with a short-term target of $10 per share and a medium-term target of $13 per share.

Redfern

REDFERN RESOURCES LTD.

The Tulsequah Chief Massive Sulphide Project, British Columbia

Summary Report
April 2, 1991

Redfern

SUMMARY

Geologically inferred reserves at the Tulsequah Chief increased in 1990 to 8 million tons. The average grade is 1.55% copper, 1.23% lead, 6.81% zinc, 0.08 oz/ton gold and 3.19 oz/ton silver.

A preliminary economic analysis suggests that a mining operation based on a 9,000,000 ton in ground reserve (10,000,000 ton mill through-put) with a production rate of 3,000 tons per day at the above grades and current producer prices would be very profitable.

A $1.5 million underground diamond drilling program is planned for the first phase of work in 1991. A Phase II program of in-fill drilling estimated to cost $2 million will be necessary to allow a more accurate reserve determination prior to commencing underground development. Costs are shared on a 60% Cominco - 40% Redfern basis.

A reserve potential of up to 15 to 20 million tons is reasonable based on the size of the mineral system and other geological considerations.

The Tulsequah Chief operations site is located 35 air miles northeast of Juneau, Alaska in the Tulsequah river valley at an elevation of about 400 feet above sea level. An airstrip located close to the property provides good access.

Redfern

LOCATION AND ACCESS

The Tulsequah Chief property is located in northwestern B.C. on the east side of the Tulsequah River valley at Lat. 58^0 43' Long. 133^0 35', approximately 60 miles south of Atlin, B.C. and 35 air miles northeast of Juneau, Alaska. A 4,000 foot long gravel airstrip capable of handling large aircraft is located near the mine. Concentrates from a mining operation can be transported by barge along the Taku inlet to the deep water port of Juneau, a distance of 42 miles, as was done when the property was in production in the 1950's (see location map), or alternatively a road can be built to the head of the Taku Inlet, a distance of 25 miles, where deep draft ships can load. There are suitable locations for surface facilities including, mill and tailings disposal in the immediate area.

REDFERN-COMINCO JOINT VENTURE

In June 1987, Redfern acquired an option to earn a 40% participating interest in the Tulsequah Chief project through the expenditure of $3 million by December 31, 1990. Redfern completed its earn-in by mid-1989 and the joint venture is continuing to develop the property on a 60% Cominco Ltd. - 40% Redfern basis.

HISTORY

Cominco Ltd. operated the Tulsequah Chief mine through the period 1951 to 1957. The mine closed in 1957 due to low metal prices. Much of the mine revenue derived from its copper content.

Milling facilities were leased at the nearby Polaris-Taku gold mine which abandoned operations in 1950. The mill was retooled and produced at the rate of 500 tons per day. Mill concentrates were barged from the Taku river landing some 6 miles south of the mill site to the deep water port of Juneau, Alaska a distance of 42 miles. Past production from the Tulsequah Chief totalled 633,000 tons grading 1.8% copper, 1.3% lead, 6.7% zinc, 0.1 oz/ton gold, and 3.16 oz/ton silver. When the mine closed, remaining in-place reserves totalled 780,000 tons as detailed under the heading "RESERVES".

The property remained dormant from 1957 until the first drilling in 1987 under the Redfern-Cominco option.

Redfern

GEOLOGY

The Tulsequah Chief mineral deposit is a volcanogenic massive sulphide (VMS) containing zinc, copper, lead, gold and silver. More specifically the deposit belongs to a class of massive sulphides known as Kuroko type which are relatively rich in gold and silver. One particularly favourable aspect of VMS deposits, as compared to other deposit types, is that they display good continuity and reserves can be reliably determined based upon much wider spaced drill patterns. Another favourable aspect is that these deposits are polymetallic and therefore not strongly affected by negative price changes of a single metal.

When the mine was in production in the 1950's, a lack of understanding of the geological controls of VMS deposits hampered the search for ore. Today, VMS deposits are well understood geologically. The Tulsequah Chief ore is now known to be stratigraphically controlled, as opposed to structurally controlled, hence exploration can be focused on the right targets and discovery of new ore is relatively simple.

The Tulsequah Chief mineralization is contained in a particular stratigraphic unit known as the "mineral horizon". The volcanic strata have been tilted so that the mineral horizon, and the ore contained within it, dips generally to the north at 60^0. The ore occurs in two main lenses referred to as the AB and H. Geological reserves in both the AB lens (including the 780,000 tons in place in 1987) and the H lens are approximately 4 million tons each.

Underground drilling in 1990 explored the mineral horizon to a depth of 2,200 feet below the 5400 level, and increased the reserves from 5,800,000 tons to 8,000,000 tons.

Dimensions of the deposit are approximately 1,400 feet in maximum strike length (at the 5400 level), 2,200 feet vertically and an average of 25 feet true thickness. Mineralization is open to depth, upwards and on strike to the each.

The mineral system at the Tulsequah Chief, considering the dimensions of the alteration zone and of the mineral horizon which contains the ore deposits, is one of the largest examples of the Kuroko type and geologists familiar with the property recognize that the potential could be much larger than the reserves indicated to date.

Redfern

A second alteration zone like that associated with the main deposit, and with even better base and precious metal geochemistry, is located to the west of the Tulsequah Chief mineral system. This new system remains relatively unexplored.

RESERVES

At the time the mine closed in 1957 Cominco Ltd. calculated a measured and indicated ore reserve of 780,000 tons grading 1.3% copper, 1.6% lead, 8.0% zinc, 0.07 oz/ton gold and 2.9 oz/ton silver. Reserves have increased dramatically as a result of the 1987 through 1990 drill programs. Current geological reserves including the 780,000 tons are 8,000,000 tons grading 1.55% copper, 1.23% lead, 6.81 zinc, 0.08 oz/ton gold, 3.19 oz/ton silver. This reserve contains 248,000,000 pounds of copper, 196,800,000 pounds of lead, 1,089,600,000 pounds of zinc, 640,000 ozs. of gold and 25,520,000 ozs. of silver.

METALLURGY

When the property was in production average metallurgical recoveries were as follows:

Metal	Recovery
copper	84.4%
lead	85.0%
zinc	87.3%
gold	76.5%
silver	89.9%

These recoveries are remarkably high considering that the mill (Polaris-Taku) used to process the ore was originally designed for a different type of ore (vein type gold ore). It is expected that a mill, specifically designed for the treatment of polymetallic ores will achieve much better recoveries. Recoveries of close to 90% as an average for all metals is a reasonable expectation. Importantly, concentrates are clean and contain no deleterious components that would compromise milling, smelting or cause environmental concern.

Redfern

1991 PROGRAM

A $1.5 million underground deep drilling program is planned for Phase I and will include an extension of the 5400 level drift a further 600 feet to the north where new drill stations can be established for continued deep drilling. An alternative approach for deep drilling involves the use of the Navidrill system which would obviate the need for further drifting and result in lower costs. The deep drilling (approx. 12,000 feet) will test the mineral horizon 1,000 feet down dip from the lowest levels tested to date. A Phase II program of in-fill drilling expected to cost in the order of $2 million will be necessary to allow a more accurate reserve determination.

Upon a successful completion of the above programs, a shaft would be sunk to provide underground access for development drifting and drilling and to provide a platform for drilling to greater depths.

POTENTIAL

Geological reserves increased by 38% from 5,800,000 in 1989 to 8,000,000 tons in 1990 and success in the 1991 deep drilling could again add substantially to geological reserves. Further additions to reserves may be expected on strike to the east as well as within the up-dip portion of the G lens (east part of AB lens).

A potential in the 15-20,000,000 ton range appears realistic based on results to date and current geological understanding of the deposit.

ECONOMICS

Attached is an independent economic analysis for a deposit size of 10 million tons diluted (9 million tons in ground) with a production rate of 3,000 tons per day and capital cost of $130 million. The capital cost is an estimate in as much as it cannot be determined with accuracy until a detailed feasibility study is completed. Calculations are based on best estimates for operating costs, and smelter costs, and on canadian base metal producer prices as of early March 1991. It appears that a reserve as defined above would support a very profitable mining operation.

All figures relate to Redfern's 40% interest only.

Redfern

CONCLUSION

The Tulsequah Chief is the best undeveloped base-precious metal massive sulphide deposit in Western Canada.

Based on the current geological reserves and the obvious potential for additional reserves, the property is likely to realize production. We anticipate that the forthcoming exploration programs will substantially advance the property towards this goal.

Redfern Resources Ltd

CASHFLOW PROJECTIONS (1991-$C 000'S)

with Tulsequah Project at 3 000 s.tons/day

- base case

– all debt financing after 1991
– figures are Redfern's 40% share of JV

CASH FLOW	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
Net Revenue				14 212	28 424	28 424	28 424	28 424	28 424	28 424	28 424	28 424	28 424	270 024
Interest Expense		780	2 487	5 514	5 484	2 132								16 397
Taxes:														
Federal Income						965	5 038	5 235	5 382	5 493	5 576	5 639	7 309	40 637
BC Income						2 382	3 215	3 386	3 515	3 612	3 685	3 739	4 505	28 039
BC Mining					196	2 447	2 928	3 084	3 202	3 290	3 356	3 405	4 219	26 126
Fixed Assets Net			8 800	22 400										31 200
Exploration Exp	4 000	2 400	10 000	8 400	400	400	400	400	400	400	400	400	400	28 400
Resource Property														
Salvage													7 800	7 800
net cash yearly	(4 000)	(3 180)	(21 287)	(22 102)	22 344	20 098	16 844	16 318	15 924	15 629	15 407	15 241	19 791	107 025
net cash cumulative	(4 000)	(7 180)	(28 467)	(50 569)	(28 225)	(8 128)	8 716	25 034	40 958	56 587	71 993	87 234	107 025	
Shares Issued	11 000	11 000	11 000	11 000	11 000	11 000	11 000	11 000	11 000	11 000	11 000	11 000	11 000	
Earnings per share after tax	(.36)	(.29)	(1.94)	(2.01)	2.03	1.83	1.53	1.48	1.45	1.42	1.40	1.39	1.80	

IRR (%)		=	26.08%
npv @	10%	=	32 888
(inflation free rate)	15%	=	16 714
	20%	=	6 929

Effective Tax rate (%)	
Federal	21.41%
BC Income Tax	13.89%
BC Mining Tax	14.03%
	49.33%

Redfern Resources Ltd

CASHFLOW PROJECTIONS ($C 000'S)

with Tulsequah Project at 3 000 s.tons/day

- base case

– all debt financing after 1991
– figures are Redfern's 40% share of JV

CASH FLOW	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
Net Revenue				14 212	28 424	28 424	28 424	28 424	28 424	28 424	28 424	28 424	28 424	270 024
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Earnings per share after tax	(.36)	(.29)	(1.94)	(2.01)	2.03	1.83	1.53	1.48	1.45	1.42	1.40	1.39	1.80	

IRR (%)		= 26.08%	Effective Tax rate (%)		
				Federal	21.41%
npv @	10%	= 32 888		BC Income Tax	13.89%
(inflation free rate)	15%	= 16 714		BC Mining Tax	14.03%
	20%	= 6 929			49.33%

Notes:

assays & prices

metal	grade	mill recovery %	smelter payable %	price $C/lb	price $C/oz
copper	1.550 %	92	75	1.40	
lead	1.250 %	93	40	0.40	
zinc	6.790 %	90	60	0.70	
gold	0.081 oz/ton	90	90		425.00
silver	3.200 oz/ton	90	90		4.75

reserves: 9 million s. tons at above grade
production: 3,000 s.tons/day for 350 days /year
equivalent to about 9.5 years life
dilution: 10% of feed i.e. 3,000 ton/d = 2,700 tons ore & 300 ton waste of zero grade
costs: assumed $130 million for capital, operating at $45/ton
all costs above are in $Canadian 1991 real rates and the discount rates for the net present values are inflation free

Notes for Tulsequah project for MineStart financial analysis, March 1991

assays & prices	metal	grade		mill recovery	smelter payable	price	
				%	%	$C/lb	$C/oz
	copper	1.550	%	92	75	1.40	
	lead	1.250	%	93	40	0.40	
	zinc	6.790	%	90	60	0.70	
	gold	0.081	oz/ton	90	90		425.0
	silver	3.200	oz/ton	90	90		4.75

NSR = $125 cdn
= $168.8.

reserves: 9 million s. tons at above grade

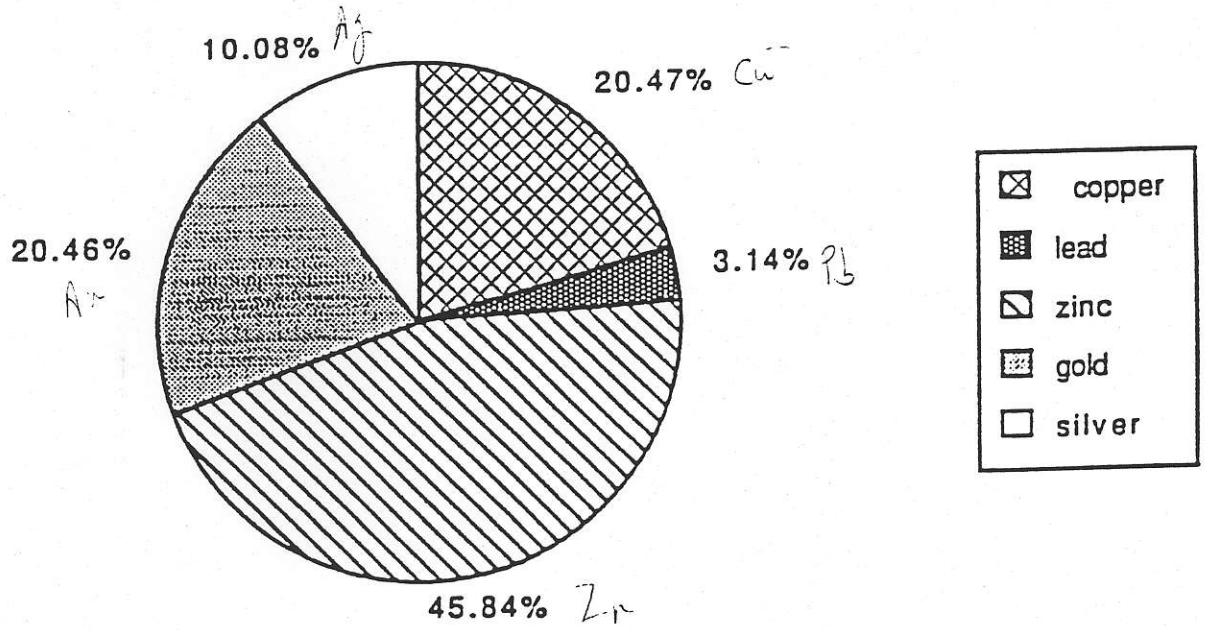
production: 3,000 s.tons/day for 350 days /year

equivalent to about 9.5 years life

dilution: 10% of feed i.e. 3,000 ton/d = 2,700 tons ore & 300 ton waste of zero grade

costs: assumed $130 million for capital, operating at $45/ton

all costs above are in $Canadian 1991 real rates and the discount rates for the net present values are inflation free



Net Proportionate Value of Each Metal

MineStar

TULSEQUAH CHIEF DRILL RESULTS

Hole #	Intercept (ft)	Length (ft)	True Width (ft)	% Cu	% Pb	% Zn	Au oz/t	Ag oz/t
87-1	1812.5-1837.5 AB	25.0	18.6	0.52	0.55	2.28	0.036	1.30
	1857-1877.5 AB	20.5	15.2	1.37	2.78	8.00	0.185	6.50
87-5	2102-2115.5 AB	13.5	10.3	1.31	1.08	6.03	0.07	2.48
88-2	701-715 AB	14.0	13.5	0.51	1.55	11.63	0.015	1.76
88-3	566-639.5 AB	73.5	50.0	3.86	0.21	2.46	0.081	1.60
88-4	547-572 AB	25.0	16.1	0.61	0.6	3.36	0.065	1.88
88-5	694.5-704.5 AB	10.0	6.9	0.77	0.77	4.06	0.046	2.70
	719-726.5 AB	7.5	5.2	0.88	0.65	6.13	0.048	0.99
	738.5-743.2 AB	4.7	3.2	1.16	1.05	6.42	0.04	1.62
88-6	361-364 AB	3.0	2.0	0.43	1.00	4.00	0.014	1.146
88-7	477-485 AB	8.0	5.9	0.98	1.85	6.12	0.04	1.29
	495.7-501.4 AB	5.7	4.2	2.39	2.04	14.04	0.17	9.16
	518.5-542 AB	23.5	16.8	0.30	1.00	3.01	0.04	1.91
88-8	763.5-775 AB	11.5	9.1	5.04	0.18	3.03	0.083	1.83
89-12	923.5-935.5 AB	12.0	10.0	2.23	0.48	3.79	0.034	1.33
89-13	1230-1279 H	49.0	40.0	1.03	1.47	6.24	0.07	2.68
	1360-1382 AB	22.0		0.28	0.01	0.90	0.006	0.15
89-14	952.5-961.5 H	9.0		0.36	0.14	1.08	0.02	0.28
	1053-1070 AB	17.0		0.20	0.01	0.33	0.032	0.41
	1109-1113 AB	4.0		0.14	0.50	2.79	0.003	0.058
89-15	1290-1299.6 H	9.6	5.65	0.70	0.56	14.07	0.03	1.65
	1352-1377.5 AB	25.5	18.7	0.78	1.13	7.82	0.047	0.84
89-16	1140-1168 I	28.0		0.13	0.23	1.23	0.007	0.29
	1536.5-1543 H	6.5		0.24	0.20	1.06	0.017	0.65
	1845.7-1865.2 AB	19.5	12.4	0.68	1.36	8.19	0.086	7.18
89-18	1426.6-1449.7 H	23.1		0.27	0.65	2.40	0.039	1.00
	1760-1794.7 AB	34.7	25.0	0.87	2.16	11.87	0.081	5.20
89-19	1230-1254.5 H	24.5	16.9	1.27	1.67	11.36	0.059	3.23
	1462.7-1470 AB	7.3	5.03	0.27	0.39	2.27	0.038	0.83
89-20	866.9-887.5 AB	20.6	14.6	0.75	0.43	3.85	0.062	1.13
89-21	1647-1716.1 H	69.1	52.0	1.20	1.16	6.00	0.106	3.44
	1808.4-1813.3 AB	4.9		0.32	0.65	3.88	0.005	0.26
90-22	1784.6-1948.5 H	163.9	130.0	2.92	1.58	9.09	0.112	4.96
90-23	2085-2174.5 H	89.5	62.0	1.19	1.15	5.43	0.105	4.16
90-24	2054-2073 H	19.0	14.0	0.12	0.97	2.23	0.067	4.46
	2090-2094 H	4.0		0.67	0.90	2.66	0.012	0.423
90-25	1491-1497 H	6.0	4.5	0.80	0.18	7.08	0.105	0.87
	1623.5-1631 AB	7.5	5.6	0.35	0.25	2.77	0.023	0.92
90-27	1331-1342 I	11.0	10.0	0.39	3.26	5.47	0.018	2.12
	2478-2508 H	30.0	27.0	0.07	0.88	2.18	0.011	0.105

May 1/91

Redfern

CORPORATE INFORMATION

Redfern Resources Ltd. trades on the Toronto Stock Exchange (RFR). The Company's directors and officers are professionals with extensive experience in the geological, financial and legal fields.

Board of Directors

John A. Greig, M.Sc., P.Geol.
President & Chairman, Director

George F. Fink, B.Comm., C.A.
Co-Chairman, Director

J. Michael Kenyon, M.Sc., P.Geol.
Secretary-Treasurer, Director

F. William Woodward
Assistant Secretary, Director

Wayne J. Babcock, B.Sc., P.Geoph.
Director

Murray W. Pyke, M.Sc., P.Geol.
Director

Jonathan A. Rubenstein, LLB.
Director

Carl R. Jonsson, LLB.
Director

Share Capitalization

As at December 31, 1990, 10,301,704 shares are issued and outstanding of an authorized 20,000,000 shares.

Financial

The Company is debt free and has approximately $1,400,00 of working capital as at December 31, 1990. The Company also receives income of approximately $15,000 per month from oil and natural gas production.

Head Office

166 - 10551 Shellbridge Way
Richmond, British Columbia
V6X 2W9
Telephone: (604) 278-3028
Telecopier: (604) 278-8837

Legal Counsel

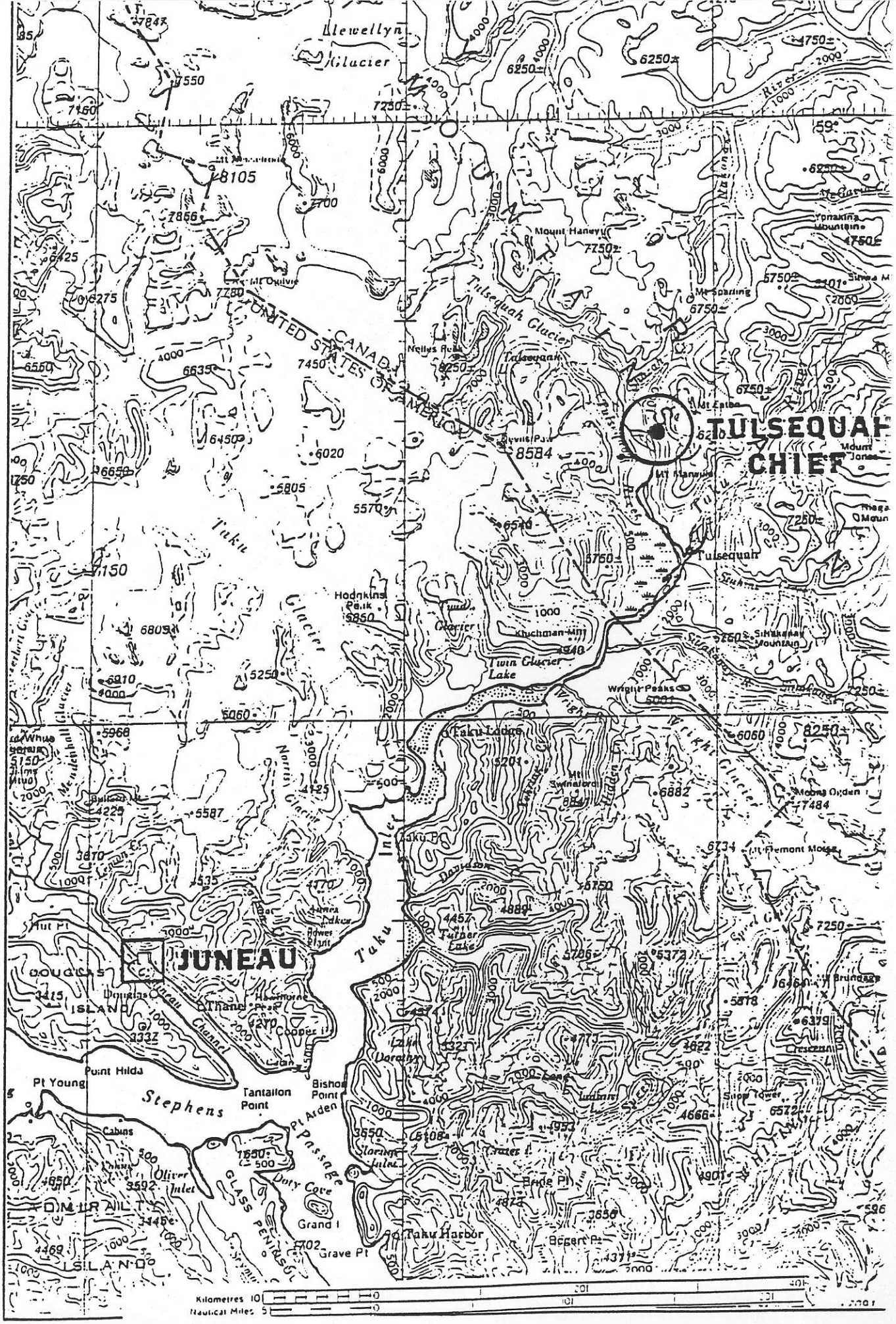
Smith, Lyons, Torrance,
Stevenson & Mayer
550 - 999 Canada Place
Vancouver, British Columbia
V6C 3C8

Registrar and Transfer Agent

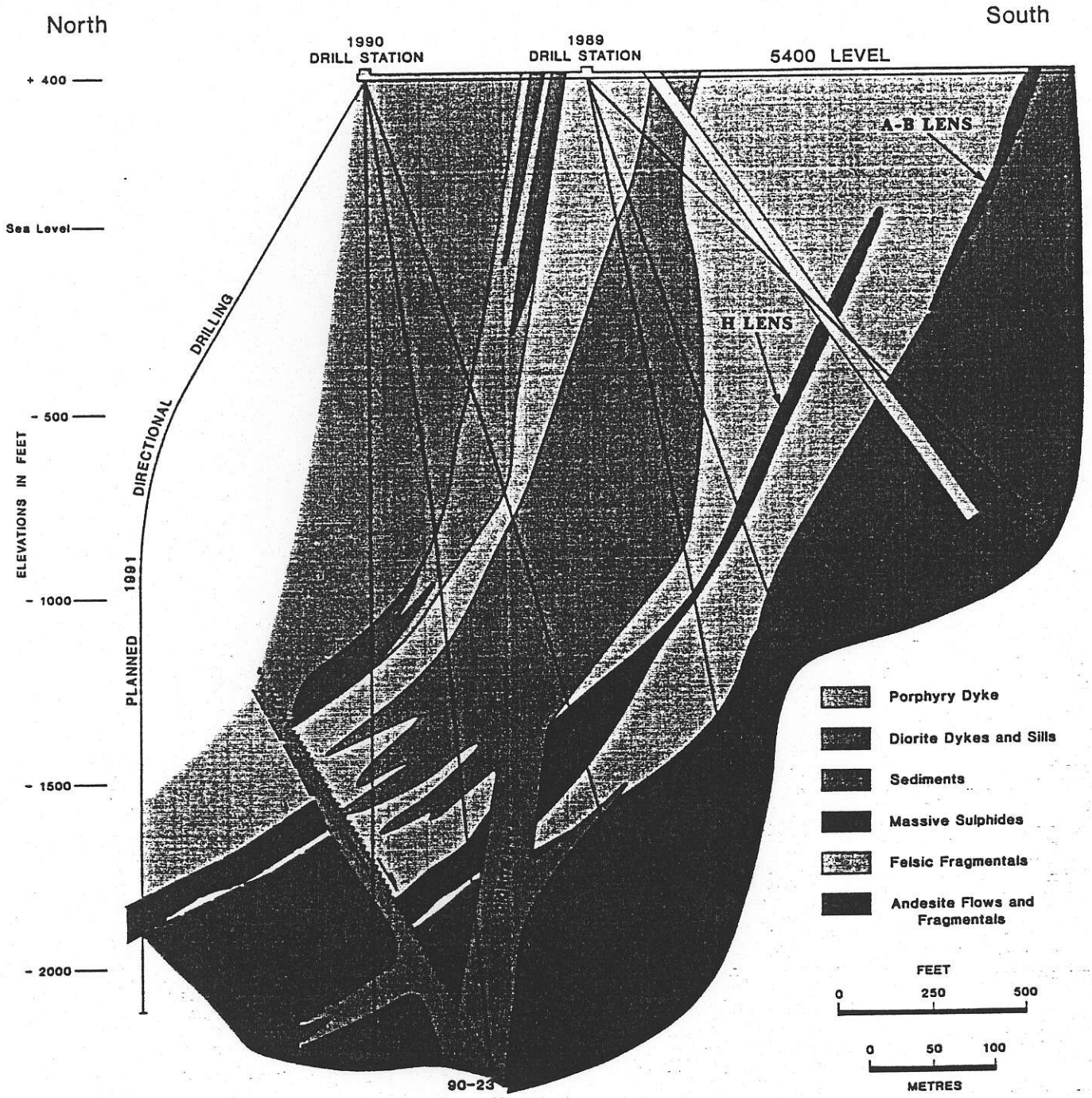
Montreal Trust Company
Vancouver, British Columbia
Toronto, Ontario

Auditors

KPMG Peat Marwick Thorne
Suite 400 - N. Tower
5811 Cooney Road
Richmond, British Columbia
V6X 3M1



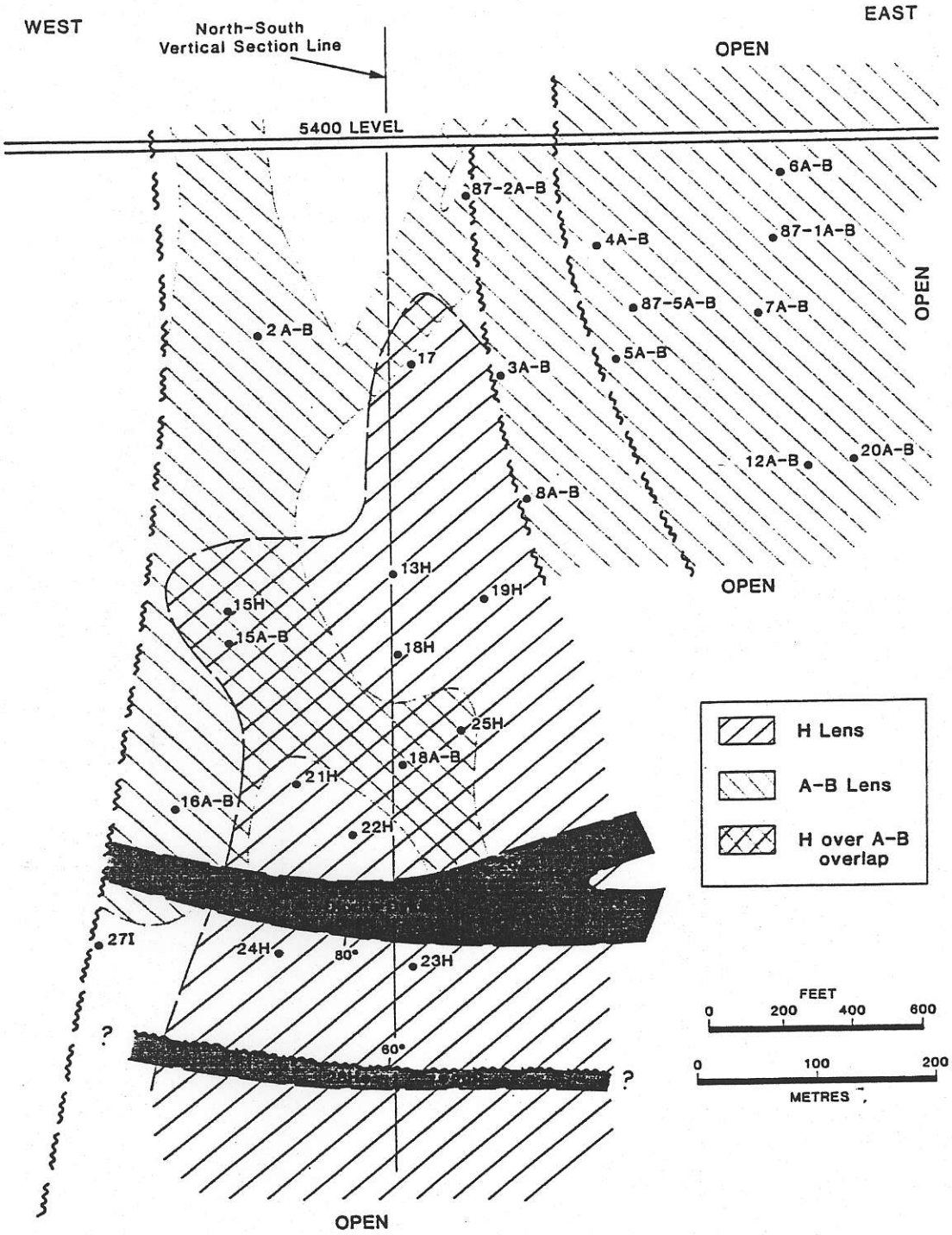
Llewellyn Glacier
Mount Haney
Tulsequah Glacier
Tulsequah
Mt Sparling
Mt Eaton
TULSEQUAH CHIEF
Mt Manville
Mount Jones
Devils Paw
8584
Nelles Peak
UNITED STATES OF AMERICA
CANADA
Taku Glacier
Hodgkins Peak
Twin Glacier Lake
Wright Peaks
Taku Lodge
Mt Swinaford
Mount Ogden
Mt Fremont Morse
Taku Inlet
Davidson
Turner Lake
JUNEAU
DOUGLAS ISLAND
Douglas
Thane
Cooper I
Point Hilda
Pt Young
Stephens Passage
Tantallon Point
Bishop Point
Pt Arden
Cabins
Oliver Inlet
GLASS PENINSULA
Doty Cove
Grand I
Grave Pt
Taku Harbor
Bogart Pt
Bride Pt
Crescent
Snow Tower
Kilometres 10
Nautical Miles 5



TULSEQUAH CHIEF

NORTH - SOUTH VERTICAL SECTION

Redfern



TULSEQUAH CHIEF

RECONSTRUCTED EAST-WEST LONGITUDINAL SECTION

Redfern

APPENDIX "B"

REDFERN CALCULATED GEOLOGICAL RESERVE

Notes to March 1991

Tulsequah Chief Reserve Calculation

1. The palinspastic drill hole location maps were provided by Cominco Ltd., located to the best of their knowledge currently.

2. An area of influence of 60 meters (200 feet) about each drill hole was selected except where the distance between the holes would have left an internal gap.

3. Any assay interval under 6 feet true width was cut to 6 feet. Holes cut are 5 an 7 in the AB lens and 15 and 25 in the H lens. Assays in the reserve calculation sheet reflect the cut grades.

4. A minimum gross contained metal value of $65.00 per ton over a 6 foot true width was considered as the cut off value for incorporation in the reserve. (Gross metal value at March 15, 1991).

5. The specific gravity of most of the 1987, 1988 and 1989 drill holes has been measured. Polygons areas not measured are 2, 22, 23, 24, 25 and X. These blocks were assigned the weighted average specific gravity of the measured holes (3.79g/cc) except hole 2 which was assigned 3.5g/cc.

6. Polygon X below the old workings abuts against drill data from 1957 above the block and from 1988 east of the block. The assigned grade and thickness is an estimate from nearby data.

7. Weighted Average Width of Reserves = 7.67 meters or 25.2 feet; in a range of 6 feet to 130 feet.

$$\left(\frac{\text{tonnes}}{\text{polygon area x avg. spec. grav.}} = \text{average width} \right)$$

8. The area around holes 14 and 17 has been excluded from reserves even though it is likely that the zones are present here. Infill drilling will be the determining factor.

9. The I lens intercept in hole 27 has not been included in reserves as more data is needed. An uneconomic intercept in hole 16 is the up dip expression of the I lens.

TULSEQUAH CHIEF DRILL INTERCEPTS

Hole #	Intercept (ft)	Length (ft)	True Width (ft)	% Cu	% Pb	% Zn	Au oz/t	Ag oz/t
87-1	1812.5-1837.5 AB	25.0	18.6	0.52	0.55	2.28	0.036	1.30
	1857-1877.5 AB	20.5	15.2	1.37	2.78	8.00	0.185	6.50
87-5	2102-2115.5 AB	13.5	10.3	1.31	1.08	6.03	0.07	2.48
88-2	701-715 AB	14.0	13.5	0.51	1.55	11.63	0.015	1.76
88-3	566-639.5 AB	73.5	50.0	3.86	0.21	2.46	0.081	1.60
88-4	547-572 AB	25.0	16.1	0.61	0.6	3.36	0.065	1.88
88-5	694.5-704.5 AB	10.0	6.9	0.77	0.77	4.06	0.046	2.70
	719-726.5 AB	7.5	5.2	0.88	0.65	6.13	0.048	0.99
	738.5-743.2 AB	4.7	3.2	1.16	1.05	6.42	0.04	1.62
88-6	361-364 AB	3.0	2.0	0.43	1.00	4.00	0.014	1.146
88-7	477-485 AB	8.0	5.9	0.98	1.85	6.12	0.04	1.29
	495.7-501.4 AB	5.7	4.2	2.39	2.04	14.04	0.17	9.16
	518.5-542 AB	23.5	16.8	0.30	1.00	3.01	0.04	1.91
88-8	763.5-775 AB	11.5	9.1	5.04	0.18	3.03	0.083	1.83
89-12	923.5-935.5 AB	12.0	10.0	2.23	0.48	3.79	0.034	1.33
89-13	1230-1279 H	49.0	40.0	1.03	1.47	6.24	0.07	2.68
	1360-1382 AB	22.0		0.28	0.01	0.90	0.006	0.15
89-14	952.5-961.5 H	9.0		0.36	0.14	1.08	0.02	0.28
	1053-1070 AB	17.0		0.20	0.01	0.33	0.032	0.41
	1109-1113 AB	4.0		0.14	0.50	2.79	0.003	0.058
89-15	1290-1299.6 H	9.6	5.65	0.70	0.56	14.07	0.03	1.65
	1352-1377.5 AB	25.5	18.7	0.78	1.13	7.82	0.047	0.84
89-16	1140-1168 I	28.0		0.13	0.23	1.23	0.007	0.29
	1536.5-1543 H	6.5		0.24	0.20	1.06	0.017	0.65
	1845.7-1868.2 AB	19.5	12.4	0.68	1.36	8.19	0.086	7.18
89-18	1426.6-1449.7 H	23.1		0.27	0.65	2.40	0.039	1.00
	1760-1794.7 AB	34.7	25.0	0.87	2.16	11.87	0.081	5.20
89-19	1230-1254.5 H	24.5	16.9	1.27	1.67	11.36	0.059	3.23
	1462.7-1470 AB	7.3	5.03	0.37	0.39	2.27	0.038	0.83
89-20	866.9-887.5 AB	20.6	14.6	0.75	0.43	3.85	0.062	1.13
89-21	1647-1716.1 H	69.1	52.0	1.20	1.16	6.00	0.106	3.44
	1808.4-1813.3 AB	4.8		0.32	0.65	3.80	0.005	0.26
90-22	1784.6-1948.5 H	164.0	130.0	2.92	1.58	9.09	0.112	4.96
90-23	2085-2174.5 H	89.5	62.0	1.19	1.15	5.43	0.105	4.16
90-24	2054-2073 H	19.0	14.0	0.12	0.97	2.23	0.067	4.46
	2090-2094 H	4.0		0.67	0.90	2.66	0.012	0.423
90-25	1491-1497 H	6.0	4.5	0.80	0.18	7.08	0.105	0.87
	1623.5-1631 AB	7.5	5.6	0.35	0.25	2.77	0.023	0.92
90-27	1331-1342 I	11.0	10.0	0.39	3.26	5.47	0.018	2.12
	2478-2508 H	30.0	27.0	0.07	0.88	2.18	0.011	0.105

Cut Assay Data

Hole 88-5		Cu%	Pb%	Zn%	Au	Ag
1st intercept	6.9 ft	0.77	0.77	4.06	0.046	2.70
2nd intercept	6.0 ft	0.76	0.56	5.31	0.042	0.86
3rd intercept	6.6 ft	0.63	0.54	3.30	0.022	0.83
	19.5 ft	0.72	0.63	4.19	0.037	1.50

2nd intercept cut to 6 feet true width

Hole 88-7

1st intercept	6 ft	0.96	1.82	6.02	0.039	1.27
2nd intercept	6 ft	1.67	1.43	9.83	0.12	6.41
3rd intercept	16.8 ft	0.30	1.00	3.01	0.04	1.091
	28.8 ft	0.72	1.26	5.06	0.056	2.71

1st and 2nd intercepts cut to 6 feet true width

Hole 89-15

H cut to 6ft true width	0.66	0.53	13.25	0.028	1.55

Hole 90-25

H cut to 6ft true width	0.60	0.13	5.31	0.079	0.65

1991 Tulsequah Chief Reserves

POLGON	Area (m^2)	True Width (m)	(S.G. (g/cc)	Tonnes	Tons
AB lens					
87-1	7890	4.63	3.04	111,053.3	122,380.7
87-5	6110	3.14	3.31	63,503.6	69,981
2	13370	4.12	3.50	192,795.9	212,460.5
3	7810	15.24	4.59	546,322	602,046.8
4	7880	4.91	3.39	131,161.8	144,540.3
5	7520	5.94	3.06	136,686.5	150,628.5
7	9500	8.78	3.16	263,575.6	290,460.3
8	6550	2.77	4.23	76,747	84,575.2
12	9050	3.05	3.43	94,676.6	104,333.6
15	16450	5.70	4.08	382,561.2	421,582.4
16	12300	3.78	3.94	183,186.4	201,871.4
18	12300	7.62	3.71	347,723.5	383,191.3
20	8480	4.45	3.44	129,811.8	143,052.6
X	5590	10	3.8	212,420	234,086.8
				2,872,224.6	3,165,191.7
			OLD RESERVE		780,000
					3,945,191.7
H lens					
13	12030	12.20	3.50	513,681	566,076.5
15	12850	1.83	4.08	95,943.2	105,729.4
18	10540	5.07	3.71	198,254.2	218,476.1
19	9610	5.15	3.81	188,562.6	207,796
21	11610	15.85	3.79	697,430.12	768,568
22	7520	39.63	3.79	1,129,486.7	1,244,694.3
23	9010	18.9	3.79	645,395.3	711,225.63
24	7820	4.27	3.79	126,553.4	139,461.85
25	12130	1.83	3.79	84,130.04	92,711.31
				3,679,436.6	4,054,739.1
			TOTAL		7,999,931

AB LENS POLYGON	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag	Tons	Cu (Tons)	Pb (Tons)	Zn (Tons)	Au (Ozs)	Ag (Ozs)
	ASSAY						Contained Metal				
87-1	1.37	2.78	8.00	0.185	6.50	122,380.7	1676.6156	3402.1835	9790.456	22640.43	795474.55
87-5	1.31	1.08	6.03	0.07	2.48	69,981	916.7511	755.7948	4219.8543	4898.67	173552.88
2	0.51	1.55	11.63	0.015	1.76	212,460.5	1083.5486	3293.1378	24709.156	3186.9075	373930.48
3	3.86	.21	2.46	0.081	1.60	602,046.8	23239.006	1264.2983	14810.351	48765.791	963274.88
4	0.61	0.60	3.36	0.065	1.88	144,540.3	881.69583	867.2418	4856.5541	9395.1195	271735.76
5	0.72	0.63	4.19	0.037	1.50	150,628.5	1084.5252	964.0224	6401.7113	5573.2545	230461.61
7	0.72	1.26	5.06	0.056	2.71	290,460.3	2,091.3142	3,659.7998	14,697.291	16,265.777	787,147.41
8	5.04	0.18	3.03	0.083	1.83	84,575.2	4262.5901	152.2353	2562.6286	7019.7416	154772.62
12	2.23	0.48	3.79	0.034	1.33	104,333.6	2326.6393	500.80128	3954.2434	3547.3424	138763.69
15	0.78	1.13	7.82	0.047	0.84	421,582.4	3288.3427	4763.8811	32967.744	19814.373	354129.22
16	0.68	1.36	8.19	0.086	7.18	201,871.4	1372.7255	2745.451	16533.268	17360.94	1449436.7
18	0.87	2.16	11.87	0.081	5.20	383,191.3	3333.7643	8276.9321	45484.807	31038.495	1992594.8
20	0.75	0.43	3.85	0.062	1.13	143,052.6	1072.8945	615.12618	5507.5251	8869.2612	161649.44
X	1.0	1.0	5.0	0.060	1.60	234,086.8	2340.868	2340.868	11704.34	14045.208	374538.88
						3,165,191.7	48,971.281 (1.547%)	33,601.773 (1.061%)	198199.93 (6.261%)	212421.32 (0.067)	8221462.9 (2.597)
Old Reserve	1.30	1.60	8.0	0.07	2.90	780,000	10140.0	12480	62400	54600	2262000
						3,945,191.7	59,111.281	46081.773	260599.93	267021.32	10483463
							1.498%	1.168%	6.605%	0.0677oz	2.657oz

H LENS POLYGON	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag	Tons	Cu (tons)	Pb (tons)	Zn (tons)	Au (ozs)	Ag (oz
	ASSAY						Contained Metal				
13	1.03	1.47	6.24	0.068	2.68	566,076.5	5830.588	8321.3246	35323.174	38493.202	151708.
15	0.66	0.53	13.25	0.028	1.55	105,729.4	697.81404	560.36582	14009.146	2960.4232	163880
18	0.27	0.65	2.40	0.039	1.00	218,476.1	589.88547	1420.0947	5243.4264	8520.5679	218476.
19	1.27	1.67	11.36	0.059	3.23	207,796	2639.0092	3470.1932	23605.626	12259.964	671181.
21	1.20	1.16	6.00	0.106	3.44	768,568	9222.816	8915.3888	46114.08	81468.208	2643873.
22	2.92	1.58	9.09	0.112	4.96	1,244,694.3	36345.074	19666.17	113142.71	139405.76	6173683.
23	1.19	1.15	5.43	0.105	4.16	711,225.6	8463.5846	8179.0944	38619.55	74678.688	2958698.
24	0.12	0.97	2.23	0.067	4.46	139,461.8	167.3542	1352.7795	3109.998	9343.9406	621999.
25	0.60	0.13	5.31	0.079	0.65	92,711.3	556.2678	120.5247	4922.97	7324.1927	60262.
						4,054,739.1	64512.393 (1.59%)	52005.9357 (1.28%)	284090.6804 (7.01%)	374454.946 (0.0923)	15029140.8 (3.7
					AB lens	3,945,191.7	59,111.281	46,081.773	260,599.93	267,021.32	10483463
					Total	7,999,931	123,623.67	98,087.709	544,680.61	641,307.38	25512603.82
							1.545%	1.226%	6.808%	0.080	3.189o

TULSEQUAH

1. PRODUCTION

		(HEAD GRADES)				
		OZ AU/TON	OZ AG/TON	% CU	% PB	% ZN
TULSEQUAH CHIEF	633,000 TONS	0.10	3.16	1.8	1.3	6.7
BIG BULL	396,000 TONS	0.15	4.5	1.2	1.9	7.3
TOTAL	1,030,000 TONS	0.12	3.7	1.5	1.4	6.9
	RECOVERED GRADES	0.092	3.3	1.32	1.31	6.06
	RECOVERIES	76.7%	89.2%	88%	93.6%	87.8%

2. RESERVES

TULSEQUAH CHIEF	780,000 TONS	0.07	2.9	1.3	1.6	8.0
BIG BULL	50,000 TONS	0.07	1.8	0.5	1.3	5.6

high Fe [illegible] to Conc

CONFERENCE ASSOCIATES

	%/g/t	lbs/ozs	$	GROSS		Est. NSR	Pay
Cu	1.4 %	28	1.0	$28	x.95 x.6	15.96	18.00
Pb	1.07	21.4	.35	$7.49	x.8 x0	—	
Zn	6.42	128.4	.60	77.04	x.9 x.45	31.20	36.00
Au	2.4	0.07	375	26.25	x.9	23.62	21.70
Ag	93	2.7	4	10.85	x.9	9.75	8.96
				$149.63		80.53	$85.00

P. O. Box 18852
Denver, CO 80218-0852
303- 863-9506 • Fax 303-863-9507

APPENDIX "C"

NET SMELTER RETURN CALCULATIONS - OVERALL RESERVES

File: rednsr SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 16-May-91

REDFERN - TULSEQUAH CHIEF - undiluted PRODUCTION/FEED GRADE SCHEDULE

		A/B Lense base rec Feas Prices	H Lense base rec Feas Prices	Old Reserve base rec Feas Prices	A/B Lense base rec +20% Prices	H Lense base rec +20% Prices	Old Reserve base rec +20% Prices	A/B Lense base rec RedfernPrice	H Lense base rec RedfernPrice	Old Reserve base rec RedfernPrice	A/B Lense +2.5% pay.rec Feas Prices	H Lense +2.5% pay.rec Feas Prices	Old Reserve +2.5% pay.rec Feas Prices
	Units												
MILL FEED SCHEDULE													
FEED GRADES Cu	%	1.55	1.59	1.30	1.55	1.59	1.30	1.55	1.59	1.30	1.55	1.59	1.30
Zn	%	6.61	7.01	8.00	6.61	7.01	8.00	6.61	7.01	8.00	6.61	7.01	8.00
Pb	%	1.17	1.28	1.60	1.17	1.28	1.60	1.17	1.28	1.60	1.17	1.28	1.60
Ag	g/t	91	127	99	91	127	99	91	127	99	91	127	99
Au	g/t	2.32	3.16	2.40	2.32	3.16	2.40	2.32	3.16	2.40	2.32	3.16	2.40
TONNAGE MILLED		2871443	3678435	707611	2871443	3678435	707611	2871443	3678435	707611	2871443	3678435	707611

NOTES:

1) - Undiluted grades used as it is felt that past experience indicated that higher grade areas(stopes) could be delineated. At this stage, I am more interested in determining the minimum mineable tonneage required to make this thing go. Then Alex and Ian can evaluate the probabilities of it being there within either the currently defined "Geological Reserve" or in the property.

2) - I am concerned that in the wider areas the rock conditions will be negative. We did not see immediate HW/FW core but Mines Inspector Reports and Old Cominco reports indicate that caving occurred uncontrollaby below 5400 ft level. Above this, (majority of old workings), the tons/vert. ft. indicates a quite narrow mining width. Therefore,the shrinkage stope stability was okay. The reason they have so many tons now is the much wider zones being predicted.
Therefore, we must be cautious as I suspect that currently defined tons are probably 50% to 100% higher than mineable tonnes at previous grades

File: rednsr SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 16-May-91

REDFERN - TULSEQUAH CHIEF - undiluted METAL PRICES - NET SMELTER RETURNS

	Units	A/B Lense base rec Feas Prices	H Lense base rec Feas Prices	Old Reserve base rec Feas Prices	A/B Lense base rec +20% Prices	H Lense base rec +20% Prices	Old Reserve base rec +20% Prices	A/B Lense base rec RedfernPrice	H Lense base rec RedfernPrice	Old Reserve base rec RedfernPrice	A/B Lense +2.5% pay.rec Feas Prices	H Lense +2.5% pay.rec Feas Prices	Old Reserve +2.5% pay.rec Feas Prices
METAL PRICES													
Cu	US$/lb	0.95	0.95	0.95	1.14	1.14	1.14	1.22	1.22	1.22	0.95	0.95	0.95
Zn	US$/lb	0.55	0.55	0.55	0.66	0.66	0.66	0.61	0.61	0.61	0.55	0.55	0.55
Pb	US$/lb	0.30	0.30	0.30	0.36	0.36	0.36	0.35	0.35	0.35	0.30	0.30	0.30
Ag	US$/oz	4.00	4.00	4.00	4.80	4.80	4.80	4.13	4.13	4.13	4.00	4.00	4.00
Au	US$/oz	375.00	375.00	375.00	450.00	450.00	450.00	370.00	370.00	370.00	375.00	375.00	375.00
Sb	US$/lb	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
COPPER-SILVER CONCENTRATE SALES DISTRIBUTION													
TO DOWA, JAPAN	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
TO SGM, BELGIUM	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EXCHANGE RATE	CDN$/US$	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500
CONSUMER PRICE INDEX (CPI)	POINTS	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2
COMINCO LABOUR - ZINC CONC	CDN$/SDT	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20
NET SMELTER RETURNS													
Cu-Ag Conc	CDN $	52954499	94306720	13131667	80601247	135925027	19480847	75894543	124635572	17900983	53944698	95998260	13387545
Zn Conc	CDN $	72859644	100957466	21665647	96277507	133166708	28637092	84775192	117162844	25217372	75183470	103840925	22358732
Pb Conc	CDN $	9316893	16617488	2404536	14449989	24560304	3980481	11902917	20201574	3270517	9301504	16595921	2399350
Au Conc	CDN $	24937788	43554577	6354214	30170286	52693289	7687468	24588955	42945330	6265330	27087597	47309282	6901991
Total Net Smelter Return	CDN $	160068823	255436251	43556063	221499029	346345329	59785889	197161606	305025319	52654202	165517268	263744388	45047618
UNIT SMELTER RETURNS													
Cu-Ag Conc	CDN$/tonne milled	18.44	25.64	18.56	28.07	36.95	27.53	26.43	33.88	25.30	18.79	26.10	18.92
Zn Conc	CDN$/tonne milled	25.37	27.45	30.62	33.53	36.20	40.47	29.52	31.85	35.64	26.18	28.23	31.60
Pb Conc	CDN$/tonne milled	3.24	4.52	3.40	5.03	6.68	5.63	4.15	5.51	4.62	3.24	4.51	3.39
Au Conc	CDN$/tonne milled	8.68	11.84	8.98	10.51	14.32	10.86	8.56	11.67	8.85	9.43	12.86	9.75
Total Unit Returns	CDN$/tonne milled	55.75	69.44	61.55	77.14	94.16	84.49	68.66	82.92	74.41	57.64	71.70	63.66

File: rednsr SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 16-May-91

REDFERN - TULSEQUAH CHIEF - undiluted CONCENTRATE DETAILS - SHEET 1

		Units	A/B Lense base rec Feas Prices	H Lense base rec Feas Prices	Old Reserve base rec Feas Prices	A/B Lense base rec +20% Prices	H Lense base rec +20% Prices	Old Reserve base rec +20% Prices	A/B Lense base rec RedfernPrice	H Lense base rec RedfernPrice	Old Reserve base rec RedfernPrice	A/B Lense +2.5% pay.rec Feas Prices	H Lense +2.5% pay.rec Feas Prices	Old Reserve +2.5% pay.rec Feas Prices
METAL DISTRIBUTIONS TO CONCENTRATES														
Cu-Ag Conc	Cu	%	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	81.50	81.50	81.50
	Zn	%	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
	Pb	%	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
	Ag	%	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	70.50	70.50	70.50
	Au	%	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00
Zn Conc	Cu	%	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
	Zn	%	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	78.50	78.50	78.50
	Pb	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
	Ag	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
	Au	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Pb Conc	Cu	%	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
	Zn	%	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	Pb	%	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	72.50	72.50	72.50
	Ag	%	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
	Au	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Au Conc.	Cu	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Zn	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Pb	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Ag	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Au	%	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	31.50	31.50	31.50
Tailings	Cu	%	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	6.50	6.50	6.50
	Zn	%	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	8.50	8.50	8.50
	Pb	%	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	8.50	8.50	8.50
	Ag	%	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	9.50	9.50	9.50
	Au	%	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	17.50	17.50	17.50
MOISTURE CONTENT		%	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
CONCENTRATE TONNAGES (DMT)														
Cu-Ag Conc		tonnes	167432.5	220023.0	34605.6	167432.5	220023.0	34605.6	167432.5	220023.0	34605.6	172731.0	226985.7	35700.7
Zn Conc		tonnes	267129.3	362911.7	79671.8	267129.3	362911.7	79671.8	267129.3	362911.7	79671.8	275916.5	374849.6	82292.6
Pb Conc		tonnes	52260.3	73241.7	17611.7	52260.3	73241.7	17611.7	52260.3	73241.7	17611.7	54126.7	75857.5	18240.6
Au Conc		tonnes	483.2	843.9	123.1	483.2	843.9	123.1	483.2	843.9	123.1	524.9	916.7	133.7
Tailings		tonnes	2384138	3021415	575599	2384138	3021415	575599	2384138	3021415	575599	2368144	2999826	571244

File: rednsr SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 16-May-91

REDFERN - TULSEQUAH CHIEF - undiluted CONCENTRATE DETAILS - SHEET 2

			Units	A/B Lense base rec Feas Prices	H Lense base rec Feas Prices	Old Reserve base rec Feas Prices	A/B Lense base rec +20% Prices	H Lense base rec +20% Prices	Old Reserve base rec +20% Prices	A/B Lense base rec RedfernPrice	H Lense base rec RedfernPrice	Old Reserve base rec RedfernPrice	A/B Lense +2.5% pay.rec Feas Prices	H Lense +2.5% pay.rec Feas Prices	Old Reserve +2.5% pay.rec Feas Prices
CONCENTRATE GRADES (Payables)															
Cu-Ag Conc	Cu	(fixed)	%	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00
	Zn	(Calc)	%	11.34	11.72	16.36	11.34	11.72	16.36	11.34	11.72	16.36	10.99	11.36	15.86
	Pb	(Calc)	%	2.61	2.78	4.25	2.61	2.78	4.25	2.61	2.78	4.25	2.53	2.70	4.12
	Ag	(Calc)	g/t	1062.34	1446.04	1382.48	1062.34	1446.04	1382.48	1062.34	1446.04	1382.48	1067.61	1453.21	1389.34
	Au	(Calc)	g/t	15.52	20.63	19.14	15.52	20.63	19.14	15.52	20.63	19.14	15.05	20.00	18.55
Zn Conc	Cu	(Calc)	%	0.83	0.81	0.58	0.83	0.81	0.58	0.83	0.81	0.58	0.81	0.78	0.56
	Zn	(Fixed)	%	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
	Pb	(Calc)	%	0.75	0.78	0.85	0.75	0.78	0.85	0.75	0.78	0.85	0.73	0.75	0.83
	Ag	(Calc)	g/t	58.75	77.36	52.98	58.75	77.36	52.98	58.75	77.36	52.98	56.88	74.89	51.30
	Au	(Calc)	g/t	1.50	1.92	1.28	1.50	1.92	1.28	1.50	1.92	1.28	1.45	1.86	1.24
Pb Conc	Cu	(Calc)	%	5.96	5.59	3.66	5.96	5.59	3.66	5.96	5.59	3.66	5.76	5.40	3.53
	Zn	(Calc)	%	10.90	10.56	9.64	10.90	10.56	9.64	10.90	10.56	9.64	10.52	10.20	9.31
	Pb	(Fixed)	%	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
	Ag	(Calc)	g/t	700.73	894.35	559.27	700.73	894.35	559.27	700.73	894.35	559.27	676.57	863.51	539.99
	Au	(Calc)	g/t	7.65	9.54	5.79	7.65	9.54	5.79	7.65	9.54	5.79	7.39	9.21	5.59
Au Conc	Cu	(calc)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Zn	(Calc)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Pb	(Calc)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Ag	(Calc)	g/t	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Au	(Fixed)	g/t	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00
Tailings	Cu	(Calc)	%	0.17	0.17	0.14	0.17	0.17	0.14	0.17	0.17	0.14	0.12	0.13	0.10
	Zn	(Calc)	%	0.88	0.94	1.08	0.88	0.94	1.08	0.88	0.94	1.08	0.68	0.73	0.84
	Pb	(Calc)	%	0.16	0.17	0.22	0.16	0.17	0.22	0.16	0.17	0.22	0.12	0.13	0.17
	Ag	(Calc)	g/t	13	19	15	13	19	15	13	19	15	10	15	12
	Au	(Calc)	g/t	0.56	0.77	0.59	0.56	0.77	0.59	0.56	0.77	0.59	0.49	0.68	0.52

File: rednsr SAN Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 16-May-91

REDFERN - TULSEQUAH CHIEF - undiluted CONCENTRATE DETAILS - SHEET 3

		Units	A/B Lense base rec Feas Prices	H Lense base rec Feas Prices	Old Reserve base rec Feas Prices	A/B Lense base rec +20% Prices	H Lense base rec +20% Prices	Old Reserve base rec +20% Prices	A/B Lense base rec RedfernPrice	H Lense base rec RedfernPrice	Old Reserve base rec RedfernPrice	A/B Lense +2.5% pay.rec Feas Prices	H Lense +2.5% pay.rec Feas Prices	Old Reserve +2.5% pay.rec Feas Prices
CONCENTRATE GRADES (Penalty Items)														
Cu-Ag Conc	Pb	%	2.6	2.8	4.3	2.6	2.8	4.3	2.6	2.8	4.3	2.5	2.7	4.1
	Zn	%	11.3	11.7	16.4	11.3	11.7	16.4	11.3	11.7	16.4	11.0	11.4	15.9
	As	%	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
	Sb	%	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	Hg	g/t	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00
Zn Conc	Fe	%	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	SiO2	%	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
	MgO	%	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
	CaO	%	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
	Hg	g/t	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0
Pb Conc	As	%	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
	Sb	%	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
	Al2O3	%	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
	Fe	%	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	S	%	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
	Hg	g/t	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
Au Conc.														
	? ? As	%	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	? ? Hg	g/t	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	? ? ? ?													
	? ? ? ?													
	? ? ? ?													

File: rednsr SAN Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 16-May-91

REDFERN - TULSEQUAH CHIEF - undiluted

COPPER CONCENTRATE NET SMELTER RETURN - DOWA SANATOSUM - (Sheet 1 of 2)

	Units	A/B Lense base rec Feas Prices	H Lense base rec Feas Prices	Old Reserve base rec Feas Prices	A/B Lense base rec +20% Prices	H Lense base rec +20% Prices	Old Reserve base rec +20% Prices	A/B Lense base rec RedfernPrice	H Lense base rec RedfernPrice	Old Reserve base rec RedfernPrice	A/B Lense +2.5% pay.rec Feas Prices	H Lense +2.5% pay.rec Feas Prices	Old Reserve +2.5% pay.rec Feas Prices
COPPER-SILVER CONC - DOWA (April 23,1991 Offer)													
VALUE													
Copper 100% - 1 unit	US$/SDT	380.00	380.00	380.00	456.00	456.00	456.00	488.00	488.00	488.00	380.00	380.00	380.00
Silver 95.0 %	US$/SDT	117.75	160.27	153.23	141.29	192.33	183.87	121.57	165.48	158.21	118.33	161.07	153.99
Gold 96.0 %	US$/SDT	163.01	216.65	200.96	195.61	259.98	241.15	160.84	213.76	198.28	158.01	210.01	194.80
Total Metal Value	US$/SDT	660.76	756.93	734.19	792.91	908.31	881.03	770.41	867.25	844.49	656.34	751.08	728.79
(Cu-Ag Conc - DOWA)	US$/DMT	728.35	834.36	809.30	874.02	1001.23	971.16	849.22	955.97	930.88	723.48	827.91	803.34
	CDN$/SDT	759.87	870.46	844.32	911.84	1044.56	1013.18	885.97	997.33	971.16	754.79	863.74	838.10
	CDN$/DMT	837.60	959.51	930.69	1005.13	1151.42	1116.83	976.61	1099.36	1070.51	832.01	952.10	923.84
TREATMENT CHARGE													
Base $90.00 $US/DMT	US$/SDT	81.65	81.65	81.65	81.65	81.65	81.65	81.65	81.65	81.65	81.65	81.65	81.65
Refining													
Cu $0.10 $US/oz	US$/SDT	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Ag $0.35 $US/oz	US$/SDT	10.30	14.02	13.41	10.30	14.02	13.41	10.30	14.02	13.41	10.35	14.09	13.47
Au $5.00 $US/oz	US$/SDT	2.17	2.89	2.68	2.17	2.89	2.68	2.17	2.89	2.68	2.11	2.80	2.60
Sub Total Refining	US$/SDT	52.48	56.91	56.09	52.48	56.91	56.09	52.48	56.91	56.09	52.46	56.89	56.07
Penalties													
Hg $1.00/0.001%)0.002%/DMT	US$/SDT	19.96	19.96	19.96	19.96	19.96	19.96	19.96	19.96	19.96	19.96	19.96	19.96
As+Sb $2.30/0.1%)0.1%/DMT	US$/SDT	81.38	81.38	81.38	81.38	81.38	81.38	81.38	81.38	81.38	81.38	81.38	81.38
Pb+Zn $3.00/1.0%)4.0%/DMT	US$/SDT	27.06	28.58	45.21	27.06	28.58	45.21	27.06	28.58	45.21	25.90	27.37	43.49
Sub Total Penalties	US$/SDT	128.40	129.91	146.54	128.40	129.91	146.54	128.40	129.91	146.54	127.23	128.70	144.82
Total Charges	US$/SDT	262.52	268.47	284.28	262.52	268.47	284.28	262.52	268.47	284.28	261.34	267.24	282.54
(Cu-Ag Conc - DOWA)	US$/DMT	289.38	295.94	313.36	289.38	295.94	313.36	289.38	295.94	313.36	288.08	294.58	311.45
	CDN$/SDT	301.90	308.75	326.92	301.90	308.75	326.92	301.90	308.75	326.92	300.54	307.33	324.92
	CDN$/DMT	332.78	340.33	360.36	332.78	340.33	360.36	332.78	340.33	360.36	331.29	338.77	358.16
NET INVOICE VALUE (NIV)	US$/SDT	398.23	488.45	449.91	530.39	639.84	596.75	507.89	598.77	560.21	395.00	483.83	446.25
(Cu-Ag Conc - DOWA)	US$/DMT	438.97	538.42	495.94	584.64	705.29	657.80	559.84	660.03	617.52	435.41	533.33	491.90
	CDN$/SDT	457.97	561.72	517.40	609.94	735.81	686.26	584.07	688.59	644.25	454.25	556.41	513.18
	CDN$/DMT	504.82	619.18	570.33	672.34	811.09	756.47	643.82	759.03	710.15	500.72	613.33	565.68

File: rednsr SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 16-May-91

REDFERN - TULSEQUAH CHIEF - undiluted COPPER CONCENTRATE NET SMELTER RETURN - DOWA SANATOSUN - (Sheet 2 of 2)

	Units	A/B Lense base rec Feas Prices	H Lense base rec Feas Prices	Old Reserve base rec Feas Prices	A/B Lense base rec +20% Prices	H Lense base rec +20% Prices	Old Reserve base rec +20% Prices	A/B Lense base rec RedfernPrice	H Lense base rec RedfernPrice	Old Reserve base rec RedfernPrice	A/B Lense +2.5% pay.rec Feas Prices	H Lense +2.5% pay.rec Feas Prices	Old Reserve +2.5% pay.rec Feas Prices
COPPER-SILVER CONC - DOWA (April 23,1991 Off													
OTHER COSTS													
Freight 50.00 $CDN/WMT plus													
71.50 $US/WMT	US$/SDT	110.97	110.97	110.97	110.97	110.97	110.97	110.97	110.97	110.97	110.97	110.97	110.97
Ins. 0.05813% of 110% NIV	US$/SDT	0.25	0.31	0.29	0.34	0.41	0.38	0.32	0.38	0.36	0.25	0.31	0.29
Rep. 6.00 $CDN/WMT plus													
8.00 $US/WMT	US$/SDT	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76	12.76
Commission @ 0.30%NIV	US$/SDT	1.19	1.47	1.35	1.59	1.92	1.79	1.52	1.80	1.68	1.18	1.45	1.34
Loss @ 1.00%NIV	US$/SDT	3.98	4.88	4.50	5.30	6.40	5.97	5.08	5.99	5.60	3.95	4.84	4.46
Total Other Costs	US$/SDT	129.15	130.38	129.86	130.96	132.45	131.86	130.65	131.89	131.36	129.11	130.32	129.81
(Cu-Ag Conc - DOWA)	US$/DMT	142.37	143.72	143.14	144.35	146.00	145.35	144.01	145.38	144.80	142.32	143.65	143.09
	CDN$/SDT	148.53	149.94	149.34	150.60	152.32	151.64	150.25	151.67	151.07	148.48	149.87	149.28
	CDN$/DMT	163.72	165.28	164.61	166.01	167.90	167.15	165.62	167.19	166.52	163.66	165.20	164.55
NET SMELTER RETURN (NSR)	US$/SDT	269.08	358.07	320.05	399.43	507.39	464.89	377.24	466.88	428.85	265.89	353.51	316.44
(Cu-Ag Conc - DOWA)	US$/DMT	296.61	394.70	352.80	440.29	559.29	512.45	415.83	514.65	472.72	293.09	389.67	348.81
	CDN$/SDT	389.44	411.78	368.06	459.34	583.50	534.62	433.82	536.92	493.18	305.77	406.54	363.90
	CDN$/DMT	341.10	453.90	405.72	506.34	643.19	589.32	478.20	591.84	543.63	337.05	448.13	401.13

File: rednsr SAN Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 16-May-91

REDFERN - TULSEQUAH CHIEF - undiluted

LEAD CONCENTRATE NET SMELTER RETURN - ASARCO SAMATOSUM - (Sheet 1 of 2)

	Units	A/B Lense base rec Feas Prices	H Lense base rec Feas Prices	Old Reserve base rec Feas Prices	A/B Lense base rec +20% Prices	H Lense base rec +20% Prices	Old Reserve base rec +20% Prices	A/B Lense base rec RedfernPrice	H Lense base rec RedfernPrice	Old Reserve base rec RedfernPrice	A/B Lense +2.5% pay.rec Feas Prices	H Lense +2.5% pay.rec Feas Prices	Old Reserve +2.5% pay.rec Feas Prices
LEAD CONCENTRATE - ASARCO (May 24, 1988)													
PAYABLE													
Silver -1opst * 95%	oz/SDT	18.47	23.83	14.55	18.47	23.83	14.55	18.47	23.83	14.55	17.80	22.98	14.01
Gold -.02opst * 95%	oz/SDT	0.19	0.25	0.14	0.19	0.25	0.14	0.19	0.25	0.14	0.19	0.24	0.14
Lead -1.5units * 95%	lb/SDT	826.50	826.50	826.50	826.50	826.50	826.50	826.50	826.50	826.50	826.50	826.50	826.50
VALUE													
Silver avg. H&H	US$/SDT	73.87	95.33	58.19	88.64	114.39	69.82	76.27	98.42	60.08	71.19	91.91	56.05
Gold avg. London Final	US$/SDT	72.39	91.96	52.99	86.86	110.35	63.59	71.42	90.73	52.29	69.64	88.54	50.92
Lead avg. LME	US$/SDT	247.95	247.95	247.95	297.54	297.54	297.54	286.23	286.23	286.23	247.95	247.95	247.95
Total Metal Value	US$/SDT	394.20	435.24	359.13	473.04	522.29	430.96	433.92	475.39	398.60	388.78	428.40	354.92
(Lead Conc)	US$/DMT	434.53	479.76	395.87	521.43	575.71	475.04	478.31	524.03	439.37	428.55	472.23	391.23
	CDN$/SDT	453.33	500.52	413.00	544.00	600.63	495.60	499.01	546.70	458.39	447.10	492.66	408.16
	CDN$/DMT	499.71	551.73	455.25	599.65	662.07	546.30	550.06	602.63	505.28	492.84	543.06	449.91
TREATMENT CHARGE													
Treatment @ US$ 80.00/SDT	US$/SDT	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00
Refining													
Ag US$0.30/oz payable	US$/SDT	5.54	7.15	4.36	5.54	7.15	4.36	5.54	7.15	4.36	5.34	6.89	4.20
Au US$6.00/oz pyable	US$/SDT	1.16	1.47	0.85	1.16	1.47	0.85	1.16	1.47	0.85	1.11	1.42	0.81
Pb US$0.085/lb payble	US$/SDT	70.25	70.25	70.25	70.25	70.25	70.25	70.25	70.25	70.25	70.25	70.25	70.25
Sub Total Refining	US$/SDT	76.95	78.87	75.46	76.95	78.87	75.46	76.95	78.87	75.46	76.71	78.56	75.27
Penalties													
As US$25.00/unit)0.5	US$/SDT	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Sb US$10.00/unit)0.5	US$/SDT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
H20 1) US$1.00/SWT/%)12%	US$/SDT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2) US$50.00/wet car	US$/SDT	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61
Sub Total Penalties	US$/SDT	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61
Total Charges	US$/SDT	182.56	184.48	181.08	182.56	184.48	181.08	182.56	184.48	181.08	182.32	184.17	180.88
(Lead Conc)	US$/DMT	201.24	203.36	199.60	201.24	203.36	199.60	201.24	203.36	199.60	200.97	203.01	199.39
	CDN$/SDT	209.95	212.16	208.24	209.95	212.16	208.24	209.95	212.16	208.24	209.66	211.80	208.01
	CDN$/DMT	231.42	233.86	229.54	231.42	233.86	229.54	231.42	233.86	229.54	231.11	233.47	229.29

File: rednsr SAN Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 16-May-91

REDFERN - TULSEQUAH CHIEF - undiluted LEAD CONCENTRATE NET SMELTER RETURN - ASARCO SAMATOSUM - (Sheet 2 of 2)

	Units	A/B Lense base rec Feas Prices	H Lense base rec Feas Prices	Old Reserve base rec Feas Prices	A/B Lense base rec +20% Prices	H Lense base rec +20% Prices	Old Reserve base rec +20% Prices	A/B Lense base rec RedfernPrice	H Lense base rec RedfernPrice	Old Reserve base rec RedfernPrice	A/B Lense +2.5% pay.rec Feas Prices	H Lense +2.5% pay.rec Feas Prices	Old Reserve +2.5% pay.rec Feas Prices
LEAD CONCENTRATE - ASARCO (May 24, 1988)													
NET INVOICE VALUE (NIV)	US$/SDT	211.64	250.75	178.05	290.48	337.80	249.88	251.36	290.91	217.52	206.46	244.23	174.04
(Lead Conc)	US$/DMT	233.29	276.41	196.27	320.20	372.36	275.44	277.07	320.67	239.78	227.59	269.21	191.84
	CDN$/SDT	243.39	288.37	204.76	334.05	388.47	287.36	289.06	334.55	250.15	237.43	280.86	200.14
	CDN$/DMT	268.28	317.87	225.71	368.23	428.21	316.76	318.63	368.77	275.74	261.72	309.60	220.62
OTHER COSTS													
Freight 35.95 $CDN/WMT plus													
19.34 $us/SWT	US$/SDT	50.74	50.74	50.74	50.74	50.74	50.74	50.74	50.74	50.74	50.74	50.74	50.74
Insurance @ 0.030%NIV	US$/SDT	0.06	0.08	0.05	0.09	0.10	0.07	0.08	0.09	0.07	0.06	0.07	0.05
Representation @ $US0.40/SWT	US$/SDT	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Commission @ 1.00%NIV	US$/SDT	2.12	2.51	1.78	2.90	3.38	2.50	2.51	2.91	2.18	2.06	2.44	1.74
Loss @ 0.50%NIV	US$/SDT	1.06	1.25	0.89	1.45	1.69	1.25	1.26	1.45	1.09	1.03	1.22	0.87
Border Brokerage @ $US0.16/SWT	US$/SDT	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Pb Import Duty													
0.011 $US/kg pay.Pb	US$/SDT	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12
Customs Surcharge													
0.1088%*Proceeds	US$/SDT	0.23	0.27	0.19	0.31	0.36	0.27	0.27	0.31	0.23	0.22	0.26	0.18
Total Other Costs	US$/SDT	58.93	59.57	58.38	60.22	61.00	59.55	59.58	60.23	59.02	58.84	59.46	58.31
(Lead Conc)	US$/DMT	64.96	65.66	64.35	66.38	67.24	65.65	65.67	66.39	65.06	64.86	65.54	64.28
	CDN$/SDT	67.77	68.50	67.13	69.25	70.14	68.49	68.52	69.26	67.88	67.67	68.38	67.06
	CDN$/DMT	74.70	75.51	74.00	76.34	77.32	75.49	75.52	76.35	74.82	74.59	75.38	73.92
NET SMELTER RETURN (NSR)	US$/SDT	152.71	191.18	119.68	230.26	276.81	190.33	191.78	230.68	158.50	147.62	184.77	115.73
(Lead Conc)	US$/DMT	168.33	210.74	131.92	253.82	305.12	209.80	211.40	254.28	174.71	162.72	203.67	127.56
	CDN$/SDT	175.62	219.86	137.63	264.80	318.33	218.87	220.55	265.28	182.27	169.77	212.48	133.08
	CDN$/DMT	193.58	242.35	151.71	291.89	350.89	241.27	243.11	292.42	200.92	187.13	234.22	146.70

File: rednsr SAN Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 16-May-91

REDFERN - TULSEQUAH CHIEF - undiluted

ZINC CONCENTRATE NET SMELTER RETURN - COMINCO SANATOSUN - (Sheet 1 of 2)

	Units	A/B Lense base rec Feas Prices	H Lense base rec Feas Prices	Old Reserve base rec Feas Prices	A/B Lense base rec +20% Prices	H Lense base rec +20% Prices	Old Reserve base rec +20% Prices	A/B Lense base rec RedfernPrice	H Lense base rec RedfernPrice	Old Reserve base rec RedfernPrice	A/B Lense +2.5% pay.rec Feas Prices	H Lense +2.5% pay.rec Feas Prices	Old Reserve +2.5% pay.rec Feas Prices
ZINC CONCENTRATE - COMINCO (June 13, 1988)													
PAYABLE													
Zinc (units) -.15/ Fe													
and -.125/ 0.5 (SIO2)= 2.0													
and -.375/ 2.0 (SIO2)= 4.0													
and -1.125/ SiO2)4.0													
and *85%	lb/SDT	900.15	900.15	900.15	900.15	900.15	900.15	900.15	900.15	900.15	900.15	900.15	900.15
Silver -.2opst/ %Cu *85%													
min -1.5opst	oz/SDT	0.21	0.76	0.05	0.21	0.76	0.05	0.21	0.76	0.05	0.16	0.68	-0.00
Gold 85% min -.05opst	oz/SDT	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00
VALUE													
Zinc LME SHG	US$/SDT	495.08	495.08	495.08	594.10	594.10	594.10	545.55	545.55	545.55	495.08	495.08	495.08
Silver 97% HGH	US$/SDT	0.83	2.93	0.18	0.99	3.52	0.21	0.86	3.03	0.18	0.62	2.66	-0.01
Gold 98% London Final	US$/SDT	0.00	2.25	0.00	0.00	2.70	0.00	0.00	2.22	0.00	0.00	1.60	0.00
Total Metal Value	US$/SDT	495.91	500.27	495.26	595.09	600.32	594.31	546.40	550.80	545.73	495.70	499.33	495.07
(Zinc Conc)	US$/DMT	546.64	551.45	545.92	655.97	661.74	655.11	602.30	607.15	601.56	546.41	550.42	545.71
	CDN$/SDT	570.30	575.31	569.55	684.36	690.37	683.46	628.36	633.42	627.59	570.05	574.23	569.33
	CDN$/DMT	628.64	634.17	627.81	754.37	761.00	753.37	692.64	698.22	691.79	628.37	632.98	627.57
CHARGES													
Treatment Charge													
Base$ 230.00 $CDN/SDT	US$/SDT	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00
Zn Esc + $3.50/ Zn) CDN$0.81													
- $2.50/ Zn(CDN$0.81		-38.59	-38.59	-38.59	-11.09	-11.09	-11.09	-24.57	-24.57	-24.57	-38.59	-38.59	-38.59
Labour Esc +CDN$0.05/													
RATE 12) $22.97	US$/SDT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CPI Esc +CDN$0.60/point)150.5	US$/SDT	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
Sub Total Treatment Charge	US$/SDT	164.91	164.91	164.91	192.41	192.41	192.41	178.92	178.92	178.92	164.91	164.91	164.91

File: rednsr SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 16-May-91

REDFERN - TULSEQUAH CHIEF - undiluted ZINC CONCENTRATE NET SMELTER RETURN - COMINCO SAMATOSUM - (Sheet 2 of 2)

	Units	A/B Lense base rec Feas Prices	H Lense base rec Feas Prices	Old Reserve base rec Feas Prices	A/B Lense base rec +20% Prices	H Lense base rec +20% Prices	Old Reserve base rec +20% Prices	A/B Lense base rec RedfernPrice	H Lense base rec RedfernPrice	Old Reserve base rec RedfernPrice	A/B Lense +2.5% pay.rec Feas Prices	H Lense +2.5% pay.rec Feas Prices	Old Reserve +2.5% pay.rec Feas Prices
Penalties													
Fe CDN$1.00/ %Fe	US$/SDT	7.04	7.04	7.04	7.04	7.04	7.04	7.04	7.04	7.04	7.04	7.04	7.04
SiO2 CDN$0.50/%).50%	US$/SDT	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hg CDN$0.40/10ppm)100ppm	US$/SDT	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22
H2O CDN$0.50/%)8% (=10%													
plus CDN$1.50/%)10%	US$/SDT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub Total Penalties	US$/SDT	13.13	13.13	13.13	13.13	13.13	13.13	13.13	13.13	13.13	13.13	13.13	13.13
Total Charges	US$/SDT	178.04	178.04	178.04	205.54	205.54	205.54	192.05	192.05	192.05	178.04	178.04	178.04
(Zinc Conc)	US$/DMT	196.25	196.25	196.25	226.57	226.57	226.57	211.70	211.70	211.70	196.25	196.25	196.25
	CDN$/SDT	204.74	204.74	204.74	236.37	236.37	236.37	220.86	220.86	220.86	204.74	204.74	204.74
	CDN$/DMT	225.69	225.69	225.69	260.55	260.55	260.55	243.46	243.46	243.46	225.69	225.69	225.69
NET INVOICE VALUE (NIV)	US$/SDT	317.87	322.23	317.22	389.55	394.79	388.77	354.35	358.74	353.67	317.66	321.30	317.03
(Zinc Conc)	US$/DMT	350.39	355.20	349.67	429.41	435.17	428.54	390.60	395.44	389.85	350.16	354.16	349.46
	CDN$/SDT	365.55	370.57	364.80	447.99	454.00	447.09	407.50	412.56	406.72	365.31	369.49	364.58
	CDN$/DMT	402.95	408.47	402.12	493.82	500.45	492.82	449.19	454.76	448.33	402.68	407.29	401.88
OTHER COSTS													
Freight 100.00 $CDN/WMT	US$/SDT	83.92	83.92	83.92	83.92	83.92	83.92	83.92	83.92	83.92	83.92	83.92	83.92
Insurance @ 0.030%NIV	US$/SDT	0.10	0.10	0.10	0.12	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.10
Rep. 0.60 $CDN/SMT	US$/SDT	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Commission @ 1.00%NIV	US$/SDT	3.18	3.22	3.17	3.90	3.95	3.89	3.54	3.59	3.54	3.18	3.21	3.17
Loss @ 0.50%NIV	US$/SDT	1.59	1.61	1.59	1.95	1.97	1.94	1.77	1.79	1.77	1.59	1.61	1.59
Total Other Costs	US$/SDT	89.34	89.41	89.33	90.44	90.52	90.42	89.90	89.97	89.89	89.34	89.39	89.33
(Zinc Conc)	US$/DMT	98.48	98.55	98.47	99.69	99.78	99.68	99.09	99.17	99.08	98.48	98.54	98.47
	CDN$/SDT	102.74	102.82	102.73	104.00	104.09	103.99	103.38	103.46	103.37	102.74	102.80	102.73
	CDN$/DMT	113.25	113.34	113.24	114.64	114.74	114.63	113.96	114.04	113.95	113.25	113.32	113.24
NET SMELTER RETURN (NSR)	US$/SDT	228.53	232.82	227.89	299.12	304.27	298.35	264.45	268.78	263.79	228.32	231.90	227.70
(Zinc Conc)	US$/DMT	251.91	256.64	251.20	329.72	335.40	328.87	291.50	296.28	290.77	251.68	255.63	251.00
	CDN$/SDT	262.81	267.75	262.07	343.99	349.91	343.10	304.12	309.10	303.35	262.57	266.69	261.86
	CDN$/DMT	289.70	295.14	288.88	379.17	385.70	378.20	335.23	340.72	334.39	289.43	293.97	288.64

File: rednsr SAN Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 16-May-91

REDFERN - TULSEQUAH CHIEF - undiluted

GOLD CONCENTRATE NET SMELTER RETURN - (GUESSTIMATED TERMS) (Sheet 1 of 2)

	Units	A/B Lense base rec Feas Prices	H Lense base rec Feas Prices	Old Reserve base rec Feas Prices	A/B Lense base rec +20% Prices	H Lense base rec +20% Prices	Old Reserve base rec +20% Prices	A/B Lense base rec RedfernPrice	H Lense base rec RedfernPrice	Old Reserve base rec RedfernPrice	A/B Lense +2.5% pay.rec Feas Prices	H Lense +2.5% pay.rec Feas Prices	Old Reserve +2.5% pay.rec Feas Prices
AU CONCENTRATE - guesstimated terms													
VALUES													
Silver	US$/SDT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gold 98 % @ London Final	US$/SDT	42876.10	42876.10	42876.10	51451.32	51451.32	51451.32	42304.42	42304.42	42304.42	42876.10	42876.10	42876.10
Total Metal Value	US$/SDT	42876.10	42876.10	42876.10	51451.32	51451.32	51451.32	42304.42	42304.42	42304.42	42876.10	42876.10	42876.10
(Au Conc - Guesstimated)	US$/DMT	47262.32	47262.32	47262.32	56714.79	56714.79	56714.79	46632.16	46632.16	46632.16	47262.32	47262.32	47262.32
	CDN$/SDT	49307.51	49307.51	49307.51	59169.01	59169.01	59169.01	48650.08	48650.08	48650.08	49307.51	49307.51	49307.51
	CDN$/DMT	54351.67	54351.67	54351.67	65222.00	65222.00	65222.00	53626.98	53626.98	53626.98	54351.67	54351.67	54351.67
CHARGES													
Treatment Charge													
base $500 $0	US$/DMT	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
extra for bags 28.00	US$/DMT	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00
Sub-Total Treatment Charge	US$/DMT	528.00	528.00	528.00	528.00	528.00	528.00	528.00	528.00	528.00	528.00	528.00	528.00
Refining													
Au 10.00 US$/oz pay.	US$/DMT	1260.33	1260.33	1260.33	1260.33	1260.33	1260.33	1260.33	1260.33	1260.33	1260.33	1260.33	1260.33
Ag 30.25 UScent/oz pay.	US$/DMT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub-Total Refining	US$/DMT	1260.33	1260.33	1260.33	1260.33	1260.33	1260.33	1260.33	1260.33	1260.33	1260.33	1260.33	1260.33
Penalties													
As US$4.15/ 0.1%) 0.1%	US$/DMT	78.85	78.85	78.85	78.85	78.85	78.85	78.85	78.85	78.85	78.85	78.85	78.85
Hg US$11.00/ 100ppm) 100ppm	US$/DMT	99.00	99.00	99.00	99.00	99.00	99.00	99.00	99.00	99.00	99.00	99.00	99.00
Sub-Total Penalties	US$/DMT	177.85	177.85	177.85	177.85	177.85	177.85	177.85	177.85	177.85	177.85	177.85	177.85
Total Charges	US$/SDT	1783.71	1783.71	1783.71	1783.71	1783.71	1783.71	1783.71	1783.71	1783.71	1783.71	1783.71	1783.71
(Au Conc - Guesstimated)	US$/DMT	1966.18	1966.18	1966.18	1966.18	1966.18	1966.18	1966.18	1966.18	1966.18	1966.18	1966.18	1966.18
	CDN$/SDT	2051.26	2051.26	2051.26	2051.26	2051.26	2051.26	2051.26	2051.26	2051.26	2051.26	2051.26	2051.26
	CDN$/DMT	2261.11	2261.11	2261.11	2261.11	2261.11	2261.11	2261.11	2261.11	2261.11	2261.11	2261.11	2261.11

File: rednsr SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 16-May-91

REDFERN - TULSEQUAH CHIEF - undiluted GOLD CONCENTRATE NET SMELTER RETURN - (GUESSTIMATED TERMS) (Sheet 2 of 2)

	Units	A/B Lense base rec Feas Prices	H Lense base rec Feas Prices	Old Reserve base rec Feas Prices	A/B Lense base rec +20% Prices	H Lense base rec +20% Prices	Old Reserve base rec +20% Prices	A/B Lense base rec RedfernPrice	H Lense base rec RedfernPrice	Old Reserve base rec RedfernPrice	A/B Lense +2.5% pay.rec Feas Prices	H Lense +2.5% pay.rec Feas Prices	Old Reserve +2.5% pay.rec Feas Prices
AU CONCENTRATE - guesstimated terms													
NET INVOICE VALUE (NIV)	US$/SDT	41092.39	41092.39	41092.39	49667.61	49667.61	49667.61	40520.71	40520.71	40520.71	41092.39	41092.39	41092.39
(Au Conc - Guesstimated)	US$/DMT	45296.14	45296.14	45296.14	54748.61	54748.61	54748.61	44665.98	44665.98	44665.98	45296.14	45296.14	45296.14
	CDN$/SDT	47256.25	47256.25	47256.25	57117.75	57117.75	57117.75	46598.82	46598.82	46598.82	47256.25	47256.25	47256.25
	CDN$/DMT	52090.56	52090.56	52090.56	62960.90	62960.90	62960.90	51365.88	51365.88	51365.88	52090.56	52090.56	52090.56
OTHER COSTS													
Freight 134.51 $CDN/WMT	US$/SDT	112.88	112.88	112.88	112.88	112.88	112.88	112.88	112.88	112.88	112.88	112.88	112.88
Ins. 0.05813% OF 110%NIV	US$/SDT	26.28	26.28	26.28	31.76	31.76	31.76	25.91	25.91	25.91	26.28	26.28	26.28
Rep. 16.82 $CDN/WMT	US$/SDT	14.12	14.12	14.12	14.12	14.12	14.12	14.12	14.12	14.12	14.12	14.12	14.12
Commission @ 0.3%NIV	US$/SDT	123.28	123.28	123.28	149.00	149.00	149.00	121.56	121.56	121.56	123.28	123.28	123.28
Loss 0.00 % NIV	US$/SDT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Other Costs	US$/SDT	276.55	276.55	276.55	307.76	307.76	307.76	274.47	274.47	274.47	276.55	276.55	276.55
(Au Conc - Guesstimated)	US$/DMT	304.84	304.84	304.84	339.24	339.24	339.24	302.55	302.55	302.55	304.84	304.84	304.84
	CDN$/SDT	318.03	318.03	318.03	353.92	353.92	353.92	315.64	315.64	315.64	318.03	318.03	318.03
	CDN$/DMT	350.57	350.57	350.57	390.13	390.13	390.13	347.93	347.93	347.93	350.57	350.57	350.57
NET SMELTER RETURN (NSR)	US$/SDT	40815.84	40815.84	40815.84	49359.85	49359.85	49359.85	40246.24	40246.24	40246.24	40815.84	40815.84	40815.84
(Au Conc - Guesstimated)	US$/DMT	44991.30	44991.30	44991.30	54409.36	54409.36	54409.36	44363.43	44363.43	44363.43	44991.30	44991.30	44991.30
	CDN$/SDT	46938.22	46938.22	46938.22	56763.83	56763.83	56763.83	46283.18	46283.18	46283.18	46938.22	46938.22	46938.22
	CDN$/DMT	51740.00	51740.00	51740.00	62570.77	62570.77	62570.77	51017.94	51017.94	51017.94	51740.00	51740.00	51740.00

File: rednsr SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 16-May-91

REDFERN - TULSEQUAH CHIEF - undiluted

NET SMELTER SUMMARY

	Units	A/B Lense base rec Feas Prices	H Lense base rec Feas Prices	Old Reserve base rec Feas Prices	A/B Lense base rec +20% Prices	H Lense base rec +20% Prices	Old Reserve base rec +20% Prices	A/B Lense base rec RedfernPrice	H Lense base rec RedfernPrice	Old Reserve base rec RedfernPrice	A/B Lense +2.5% pay.rec Feas Prices	H Lense +2.5% pay.rec Feas Prices	Old Reserve +2.5% pay.rec Feas Prices
AU GUESSTIMATED													
Payable Metal Value	CDN$	9.14 26262853	45868843	6691844	31515424	55042612	8030213	25912682	45257259	6602620	28526893	49823054	7268727
less Total Smelter Charges	CDN$	.39 1147200	2003618	292310	1147200	2003618	292310	1147200	2003618	292310	1246096	2176344	317509
less Transport/Other	CDN$	.06 177866	310648	45321	197938	345704	50435	176528	308311	44980	193199	337428	49228
sub-total NSR	CDN$	8.68 24937788	43554577	6354214	30170286	52693289	7687468	24588955	42945330	6265330	27087597	47309282	6901991
less contingency (0% NSR)	CDN$	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL NSR - Au Guesstimated	CDN$	8.68 24937788	43554577	6354214	30170286	52693289	7687468	24588955	42945330	6265330	27087597	47309282	6901991
CU-AG - DOWA CONTRACT - 100 % of Cu-Ag Concentrate													
Payable Metal Value	CDN$	48.84 140242204	211115001	32207152	168298645	253338001	38648583	163515555	241884516	37045764	143713300	216112451	32981797
less Total Smelter Charges	CDN$	20.37 58504957	78624521	13094094	58504957	78624521	13094094	58504957	78624521	13094094	60885156	80741125	13425953
less Transport/Other	CDN$	10.02 28782748	38183761	5981391	29184441	38788453	6073642	29116855	38624423	6050687	29683446	39373066	6168299
sub-total NSR	CDN$	18.44 52954499	94306720	13131667	80601247	135925027	19480847	75894543	124635572	17900983	53944698	95998260	13387545
less contingency (0% NSR)	CDN$	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL NSR - DOWA	CDN$	18.44 52954499	94306720	13131667	80601247	135925027	19480847	75894543	124635572	17900983	53944698	95998260	13387545
ZN CONCENTRATE - COMINCO CONTRACT													
Payable Metal Value	CDN$	58.48 167928085	230146036	50018921	201513702	276175243	60022706	185025233	253391221	55116034	173377973	237271976	51644360
less Total Smelter Charges	CDN$	22.04 63302951	86000972	18880219	73888752	99284719	21796466	68286128	92770925	20366460	65385285	88829951	19501279
less Transport/Other	CDN$	11.06 31765491	43187598	9473055	32155443	43723816	9589148	31963914	43457452	9532201	32809218	44601100	9784349
sub-total NSR	CDN$	25.37 72859644	100957466	21665647	96277507	133166708	28637092	84775192	117162844	25217372	75183470	103840925	22358732
less contingency (0% NSR)	CDN$	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL - ZN CONCENTRATE NSR	CDN$	25.37 72859644	100957466	21665647	96277507	133166708	28637092	84775192	117162844	25217372	75183470	103840925	22358732
PB CONCENTRATE - ASARCO CONTRACT													
Payable Metal Value	CDN$/DMT	9.09 26114849	40409420	8017690	31337818	48491304	9621228	28746150	44137659	8898833	26675645	41195365	8206678
less Total Smelter Charges	CDN$/DMT	4.42 12698946	17984762	4244694	12698946	17984762	4244694	12698946	17984762	4244694	13134848	18595671	4391593
less Transport/Other	CDN$/DMT	1.42 4099010	5807170	1368460	4188884	5946238	1396053	4144288	5871323	1383622	4239293	6003774	1415736
sub-total NSR	CDN$	3.24 9316893	16617488	2404536	14449989	24560304	3980481	11902917	20281574	3270517	9301504	16595921	2399350
less contingency (0% NSR)	CDN$	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL - PB CONCENTRATE NSR	CDN$	3.24 9316893	16617488	2404536	14449989	24560304	3980481	11902917	20281574	3270517	9301504	16595921	2399350
TOTAL NSR - MINE	CDN$	160068823	255436251	43556063	221499029	346345329	59785889	197161606	305025319	52654202	165517268	263744380	45047618

55.74

APPENDIX "D"

NET SMELTER RETURN CALCULATIONS - HOLE X HOLE

File: rednsr1 SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 13-May-91

REDFERN - TULSEQUAH CHIEF - undiluted REDNSR1 PRODUCTION/FEED GRADE SCHEDULE

		A/B Lens 87-1	A/B Lens 87-5	A/B Lens 88-2	A/B Lens 88-3	A/B Lens 88-4	A/B Lens 88-5	A/B Lens 88-7	A/B Lens 88-8	A/B Lens 89-12	A/B Lens 89-15	A/B Lens 89-16	A/B Lens 89-18
	Units	Feas Prices	Feas Prices	Feas Prices	Feas Prices	Feas Prices	Feas Prices	Feas Prices	Feas Prices	Feas Prices	Feas Prices	Feas Prices	Feas Prices

NOTES:

1) - Undiluted grades used as it is felt that past experience indicated that higher grade areas(stopes) could be delineated. At this stage, I am more interested in determining the minimum mineable tonneage required to make this thing go. Then Alex and Ian can evaluate the probabilities of it being there within either the currently defined "Geological Reserve" or in the property.

2) - I am concerned that in the wider areas the rock conditions will be negative. We did not see immediate HW/FW core but Mines Inspector Reports and Old Cominco reports indicate that caving occurred uncontrollaby below 5400 ft level. Above this, (majority of old workings), the tons/vert. ft. indicates a quite narrow mining width. Therefore,the shrinkage stope stability was okay. The reason they have so many tons now is the much wider zones being predicted.
Therefore, we must be cautious as I suspect that currently defined tons are probably 50% to 100% higher than mineable tonnes at previous grades

MILL FEED SCHEDULE

FEED GRADES	Cu	%	1.37	1.31	0.51	3.86	0.61	0.72	0.72	5.04	2.23	0.78	0.68	0.87
	Zn	%	8.00	6.03	11.63	2.46	3.36	4.19	5.06	3.03	3.79	7.82	8.19	11.87
	Pb	%	2.78	1.08	1.55	0.21	0.60	0.63	1.26	0.18	0.48	1.13	1.36	2.16
	Ag	g/t	223	85	60	55	64	51	93	63	46	29	246	178
	Au	g/t	6.34	2.40	0.51	2.78	2.23	1.27	1.92	2.85	1.17	1.61	2.95	2.78
TONNAGE MILLED			100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000

File: rednsr1 SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 13-May-91

REDFERN - TULSEQUAH CHIEF - undiluted REDNSR1 METAL PRICES - NET SMELTER RETURNS

	Units	A/B Lens 87-1 Feas Prices	A/B Lens 87-5 Feas Prices	A/B Lens 88-2 Feas Prices	A/B Lens 88-3 Feas Prices	A/B Lens 88-4 Feas Prices	A/B Lens 88-5 Feas Prices	A/B Lens 88-7 Feas Prices	A/B Lens 88-8 Feas Prices	A/B Lens 89-12 Feas Prices	A/B Lens 89-15 Feas Prices	A/B Lens 89-16 Feas Prices	A/B Lens 89-18 Feas Prices
METAL PRICES													
Cu	US$/lb	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Zn	US$/lb	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Pb	US$/lb	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Ag	US$/oz	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Au	US$/oz	375.00	375.00	375.00	375.00	375.00	375.00	375.00	375.00	375.00	375.00	375.00	375.00
Sb	US$/lb	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
COPPER-SILVER CONCENTRATE SALES DISTRIBUTION													
TO DOWA, JAPAN	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
TO SGM, BELGIUM	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EXCHANGE RATE	CDN$/US$	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500
CONSUMER PRICE INDEX (CPI)	POINTS	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2
COMINCO LABOUR - ZINC CONC	CDN$/SDT	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20
NET SMELTER RETURNS													
Cu-Ag Conc	CDN $	49	18	3	22	16	10	16	25	11	8	33	25
Zn Conc	CDN $	34	23	44	11	14	16	20	13	14	29	33	46
Pb Conc	CDN $	8	3	1	3	3	2	3	3	2	2	6	5
Au Conc	CDN $	24	9	2	10	8	5	7	11	4	6	11	10
Total Net Smelter Return	CDN $	91	45	49	36	33	28	39	41	27	39	72	76
UNIT SMELTER RETURNS													
Cu-Ag Conc	CDN$/tonne milled	48.54	18.28	3.49	22.32	16.00	9.87	16.10	24.56	10.86	8.20	33.18	25.05
Zn Conc	CDN$/tonne milled	34.17	23.16	43.80	11.05	13.76	16.03	19.62	13.11	14.49	29.35	32.57	45.69
Pb Conc	CDN$/tonne milled	8.46	3.21	1.27	3.07	2.77	1.80	2.96	3.27	1.64	1.60	6.46	5.02
Au Conc	CDN$/tonne milled	23.73	8.98	1.92	10.39	8.34	4.75	7.18	10.65	4.36	6.03	11.03	10.39
Total Unit Returns	CDN$/tonne milled	114.90	53.64	50.48	46.84	40.87	32.45	45.86	51.59	31.36	45.18	83.24	86.15

File: rednsr1 SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 13-May-91

REDFERN - TULSEQUAH CHIEF - undiluted REDNSR1 CONCENTRATE DETAILS - SHEET 1

		Units	A/B Lens 87-1 Feas Prices	A/B Lens 87-5 Feas Prices	A/B Lens 88-2 Feas Prices	A/B Lens 88-3 Feas Prices	A/B Lens 88-4 Feas Prices	A/B Lens 88-5 Feas Prices	A/B Lens 88-7 Feas Prices	A/B Lens 88-8 Feas Prices	A/B Lens 89-12 Feas Prices	A/B Lens 89-15 Feas Prices	A/B Lens 89-16 Feas Prices	A/B Lens 89-18 Feas Prices
METAL DISTRIBUTIONS TO CONCENTRATES														
Cu-Ag Conc	Cu	%	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00
	Zn	%	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
	Pb	%	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
	Ag	%	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00
	Au	%	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00
Zn Conc	Cu	%	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
	Zn	%	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00
	Pb	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
	Ag	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
	Au	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Pb Conc	Cu	%	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
	Zn	%	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	Pb	%	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00
	Ag	%	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
	Au	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Au Conc.	Cu	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Zn	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Pb	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Ag	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Au	%	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00
Tailings	Cu	%	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
	Zn	%	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
	Pb	%	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
	Ag	%	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
	Au	%	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
MOISTURE CONTENT		%	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
CONCENTRATE TONNAGES (DMT)														
Cu-Ag Conc		tonnes	5153.8	4928.1	1918.6	14521.0	2294.8	2708.6	2708.6	18960.0	8389.0	2934.3	2558.1	3272.9
Zn Conc		tonnes	11259.3	8486.7	16368.1	3462.2	4728.9	5897.0	7121.5	4264.4	5334.1	11005.9	11526.7	16705.9
Pb Conc		tonnes	4324.4	1680.0	2411.1	326.7	933.3	980.0	1960.0	280.0	746.7	1757.8	2115.6	3360.0
Au Conc		tonnes	46.0	17.4	3.7	20.1	16.2	9.2	13.9	20.6	8.5	11.7	21.4	20.1
Tailings		tonnes	79217	84888	79298	81670	92027	90405	88196	76475	85522	84290	83778	76641

File: rednsr1 SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 13-May-91

REDFERN - TULSEQUAH CHIEF - undiluted REDNSR1 CONCENTRATE DETAILS - SHEET 2

			Units	A/B Lens 87-1 Feas Prices	A/B Lens 87-5 Feas Prices	A/B Lens 88-2 Feas Prices	A/B Lens 88-3 Feas Prices	A/B Lens 88-4 Feas Prices	A/B Lens 88-5 Feas Prices	A/B Lens 88-7 Feas Prices	A/B Lens 88-8 Feas Prices	A/B Lens 89-12 Feas Prices	A/B Lens 89-15 Feas Prices	A/B Lens 89-16 Feas Prices	A/B Lens 89-18 Feas Prices
CONCENTRATE GRADES (Payables)															
Cu-Ag Conc	Cu	(fixed)	%	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00
	Zn	(Calc)	%	15.52	12.24	60.62	1.69	14.64	15.47	18.68	1.60	4.52	26.65	32.02	36.27
	Pb	(Calc)	%	7.01	2.85	10.50	0.19	3.40	3.02	6.05	0.12	0.74	5.01	6.91	8.58
	Ag	(Calc)	g/t	2940.33	1173.23	2138.68	256.88	1909.99	1291.11	2332.60	225.02	369.62	667.40	6543.63	3704.14
	Au	(Calc)	g/t	48.00	18.99	10.45	7.46	37.87	18.27	27.64	5.85	5.42	21.42	44.95	33.09
Zn Conc	Cu	(Calc)	%	0.61	0.77	0.16	5.57	0.64	0.61	0.51	5.91	2.09	0.35	0.29	0.26
	Zn	(Fixed)	%	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
	Pb	(Calc)	%	1.48	0.76	0.57	0.36	0.76	0.64	1.06	0.25	0.54	0.62	0.71	0.78
	Ag	(Calc)	g/t	118.76	60.11	22.12	95.06	81.78	52.33	78.28	88.28	51.29	15.70	128.14	64.03
	Au	(Calc)	g/t	3.38	1.70	0.19	4.81	2.83	1.29	1.62	4.00	1.31	0.88	1.53	1.00
Pb Conc	Cu	(Calc)	%	2.22	5.46	1.48	82.71	4.58	5.14	2.57	126.00	20.91	3.11	2.25	1.81
	Zn	(Calc)	%	5.55	10.77	14.47	22.59	10.80	12.83	7.74	32.46	15.23	13.35	11.61	10.60
	Pb	(Fixed)	%	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
	Ag	(Calc)	g/t	721.46	708.55	350.37	2350.96	966.83	734.68	663.66	3137.06	854.98	229.37	1629.03	742.84
	Au	(Calc)	g/t	8.80	8.57	1.28	51.01	14.33	7.77	5.88	60.98	9.37	5.50	8.36	4.96
Au Conc	Cu	(calc)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Zn	(Calc)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Pb	(Calc)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Ag	(Calc)	g/t	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Au	(Fixed)	g/t	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00
Tailings	Cu	(Calc)	%	0.16	0.14	0.06	0.43	0.06	0.07	0.07	0.59	0.23	0.08	0.07	0.10
	Zn	(Calc)	%	1.11	0.78	1.61	0.33	0.40	0.51	0.63	0.44	0.49	1.02	1.08	1.70
	Pb	(Calc)	%	0.39	0.14	0.22	0.03	0.07	0.08	0.16	0.03	0.06	0.15	0.18	0.31
	Ag	(Calc)	g/t	34	12	9	8	8	7	13	10	6	4	35	28
	Au	(Calc)	g/t	1.60	0.57	0.13	0.68	0.48	0.28	0.44	0.74	0.27	0.38	0.70	0.72

File: rednsr2 SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 13-May-91

REDFERN - TULSEQUAH CHIEF - undiluted PRODUCTION/FEED GRADE SCHEDULE

			A/B Lens 87-1	A/B Lens 87-5	A/B Lens 88-2	A/B Lens 88-3	A/B Lens 88-4	A/B Lens 88-5	A/B Lens 88-7	A/B Lens 88-8	A/B Lens 89-12	A/B Lens 89-15	A/B Lens 89-16	A/B Lens 89-18
		Units	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr

NOTES:

1) - Undiluted grades used as it is felt that past experience indicated that higher grade areas(stopes) could be delineated. At this stage, I am more interested in determining the minimum mineable tonneage required to make this thing go. Then Alex and Ian can evaluate the probabilities of it being there within either the currently defined "Geological Reserve" or in the property.

2) - I am concerned that in the wider areas the rock conditions will be negative. We did not see immediate HW/FW core but Mines Inspector Reports and Old Cominco reports indicate that caving occurred uncontrollaby below 5400 ft level. Above this, (majority of old workings), the tons/vert. ft. indicates a quite narrow mining width. Therefore,the shrinkage stope stability was okay. The reason they have so many tons now is the much wider zones being predicted.
Therefore, we must be cautious as I suspect that currently defined tons are probably 50% to 100% higher than mineable tonnes at previous grades

MILL FEED SCHEDULE

FEED GRADES	Cu	%	1.37	1.31	0.51	3.86	0.61	0.72	0.72	5.04	2.23	0.78	0.68	0.87
	Zn	%	8.00	6.03	11.63	2.46	3.36	4.19	5.06	3.03	3.79	7.82	8.19	11.87
	Pb	%	2.78	1.08	1.55	0.21	0.60	0.63	1.26	0.18	0.48	1.13	1.36	2.16
	Ag	g/t	223	85	60	55	64	51	93	63	46	29	246	178
	Au	g/t	6.34	2.40	0.51	2.78	2.23	1.27	1.92	2.85	1.17	1.61	2.95	2.78
TONNAGE MILLED			100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000

File: rednsr2 SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 13-May-91

REDFERN - TULSEQUAH CHIEF - undiluted METAL PRICES - NET SMELTER RETURNS

		A/B Lens 87-1		A/B Lens 87-5		A/B Lens 88-2		A/B Lens 88-3		A/B Lens 88-4		A/B Lens 88-5		A/B Lens 88-7		A/B Lens 88-8		A/B Lens 89-12		A/B Lens 89-15		A/B Lens 89-16		A/B Lens 89-18	
	Units	Feas	+20% Pr	Feas	+20% Pr	Feas	+20% Pr	Feas	+20% Pr	Feas	+20% Pr	Feas	+20% Pr	Feas	+20% Pr	Feas	+20% Pr	Feas	+20% Pr	Feas	+20% Pr	Feas	+20% Pr	Feas	+20% Pr
METAL PRICES																									
Cu	US$/lb	1.14		1.14		1.14		1.14		1.14		1.14		1.14		1.14		1.14		1.14		1.14		1.14	
Zn	US$/lb	0.66		0.66		0.66		0.66		0.66		0.66		0.66		0.66		0.66		0.66		0.66		0.66	
Pb	US$/lb	0.36		0.36		0.36		0.36		0.36		0.36		0.36		0.36		0.36		0.36		0.36		0.36	
Ag	US$/oz	4.80		4.80		4.80		4.80		4.80		4.80		4.80		4.80		4.80		4.80		4.80		4.80	
Au	US$/oz	450.00		450.00		450.00		450.00		450.00		450.00		450.00		450.00		450.00		450.00		450.00		450.00	
Sb	US$/lb	0.84		0.84		0.84		0.84		0.84		0.84		0.84		0.84		0.84		0.84		0.84		0.84	
COPPER-SILVER CONCENTRATE SALES DISTRIBUTION																									
TO DOWA, JAPAN	%	100.0		100.0		100.0		100.0		100.0		100.0		100.0		100.0		100.0		100.0		100.0		100.0	
TO SGM, BELGIUM	%	0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	
EXCHANGE RATE	CDN$/US$	1.1500		1.1500		1.1500		1.1500		1.1500		1.1500		1.1500		1.1500		1.1500		1.1500		1.1500		1.1500	
CONSUMER PRICE INDEX (CPI)	POINTS	157.2		157.2		157.2		157.2		157.2		157.2		157.2		157.2		157.2		157.2		157.2		157.2	
COMINCO LABOUR - ZINC CONC	CDN$/SDT	21.20		21.20		21.20		21.20		21.20		21.20		21.20		21.20		21.20		21.20		21.20		21.20	
NET SMELTER RETURNS																									
Cu-Ag Conc	CDN $	6412158		2702093		697153		3998914		2167629		1470476		2238321		4665986		2087861		1318068		4326130		3435607	
Zn Conc	CDN $	4473346		3060681		5797766		1441238		1807274		2118963		2590248		1714940		1915742		3886446		4289858		6036008	
Pb Conc	CDN $	1285651		490211		300565		390709		391930		277842		477419		411730		243900		299826		912013		812360	
Au Conc	CDN $	2871192		1086397		232799		1257117		1008797		574238		869118		1288156		527679		729438		1334716		1257117	
Total Net Smelter Return	CDN $	12171155		6252985		6795484		5830861		4366833		3867281		5305988		6792656		4247503		5504340		9528001		10283975	
UNIT SMELTER RETURNS																									
Cu-Ag Conc	CDN$/tonne milled	64.12		27.02		6.97		39.99		21.68		14.70		22.38		46.66		20.88		13.18		43.26		34.36	
Zn Conc	CDN$/tonne milled	44.73		30.61		57.98		14.41		18.07		21.19		25.90		17.15		19.16		38.86		42.90		60.36	
Pb Conc	CDN$/tonne milled	12.86		4.90		3.01		3.91		3.92		2.78		4.77		4.12		2.44		3.00		9.12		8.12	
Au Conc	CDN$/tonne milled	28.71		10.86		2.33		12.57		10.09		5.74		8.69		12.88		5.28		7.29		13.35		12.57	
Total Unit Returns	CDN$/tonne milled	150.42		73.39		70.28		70.88		53.76		44.42		61.75		80.81		47.75		62.34		108.63		115.41	

File: rednsr2 SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 13-May-91

REDFERN - TULSEQUAH CHIEF - undiluted CONCENTRATE DETAILS - SHEET 1

			A/B Lens 87-1	A/B Lens 87-5	A/B Lens 88-2	A/B Lens 88-3	A/B Lens 88-4	A/B Lens 88-5	A/B Lens 88-7	A/B Lens 88-8	A/B Lens 89-12	A/B Lens 89-15	A/B Lens 89-16	A/B Lens 89-18
		Units	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr
METAL DISTRIBUTIONS TO CONCENTRATES														
Cu-Ag Conc	Cu	%	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00
	Zn	%	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
	Pb	%	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
	Ag	%	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00
	Au	%	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00
Zn Conc	Cu	%	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
	Zn	%	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00
	Pb	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
	Ag	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
	Au	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Pb Conc	Cu	%	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
	Zn	%	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	Pb	%	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00
	Ag	%	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
	Au	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Au Conc.	Cu	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Zn	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Pb	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Ag	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Au	%	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00
Tailings	Cu	%	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
	Zn	%	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
	Pb	%	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
	Ag	%	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
	Au	%	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
MOISTURE CONTENT		%	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
CONCENTRATE TONNAGES (DMT)														
Cu-Ag Conc		tonnes	5153.8	4928.1	1918.6	14521.0	2294.8	2708.6	2708.6	18960.0	8389.0	2934.3	2558.1	3272.9
Zn Conc		tonnes	11259.3	8486.7	16368.1	3462.2	4728.9	5897.0	7121.5	4264.4	5334.1	11005.9	11526.7	16705.9
Pb Conc		tonnes	4324.4	1680.0	2411.1	326.7	933.3	980.0	1960.0	280.0	746.7	1757.8	2115.6	3360.0
Au Conc		tonnes	46.0	17.4	3.7	20.1	16.2	9.2	13.9	20.6	8.5	11.7	21.4	20.1
Tailings		tonnes	79217	84888	79298	81670	92027	90405	88196	76475	85522	84290	83778	76641

File: rednsr2 SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 13-May-91

REDFERN - TULSEQUAH CHIEF - undiluted CONCENTRATE DETAILS - SHEET 2

			Units	A/B Lens 87-1 Feas	A/B Lens 87-1 +20% Pr	A/B Lens 87-5 Feas	A/B Lens 87-5 +20% Pr	A/B Lens 88-2 Feas	A/B Lens 88-2 +20% Pr	A/B Lens 88-3 Feas	A/B Lens 88-3 +20% Pr	A/B Lens 88-4 Feas	A/B Lens 88-4 +20% Pr	A/B Lens 88-5 Feas	A/B Lens 88-5 +20% Pr	A/B Lens 88-7 Feas	A/B Lens 88-7 +20% Pr	A/B Lens 88-8 Feas	A/B Lens 88-8 +20% Pr	A/B Lens 89-12 Feas	A/B Lens 89-12 +20% Pr	A/B Lens 89-15 Feas	A/B Lens 89-15 +20% Pr	A/B Lens 89-16 Feas	A/B Lens 89-16 +20% Pr	A/B Lens 89-18 Feas	A/B Lens 89-18 +20% Pr
CONCENTRATE GRADES (Payables)																										
Cu-Ag Conc	Cu	(fixed)	%	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00
	Zn	(Calc)	%	15.52	12.24	60.62	1.69	14.64	15.47	18.68	1.60	4.52	26.65	32.02	36.27											
	Pb	(Calc)	%	7.01	2.85	10.50	0.19	3.40	3.02	6.05	0.12	0.74	5.01	6.91	8.58											
	Ag	(Calc)	g/t	2940.33	1173.23	2138.68	256.88	1909.99	1291.11	2332.60	225.02	369.62	667.40	6543.63	3704.14											
	Au	(Calc)	g/t	48.00	18.99	10.45	7.46	37.87	18.27	27.64	5.85	5.42	21.42	44.95	33.09											
Zn Conc	Cu	(Calc)	%	0.61	0.77	0.16	5.57	0.64	0.61	0.51	5.91	2.09	0.35	0.29	0.26											
	Zn	(Fixed)	%	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00											
	Pb	(Calc)	%	1.48	0.76	0.57	0.36	0.76	0.64	1.06	0.25	0.54	0.62	0.71	0.78											
	Ag	(Calc)	g/t	118.76	60.11	22.12	95.06	81.78	52.33	78.28	88.28	51.29	15.70	128.14	64.03											
	Au	(Calc)	g/t	3.38	1.70	0.19	4.81	2.83	1.29	1.62	4.00	1.31	0.88	1.53	1.00											
Pb Conc	Cu	(Calc)	%	2.22	5.46	1.48	82.71	4.58	5.14	2.57	126.00	20.91	3.11	2.25	1.81											
	Zn	(Calc)	%	5.55	10.77	14.47	22.59	10.80	12.83	7.74	32.46	15.23	13.35	11.61	10.60											
	Pb	(Fixed)	%	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00											
	Ag	(Calc)	g/t	721.46	708.55	350.37	2350.96	966.83	734.68	663.66	3137.06	854.98	229.37	1629.03	742.84											
	Au	(Calc)	g/t	8.80	8.57	1.28	51.01	14.33	7.77	5.88	60.98	9.37	5.50	8.36	4.96											
Au Conc	Cu	(calc)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00											
	Zn	(Calc)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00											
	Pb	(Calc)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00											
	Ag	(Calc)	g/t	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00											
	Au	(Fixed)	g/t	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00											
Tailings	Cu	(Calc)	%	0.16	0.14	0.06	0.43	0.06	0.07	0.07	0.59	0.23	0.08	0.07	0.10											
	Zn	(Calc)	%	1.11	0.78	1.61	0.33	0.40	0.51	0.63	0.44	0.49	1.02	1.08	1.70											
	Pb	(Calc)	%	0.39	0.14	0.22	0.03	0.07	0.08	0.16	0.03	0.06	0.15	0.18	0.31											
	Ag	(Calc)	g/t	34	12	9	8	8	7	13	10	6	4	35	28											
	Au	(Calc)	g/t	1.60	0.57	0.13	0.68	0.48	0.28	0.44	0.74	0.27	0.38	0.70	0.72											

File: rednsr2 SAN Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 13-May-91

REDFERN - TULSEQUAH CHIEF - undiluted CONCENTRATE DETAILS - SHEET 3

			A/B Lens 87-1	A/B Lens 87-5	A/B Lens 88-2	A/B Lens 88-3	A/B Lens 88-4	A/B Lens 88-5	A/B Lens 88-7	A/B Lens 88-8	A/B Lens 89-12	A/B Lens 89-15	A/B Lens 89-16	A/B Lens 89-18
		Units	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr
CONCENTRATE GRADES (Penalty Items)														
Cu-Ag Conc	Pb	%	7.0	2.8	10.5	0.2	3.4	3.0	6.0	0.1	0.7	5.0	6.9	8.6
	Zn	%	15.5	12.2	60.6	1.7	14.6	15.5	18.7	1.6	4.5	26.7	32.0	36.3
	As	%	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
	Sb	%	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	Hg	g/t	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00
Zn Conc	Fe	%	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	SiO2	%	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
	MgO	%	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
	CaO	%	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
	Hg	g/t	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0
Pb Conc	As	%	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
	Sb	%	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
	Al2O3	%	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
	Fe	%	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	S	%	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
	Hg	g/t	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
Au Conc.														
	? ? As	%	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	? ? Hg	g/t	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	? ? ? ?													
	? ? ? ?													
	? ? ? ?													

File: rednsr3 SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 13-May-91

REDFERN - TULSEQUAH CHIEF - undiluted PRODUCTION/FEED GRADE SCHEDULE

		A/B Lens	A/B Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	
		89-20	XX	89-13	89-15	89-18	88-19	89-21	90-22	90-23	90-24	90-25	
	Units	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES

NOTES:

1) - Undiluted grades used as it is felt that past experience indicated that higher grade areas(stopes) could be delineated. At this stage, I am more interested in determining the minimum mineable tonneage required to make this thing go. Then Alex and Ian can evaluate the probabilities of it being there within either the currently defined "Geological Reserve" or in the property.

2) - I am concerned that in the wider areas the rock conditions will be negative. We did not see immediate HW/FW core but Mines Inspector Reports and Old Cominco reports indicate that caving occurred uncontrollaby below 5400 ft level. Above this, (majority of old workings), the tons/vert. ft. indicates a quite narrow mining width. Therefore,the shrinkage stope stability was okay. The reason they have so many tons now is the much wider zones being predicted. Therefore, we must be cautious as I suspect that currently defined tons are probably 50% to 100% higher than mineable tonnes at previous grades

MILL FEED SCHEDULE

FEED GRADES	Cu	%	0.75	1.00	1.03	0.66	0.27	1.27	1.20	2.92	1.19	0.12	0.60	
	Zn	%	3.85	5.00	6.24	13.25	2.40	11.36	6.00	9.09	5.43	2.23	5.31	
	Pb	%	0.43	1.00	1.47	0.53	0.65	1.67	1.16	1.58	1.15	0.97	0.13	
	Ag	g/t	39	55	92	53	34	111	118	170	143	153	22	
	Au	g/t	2.13	2.06	2.33	0.96	1.34	2.02	3.63	3.84	3.60	2.30	2.71	
TONNAGE MILLED			100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	1

File: rednsr3 SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 13-May-91

REDFERN - TULSEQUAH CHIEF - undiluted METAL PRICES - NET SMELTER RETURNS

	Units	A/B Lens 89-20 FEAS PRICES	A/B Lens XX FEAS PRICES	H Lens 89-13 FEAS PRICES	H Lens 89-15 FEAS PRICES	H Lens 89-18 FEAS PRICES	H Lens 88-19 FEAS PRICES	H Lens 89-21 FEAS PRICES	H Lens 90-22 FEAS PRICES	H Lens 90-23 FEAS PRICES	H Lens 90-24 FEAS PRICES	H Lens 90-25 FEAS PRICES	0 0 FEAS PRICES
METAL PRICES													
Cu	US$/lb	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Zn	US$/lb	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Pb	US$/lb	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Ag	US$/oz	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Au	US$/oz	375.00	375.00	375.00	375.00	375.00	375.00	375.00	375.00	375.00	375.00	375.00	375.00
Sb	US$/lb	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
COPPER-SILVER CONCENTRATE SALES DISTRIBUTION													
TO DOWA, JAPAN	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
TO SGM, BELGIUM	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EXCHANGE RATE	CDN$/US$	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500
CONSUMER PRICE INDEX (CPI)	POINTS	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2
COMINCO LABOUR - ZINC CONC	CDN$/SDT	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20
NET SMELTER RETURNS													
Cu-Ag Conc	CDN $	1335552	1400978	1793430	519348	883997	1635375	2716772	3341237	2930207	2356069	1432767	ERR
Zn Conc	CDN $	1512109	1911190	2400342	4976647	952160	4321972	2431073	3542134	2255461	1071844	2041242	ERR
Pb Conc	CDN $	225804	241953	322809	161146	154827	330260	472678	575803	514147	435281	244855	ERR
Au Conc	CDN $	795354	769698	872324	359192	500304	756870	1359799	1436769	1346971	859496	1013435	ERR
Total Net Smelter Return	CDN $	3873464	3554120	4516581	5657141	1990985	6287607	5620522	7459174	5699815	3863194	3718864	ERR
UNIT SMELTER RETURNS													
Cu-Ag Conc	CDN$/tonne milled	13.36	14.01	17.93	5.19	8.84	16.35	27.17	33.41	29.30	23.56	14.33	ERR
Zn Conc	CDN$/tonne milled	15.12	19.11	24.00	49.77	9.52	43.22	24.31	35.42	22.55	10.72	20.41	ERR
Pb Conc	CDN$/tonne milled	2.26	2.42	3.23	1.61	1.55	3.30	4.73	5.76	5.14	4.35	2.45	ERR
Au Conc	CDN$/tonne milled	7.95	7.70	8.72	3.59	5.00	7.57	13.60	14.37	13.47	8.59	10.13	ERR
Total Unit Returns	CDN$/tonne milled	38.69	43.24	53.89	60.16	24.91	70.44	69.80	88.96	70.47	47.23	47.32	ERR

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REDFERN - TULSEQUAH CHIEF - undiluted CONCENTRATE DETAILS - SHEET 1

		Units	A/B Lens 89-20 FEAS PRICES	A/B Lens XX FEAS PRICES	H Lens 89-13 FEAS PRICES	H Lens 89-15 FEAS PRICES	H Lens 89-18 FEAS PRICES	H Lens 88-19 FEAS PRICES	H Lens 89-21 FEAS PRICES	H Lens 90-22 FEAS PRICES	H Lens 90-23 FEAS PRICES	H Lens 90-24 FEAS PRICES	H Lens 90-25 FEAS PRICES	0 0 FEAS PRICES
METAL DISTRIBUTIONS TO CONCENTRATES														
Cu-Ag Conc	Cu	%	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00
	Zn	%	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
	Pb	%	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
	Ag	%	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00
	Au	%	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00
Zn Conc	Cu	%	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
	Zn	%	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00
	Pb	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
	Ag	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
	Au	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Pb Conc	Cu	%	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
	Zn	%	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	Pb	%	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00
	Ag	%	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
	Au	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Au Conc.	Cu	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Zn	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Pb	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Ag	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Au	%	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00
Tailings	Cu	%	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
	Zn	%	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
	Pb	%	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
	Ag	%	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
	Au	%	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
MOISTURE CONTENT		%	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
CONCENTRATE TONNAGES (DMT)														
Cu-Ag Conc		tonnes	2821.4	3761.9	3874.8	2482.9	1015.7	4777.6	4514.3	10984.8	4476.7	451.4	2257.1	0.0
Zn Conc		tonnes	5418.5	7037.0	8782.2	18648.1	3377.8	15988.1	8444.4	12793.3	7642.2	3138.5	7473.3	0.0
Pb Conc		tonnes	668.9	1555.6	2286.7	824.4	1011.1	2597.8	1804.4	2457.8	1788.9	1508.9	202.2	0.0
Au Conc		tonnes	15.4	14.9	16.9	7.0	9.7	14.7	26.3	27.8	26.1	16.7	19.6	0.0
Tailings		tonnes	91076	87631	85039	78038	94586	76622	85210	73736	86066	94885	90048	1

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REDFERN - TULSEQUAH CHIEF - undiluted CONCENTRATE DETAILS - SHEET 2

			A/B Lens	A/B Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	0
			89-20	XX	89-13	89-15	89-18	88-19	89-21	90-22	90-23	90-24	90-25	0
		Units	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES	FEAS PRICES
CONCENTRATE GRADES (Payables)														
Cu-Ag Conc	Cu (fixed)	%	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00
	Zn (Calc)	%	13.65	13.29	16.10	53.37	23.63	23.78	13.29	8.28	12.13	49.40	23.53	ERR
	Pb (Calc)	%	1.98	3.46	4.93	2.78	8.32	4.54	3.34	1.87	3.34	27.93	0.75	ERR
	Ag (Calc)	g/t	933.73	991.57	1612.50	1455.43	2295.30	1576.17	1776.56	1052.69	2166.45	23033.33	671.38	ERR
	Au (Calc)	g/t	29.38	21.33	23.47	15.08	51.34	16.51	31.40	13.63	31.36	198.45	46.80	ERR
Zn Conc	Cu (Calc)	%	0.69	0.71	0.59	0.18	0.40	0.40	0.71	1.14	0.78	0.19	0.40	ERR
	Zn (Fixed)	%	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
	Pb (Calc)	%	0.48	0.85	1.00	0.17	1.15	0.63	0.82	0.74	0.90	1.85	0.10	ERR
	Ag (Calc)	g/t	42.90	46.77	62.77	17.10	60.90	41.56	83.80	79.75	111.98	292.32	17.89	ERR
	Au (Calc)	g/t	2.35	1.75	1.59	0.31	2.38	0.76	2.58	1.80	2.83	4.39	2.17	ERR
Pb Conc	Cu (Calc)	%	7.85	4.50	3.15	5.60	1.87	3.42	4.66	8.32	4.66	0.56	20.77	ERR
	Zn (Calc)	%	17.27	9.64	8.19	48.21	7.12	13.12	9.98	11.10	9.11	4.43	78.77	ERR
	Pb (Fixed)	%	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
	Ag (Calc)	g/t	810.88	493.70	562.55	902.40	474.71	596.80	915.05	968.66	1116.20	1418.76	1542.82	ERR
	Au (Calc)	g/t	19.07	7.93	6.12	6.99	7.93	4.67	12.08	9.37	12.07	9.13	80.36	ERR
Au Conc	Cu (calc)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ERR
	Zn (Calc)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ERR
	Pb (Calc)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ERR
	Ag (Calc)	g/t	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ERR
	Au (Fixed)	g/t	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00
Tailings	Cu (Calc)	%	0.07	0.10	0.11	0.08	0.03	0.15	0.13	0.36	0.12	0.01	0.06	0.00
	Zn (Calc)	%	0.46	0.63	0.81	1.87	0.28	1.63	0.77	1.36	0.69	0.26	0.65	0.00
	Pb (Calc)	%	0.05	0.13	0.19	0.07	0.08	0.24	0.15	0.24	0.15	0.11	0.02	0.00
	Ag (Calc)	g/t	5	8	13	8	4	17	17	28	20	19	3	0
	Au (Calc)	g/t	0.47	0.47	0.55	0.25	0.28	0.53	0.85	1.04	0.84	0.48	0.60	0.00

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REDFERN - TULSEQUAH CHIEF - undiluted CONCENTRATE DETAILS - SHEET 3

		Units	A/B Lens 89-20 FEAS PRICES	A/B Lens XX FEAS PRICES	H Lens 89-13 FEAS PRICES	H Lens 89-15 FEAS PRICES	H Lens 89-18 FEAS PRICES	H Lens 88-19 FEAS PRICES	H Lens 89-21 FEAS PRICES	H Lens 90-22 FEAS PRICES	H Lens 90-23 FEAS PRICES	H Lens 90-24 FEAS PRICES	H Lens 90-25 FEAS PRICES	0 0 FEAS PRICES
CONCENTRATE GRADES (Penalty Items)														
Cu-Ag Conc	Pb	%	2.0	3.5	4.9	2.8	8.3	4.5	3.3	1.9	3.3	27.9	0.7	ERR
	Zn	%	13.6	13.3	16.1	53.4	23.6	23.8	13.3	8.3	12.1	49.4	23.5	ERR
	As	%	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
	Sb	%	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	Hg	g/t	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00
Zn Conc	Fe	%	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	SIO2	%	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
	MgO	%	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
	CaO	%	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
	Hg	g/t	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0
Pb Conc	As	%	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
	Sb	%	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
	Al203	%	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
	Fe	%	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	S	%	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
	Hg	g/t	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
Au Conc.														
	? ? As	%	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	? ? Hg	g/t	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	? ? ? ?													
	? ? ? ?													
	? ? ? ?													

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REDFERN - TULSEQUAH CHIEF - undiluted PRODUCTION/FEED GRADE SCHEDULE

		A/B Lens	A/B Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens
		89-20	XX	89-13	89-15	89-18	88-19	89-21	90-22	90-23	90-24	90-25
	Units	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr

NOTES:

1) - Undiluted grades used as it is felt that past experience indicated that higher grade areas(stopes) could be delineated. At this stage, I am more interested in determining the minimum mineable tonneage required to make this thing go. Then Alex and Ian can evaluate the probabilities of it being there within either the currently defined "Geological Reserve" or in the property.

2) - I am concerned that in the wider areas the rock conditions will be negative. We did not see immediate HW/FW core but Mines Inspector Reports and Old Cominco reports indicate that caving occurred uncontrollaby below 5400 ft level. Above this, (majority of old workings), the tons/vert. ft. indicates a quite narrow mining width. Therefore,the shrinkage stope stability was okay. The reason they have so many tons now is the much wider zones being predicted.
Therefore, we must be cautious as I suspect that currently defined tons are probably 50% to 100% higher than mineable tonnes at previous grades

MILL FEED SCHEDULE

FEED GRADES	Cu	%	0.75	1.00	1.03	0.66	0.27	1.27	1.20	2.92	1.19	0.12	0.60	
	Zn	%	3.85	5.00	6.24	13.25	2.40	11.36	6.00	9.09	5.43	2.23	5.31	
	Pb	%	0.43	1.00	1.47	0.53	0.65	1.67	1.16	1.58	1.15	0.97	0.13	
	Ag	g/t	39	55	92	53	34	111	118	170	143	153	22	
	Au	g/t	2.13	2.06	2.33	0.96	1.34	2.02	3.63	3.84	3.60	2.30	2.71	
TONNAGE MILLED			100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	100000	1

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REDFERN - TULSEQUAH CHIEF - undiluted METAL PRICES - NET SMELTER RETURNS

		A/B Lens	A/B Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	0
		89-20	XX	89-13	89-15	89-18	88-19	89-21	90-22	90-23	90-24	90-25	0
	Units	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	0
METAL PRICES													
Cu	US$/lb	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Zn	US$/lb	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
Pb	US$/lb	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
Ag	US$/oz	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80
Au	US$/oz	450.00	450.00	450.00	450.00	450.00	450.00	450.00	450.00	450.00	450.00	450.00	450.00
Sb	US$/lb	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
COPPER-SILVER CONCENTRATE SALES DISTRIBUTION													
TO DOWA, JAPAN	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
TO SGM, BELGIUM	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EXCHANGE RATE	CDN$/US$	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500	1.1500
CONSUMER PRICE INDEX (CPI)	POINTS	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2	157.2
COMINCO LABOUR - ZINC CONC	CDN$/SDT	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20	21.20
NET SMELTER RETURNS													
Cu-Ag Conc	CDN $	1893978	2072045	2573023	953452	1181859	2504642	3739496	5097609	3992343	2922010	1966258	ERR
Zn Conc	CDN $	1993963	2526458	3171231	6589506	1254447	5715811	3196923	4674210	2959624	1390144	2696969	ERR
Pb Conc	CDN $	313308	386987	529598	245296	248569	557920	681300	846355	730862	619198	307489	ERR
Au Conc	CDN $	962237	931197	1055357	434559	605278	915677	1645115	1738235	1629595	1039837	1226077	ERR
Total Net Smelter Return	CDN $	4201249	4985490	6273852	7788254	2684875	8778373	7617719	10618173	7682830	4931352	4970716	ERR
UNIT SMELTER RETURNS													
Cu-Ag Conc	CDN$/tonne milled	18.94	20.72	25.73	9.53	11.82	25.05	37.39	50.98	39.92	29.22	19.66	ERR
Zn Conc	CDN$/tonne milled	19.94	25.26	31.71	65.90	12.54	57.16	31.97	46.74	29.60	13.90	26.97	ERR
Pb Conc	CDN$/tonne milled	3.13	3.87	5.30	2.45	2.49	5.58	6.81	8.46	7.31	6.19	3.07	ERR
Au Conc	CDN$/tonne milled	9.62	9.31	10.55	4.35	6.05	9.16	16.45	17.38	16.30	10.40	12.26	ERR
Total Unit Returns	CDN$/tonne milled	51.63	59.17	73.29	82.23	32.90	96.94	92.63	123.56	93.12	59.71	61.97	ERR

File: rednsr4 SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 13-May-91

REDFERN - TULSEQUAH CHIEF - undiluted CONCENTRATE DETAILS - SHEET 1

		Units	A/B Lens 89-20 Feas +20% Pr	A/B Lens XX Feas +20% Pr	H Lens 89-13 Feas +20% Pr	H Lens 89-15 Feas +20% Pr	H Lens 89-18 Feas +20% Pr	H Lens 88-19 Feas +20% Pr	H Lens 89-21 Feas +20% Pr	H Lens 90-22 Feas +20% Pr	H Lens 90-23 Feas +20% Pr	H Lens 90-24 Feas +20% Pr	H Lens 90-25 Feas +20% Pr	0 0 0
METAL DISTRIBUTIONS TO CONCENTRATES														
Cu-Ag Conc	Cu	%	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00
	Zn	%	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
	Pb	%	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00
	Ag	%	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00	68.00
	Au	%	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00
Zn Conc	Cu	%	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
	Zn	%	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00
	Pb	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
	Ag	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
	Au	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Pb Conc	Cu	%	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
	Zn	%	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	Pb	%	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00
	Ag	%	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
	Au	%	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Au Conc.	Cu	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Zn	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Pb	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Ag	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Au	%	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00	29.00
Tailings	Cu	%	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00
	Zn	%	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
	Pb	%	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
	Ag	%	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
	Au	%	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
MOISTURE CONTENT		%	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
CONCENTRATE TONNAGES (DMT)														
Cu-Ag Conc		tonnes	2821.4	3761.9	3874.8	2482.9	1015.7	4777.6	4514.3	10984.8	4476.7	451.4	2257.1	0.0
Zn Conc		tonnes	5418.5	7037.0	8782.2	18648.1	3377.8	15988.1	8444.4	12793.3	7642.2	3138.5	7473.3	0.0
Pb Conc		tonnes	668.9	1555.6	2286.7	824.4	1011.1	2597.8	1804.4	2457.8	1788.9	1508.9	202.2	0.0
Au Conc		tonnes	15.4	14.9	16.9	7.0	9.7	14.7	26.3	27.8	26.1	16.7	19.6	0.0
Tailings		tonnes	91076	87631	85039	78038	94586	76622	85210	73736	86066	94885	90048	1

File: rednsr4 SAN Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 13-May-91

REDFERN - TULSEQUAH CHIEF - undiluted CONCENTRATE DETAILS - SHEET 2

				A/B Lens	A/B Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	0
				89-20	XX	89-13	89-15	89-18	88-19	89-21	90-22	90-23	90-24	90-25	0
			Units	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	0
CONCENTRATE GRADES (Payables)															
Cu-Ag Conc	Cu	(fixed)	%	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00
	Zn	(Calc)	%	13.65	13.29	16.10	53.37	23.63	23.78	13.29	8.28	12.13	49.40	23.53	ERR
	Pb	(Calc)	%	1.98	3.46	4.93	2.78	8.32	4.54	3.34	1.87	3.34	27.93	0.75	ERR
	Ag	(Calc)	g/t	933.73	991.57	1612.50	1455.43	2295.30	1576.17	1776.56	1052.69	2166.45	23033.33	671.38	ERR
	Au	(Calc)	g/t	29.38	21.33	23.47	15.08	51.34	16.51	31.40	13.63	31.36	198.45	46.80	ERR
Zn Conc	Cu	(Calc)	%	0.69	0.71	0.59	0.18	0.40	0.40	0.71	1.14	0.78	0.19	0.40	ERR
	Zn	(Fixed)	%	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
	Pb	(Calc)	%	0.48	0.85	1.00	0.17	1.15	0.63	0.82	0.74	0.90	1.85	0.10	ERR
	Ag	(Calc)	g/t	42.90	46.77	62.77	17.10	60.90	41.56	83.80	79.75	111.98	292.32	17.89	ERR
	Au	(Calc)	g/t	2.35	1.75	1.59	0.31	2.38	0.76	2.58	1.80	2.83	4.39	2.17	ERR
Pb Conc	Cu	(Calc)	%	7.85	4.50	3.15	5.60	1.87	3.42	4.66	8.32	4.66	0.56	20.77	ERR
	Zn	(Calc)	%	17.27	9.64	8.19	48.21	7.12	13.12	9.98	11.10	9.11	4.43	78.77	ERR
	Pb	(Fixed)	%	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
	Ag	(Calc)	g/t	810.88	493.70	562.55	902.40	474.71	596.80	915.05	968.66	1116.20	1418.76	1542.82	ERR
	Au	(Calc)	g/t	19.07	7.93	6.12	6.99	7.93	4.67	12.08	9.37	12.07	9.13	80.36	ERR
Au Conc	Cu	(calc)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ERR
	Zn	(Calc)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ERR
	Pb	(Calc)	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ERR
	Ag	(Calc)	g/t	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	ERR
	Au	(Fixed)	g/t	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00	4000.00
Tailings	Cu	(Calc)	%	0.07	0.10	0.11	0.08	0.03	0.15	0.13	0.36	0.12	0.01	0.06	0.00
	Zn	(Calc)	%	0.46	0.63	0.81	1.87	0.28	1.63	0.77	1.36	0.69	0.26	0.65	0.00
	Pb	(Calc)	%	0.05	0.13	0.19	0.07	0.08	0.24	0.15	0.24	0.15	0.11	0.02	0.00
	Ag	(Calc)	g/t	5	8	13	8	4	17	17	28	20	19	3	0
	Au	(Calc)	g/t	0.47	0.47	0.55	0.25	0.28	0.53	0.85	1.04	0.84	0.48	0.60	0.00

File: rednsr4 SAM Contract Basis(New Dowa terms),Recovery improved approx 2%over past, 13-May-91

REDFERN - TULSEQUAH CHIEF - undiluted CONCENTRATE DETAILS - SHEET 3

			A/B Lens	A/B Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	H Lens	0
			89-20	XX	89-13	89-15	89-18	88-19	89-21	90-22	90-23	90-24	90-25	0
		Units	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	Feas +20% Pr	0
CONCENTRATE GRADES (Penalty Items)														
Cu-Ag Conc	Pb	%	2.0	3.5	4.9	2.8	8.3	4.5	3.3	1.9	3.3	27.9	0.7	ERR
	Zn	%	13.6	13.3	16.1	53.4	23.6	23.8	13.3	8.3	12.1	49.4	23.5	ERR
	As	%	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
	Sb	%	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	Hg	g/t	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00	240.00
Zn Conc	Fe	%	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	SiO2	%	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
	MgO	%	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
	CaO	%	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
	Hg	g/t	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0
Pb Conc	As	%	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
	Sb	%	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
	Al2O3	%	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
	Fe	%	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	S	%	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
	Hg	g/t	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0
Au Conc.														
	? ? As	%	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	? ? Hg	g/t	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	? ? ? ?													
	? ? ? ?													
	? ? ? ?													