

# Project Memorandum

**To: Mr. Dalton Dupasquier  
President & CEO  
New Cantech Ventures Inc.  
Suite 201- 14881 Marine Drive  
White Rock, British Columbia V4B 1C2**

**From: Felix Lee & David Orava  
A.C.A Howe International**

**Re: Pre-Scoping Assessment of the Lucky Ship Molybdenum Property, B.C.**

**Date: January 5, 2007**

## 1.0 Draft Internal Document

A.C.A Howe International (Howe) has prepared this draft internal document for the sole and exclusive use and benefit of New Cantech Ventures Inc. (New Cantech) and as such this draft report is not to be communicated or disclosed in whole or in part to the public.

In December 2006, New Cantech commissioned Howe to carry out an assessment of New Cantech's Lucky Ship molybdenum property in B.C. As of December 2006, several options for developing the property had been identified. As such, as agreed by New Cantech and Howe, the first step towards assessing the property was selected to be:

- Mr. Steven Priesmeyer M.Sc., C.P.G. of Howe is to review of the existing geological database and updated mineral resource estimate with a view to understanding the basis of the estimate; quality control measures taken in developing, maintaining, storing and using the data; potential areas of concern (if any) and knowledge gaps; and the suitability of the existing geological database and for mineral reserve estimating and computerized mine planning purposes;
- Mr. David Orava, M.Eng., P.Eng. of Howe is to assess on a preliminary basis four options for the commercial development of the property. This work is to include the development of the scope for each option; and best guesstimates of the capital expenditures and operating expenditures for each option; and estimates the internal rate of return for each option; and
- Mr. Felix Lee, B.Sc., P.Geo. of Howe supervises and manages the work described above.

The results of the above work are to be summarized in a draft internal document (e.g. this document). The Howe project team planned to review the information with New Cantech by January 15, 2007. The review is intended to provide New Cantech and Howe with an opportunity to reality-check the conceptual approach and options, and look ahead and develop the direction of further work.

## 2.0 Summary

The present focus is to assess the following options (Table 2-1) on a preliminary basis and review the results with New Cantech.

Table 2-1  
Options

Option No.	Mining	Mineral Processing
1	Use an open pit in initial years. Then switch over to underground operations.	On-site concentrator
2		Off-site concentrator
3	Use underground mining methods only.	On-site concentrator
4		Off-site concentrator

The results of the assessment are summarized in Table 2-2. The open pit / underground mine options (Nos. 1 & 2) offer attractive payback and pre-tax returns at this stage. Mine planning should revisit the mine waste disposal strategy as concerns over acid rock drainage could become a major issue and obstacle in permitting. The standalone underground mine with an on-site mill options (No. 3) remains of interest.

Table 2-2  
Pre-Scoping Results

Item	Option 1 Open Pit, On-Site Mill	Option 2 Open pit, Off-site mill	Option 3 Underground, Off-site mill	Option 4 Underground, Off-site mill
Upfront capital	\$181M	\$116M	\$224	\$159
IRR	21%	23%	5%	-2%
Payback	2.8 years	2.4 years	8 years	None

Looking ahead, it is suggested that Howe's efforts now be focused on completing and checking the existing digital geological database, and re-estimating the mineral resource using the block model. This effort will involve Steven Spreismeyer of Howe reviewing the existing geological database with Don MacIntyre in Victoria. Steven would then visit

the Lucky Ship property to familiarize himself with the site and geology and sample core for Howe's check assays. Steven would then report back to New Cantech and Howe on the status of the database and the expected level of effort to complete the block model including QA/QC and database integrity, and the re-estimate the mineral resource based on the block model. This is to provide the database necessary for further mine planning and project evaluation.

### 3.0 Pre-Scoping Assessment

The pre-scoping assessment has considered the following four options.

Option No.	Mining	Mineral Processing
1	Use an open pit in the initial four years, then operate an underground mine for 6 years.	On-site concentrator
2		Off-site concentrator
3	Use underground mining methods for 10 years.	On-site concentrator
4		Off-site concentrator

#### Option 1 – Open pit / underground mine and an on-site mill

In Option 1, the upper zone of the deposit is mined using conventional open pit mining methods, and the ore is processed on-site. After the pit is mined-out, the lower zone of the deposit is mined using sublevel caving with ramp access.

For present purposes, it is assumed that the mine will operate for a total of ten years including four years of open pit mining followed by six years of underground mining. It is assumed that the open pit and underground run-of-mine grade will be 0.085% Mo.

#### *Open pit mining:*

The open pit will be developed using 10 m benches, and a ten percent ramp. Blasting practice will include the use of nominal 200 mm (8 inch) diameter blastholes, and ANFO and top and bottom primers. The blasted rock will be loaded into nominal 90 t (100 t) trucks and hauled from the pit. The crusher will be located adjacent to the mill.

The waste rock will be stored in designated interim waste rock storage areas. These areas would be designed to provide suitable conditions for the interim storage of the acid generating and/or potentially acid generating materials, and are intended to facilitate waste rock re-location to the pit at the completion of underground mining operations.

***Underground mining:***

The lower zone of the deposit will be mined using underground mining methods – specifically using the sublevel caving method. Ore will be loaded into rock trucks and hauled to surface via a main haulage ramp. The underground mine will commence operation after the completion of the pit.

At the end of the underground operation, the eave zone will intercept the pit floor. The cave zone and a portion of the pit will be backfilled with reclaimed open pit waste rock. In addition, the ramp portal and mine raises will be backfilled / sealed to allow the pit to flood and submerge the waste rock. As is the case at other sites, there is a possibility that the pit lake will need to be batch-treated during the post-closure transition period in order to provide acceptable water quality for discharge.

***Milling:***

The 6,000 tpd mill to be constructed at the Lucky Ship property will use a conventional process with a SAG mill, ball mills, flotation circuit, thickeners and dryer and produce a 54% MoS<sub>2</sub> concentrate with a maximum moisture content of 5%. The mill concentrate will be custom roasted off-site to produce a converted MoO<sub>3</sub> concentrate for sale. Mill energy consumption is assumed to be 40 kwh/t, equivalent to \$3.75/t milled.

At a run-of-mine grade of 0.085% Mo, the mill will produce nearly 3.5 million pounds of payable Mo per year. At \$25/lb contained Mo, the Lucky Ship operation would generate an estimated pre-tax net revenue of \$96 million per annum.

***Option 1 Assessment:***

The results of a preliminary assessment of Option 1 are presented in Table 3-1.

**Table 3-1  
Preliminary Assessment Results  
Option 1 – Open pit / underground mine with on-site mill**

<b><u>Net Revenue</u></b>	
10 years @ \$96M/a =	<b>\$960 M</b>
<b><u>Operating Cost</u></b>	
Cumulative operating cost over 10 years =	<b>\$510 M</b>
<b><u>Upfront Capital Costs</u></b>	
Open pit equipment lease payments	\$1 M
6000 tpd mill & infrastructure	\$150 M
Tailings & water management costs	\$20 M
Commissioning cost allowance	<u>\$10 M</u>
	<b>\$181 M</b>
<b><u>Payback</u></b>	<b>~2.8 yrs</b>
<b><u>IRR</u></b>	<b>21%</b>

## Option 2 – Open pit / underground mine and an off-site mill

In Option 2, the deposit is mined using conventional open pit mining and underground mining methods, and the ore is processed at the Huckleberry mill which is located about 62 km from the Lucky Ship property.

### ***Open pit mining:***

As in Option 1, the open pit will operate for four years. The waste rock would be placed in interim waste rock storage areas and later re-located to the pit.

### ***Underground mining:***

As in Option 1, the underground mine will operate for six years. At the end of the underground operation, the cave zone will be backfilled with reclaimed open pit waste rock, and the pit will be allowed to flood.

### ***Milling:***

It is assumed that the existing mill at the Huckleberry Mine will be purchased and re-furnished and modified to treat ore from the Lucky Ship mine. The modified process will produce a 54% MoS<sub>2</sub> concentrate with a maximum moisture content of 5%. The concentrate will be custom roasted off-site to produce a MoO<sub>3</sub> concentrate.

### ***Option 2 Assessment:***

The results of a preliminary assessment of Option 2 are presented in Table 3-2.

**Table 3-2**  
**Preliminary Assessment Results**  
**Option 2 – Open pit / underground mine with an off-site mill**

<b><u>Net Revenue</u></b>	
10 years @ \$96 M/a =	<b>\$960 M</b>
<b><u>Operating Cost</u></b>	
Cumulative total operating cost over 10 years =	<b>\$657 M</b>
<b><u>Upfront Capital Costs</u></b>	
Open pit equipment lease payments	\$1 M
Underground mine equipment lease payments	--
Underground development	--
Modify mill & infrastructure	\$85 M
Tailings & water management costs	\$20 M
Commissioning cost allowance	<u>\$10 M</u>
	<b>\$116 M</b>
<b><u>Payback</u></b>	<b>~2.4 yrs</b>
<b><u>IRR</u></b>	<b>23%</b>

### Option 3 – Underground mine and an on-site mill

In Option 3, the deposit is mined using sublevel caving methods, and the ore is processed at the on-site mill. It is assumed that the mine will operate for ten years and that it will produce 6,000 tpd at a run-of-mine grade of 0.085% Mo.

#### ***Underground mining:***

The deposit will be mined using the sublevel caving method. Ore will be loaded into rock trucks and hauled to the surface crusher via a main haulage ramp. The underground mine will commence operation after the completion of the pit. At the end of the mine life, the mine will be allowed to flood.

#### ***Milling:***

The mill will be constructed at the Lucky Ship project site, and will produce a 54% MoS<sub>2</sub> concentrate with a maximum moisture content of 5% which will be roasted off-site to produce a MoO<sub>3</sub> concentrate. At a run-of-mine grade of 0.085% Mo, the mill will produce approaching 3.5 million pounds of payable Mo per year.

#### ***Option 3 Assessment:***

The results of a preliminary assessment of Option 3 are presented in Table 3-3.

**Table 3-3  
Preliminary Assessment Results  
Option 3 – Underground mine with an on-site mill**

<b><u>Net Revenue</u></b>	
10 years @ \$96 M/a =	<b>\$960 M</b>
<b><u>Operating Cost</u></b>	
Cumulative total operating cost over 10 years =	<b>\$643 M</b>
<b><u>Upfront Capital Costs</u></b>	
Underground mine equipment lease payments	\$6 M
Underground development	\$38 M
Modify mill & infrastructure	\$150 M
Tailings & water management costs	\$20 M
Commissioning cost allowance	<u>\$10 M</u>
	<b>\$224 M</b>
<b><u>Payback</u></b>	<b>~8 yrs</b>
<b><u>IRR</u></b>	<b>5%</b>

#### **Option 4 – Underground mine and an off-site mill**

In Option 4, the deposit is mined using sublevel caving methods, and the ore processed at the Huckleberry mill site located approximately 62 km from the Lucky Ship property. It is assumed that the underground mine will operate for ten years and produce 6,000 tpd at a run-of-mine grade of 0.085% Mo.

#### ***Underground mining:***

The deposit will be mined using sublevel caving. At the end of the underground operation, the cave zone will be allowed to flood and submerge the mine.

#### ***Milling:***

It is assumed that the existing mill at the Huckleberry Mine will be purchased and refurbished and modified to treat ore from the Lucky Ship mine. At a run-of-mine grade of 0.085% Mo, the mill will produce approaching 3.5 million pounds of payable Mo per year.

#### ***Option 4 Assessment:***

The results of a preliminary assessment of Option 4 are presented in Table 3-4.

**Table 3-4  
Preliminary Assessment Results  
Option 4 –Underground mine with an off-site mill**

<b><u>Net Revenue</u></b>		
10 years @ \$96M/a =		<b>\$960 M</b>
<b><u>Operating Cost</u></b>		
Cumulative total operating cost over 10 years =		<b>\$791 M</b>
<b><u>Upfront Capital Costs</u></b>		
Underground mine equipment lease payments	\$6 M	
Underground development	\$38 M	
Modify mill & infrastructure	\$85 M	
Tailings & water management costs	\$20 M	
Commissioning cost allowance	<u>\$10 M</u>	
		<b>\$159 M</b>
<b><u>Payback</u></b>		<b>No payback</b>
<b><u>IRR</u></b>		<b>minus 2%</b>

## 4.0 Discussion

### Mineral Resource and Reserve

The June 2006 mineral resource estimate for the Lucky Ship property (Carter, 2006) includes an indicated mineral resource of 12.7 Mt at 0.089% Mo (using a 0.06% Mo cut-off), and an inferred mineral resource of 19.4 Mt at 0.088% Mo. Given that the existing geological digital database is a work in progress, it will need to be revisited along with the indicated and inferred mineral resource estimate. It is understood the indicated mineral resource now stands at about 32 Mt.

### Open pit and underground mine

A pit design has not yet been developed. It has been assumed that the overall pit stripping ratio is 3 t waste : 1 t ore, and that the pit limits for a four year life pit will be at safe distance and elevation in relation to the Nanika River. Open pit mining costs are guesstimates based on experience at other sites.

The underground mine development requirements are based on preliminary information and order-of-magnitude costs presented in Hara Mining Enterprises Inc's (Hara) draft memorandum dated December 21, 2006. Hara's draft recommendations for geotechnical investigations would also apply to the open pit.

An assumed 6,000 tpd production rate has been used to assess / compare the four options. This is not necessarily the optimum rate and as such is subject to change as the project continues to be evaluated.

### Mill

Initial metallurgical testing by Canadian Metallurgical and Environmental Inc. (CERI) in early 2006 indicates a Mo recovery of 85 to +90%. CERI recommended additional testwork. A 90% recovery has been used for present purposes.

The capital cost for a new mill was estimated by applying the 6/10ths power rule to a May 2006 \$350M cost estimate to construct a new 20,000 tpd molybdenum mill / infrastructure at the proposed Ruby Creek molybdenum property in NW B.C.. The resultant cost appears high. The capital cost to purchase, modify and update the Huckleberry mill is a guesstimate.

The mill concentrate processing costs are based on unit costs used in other studies. The concentrate quality and con processing / marketing costs are areas that need to be revisited / confirmed.

### Environmental

Molybdenum in the drainage from the site has the potential to adversely impact the receiving environment and moose in particular. Assessments at other molybdenum projects suggest that with appropriate controls, the local moose population would not be expected to be at risk. This aspect will need to be addressed in detail as part of the environmental assessment of the project. The cost of an environmental assessment is

assumed to be included in the \$20M upfront cost of the tailings dam and water management system.

The possibility that the waste rock may generate acid rock drainage (or otherwise be potentially acid generating) has been identified by Peter McCreath, P.Eng. et al. in a Technical Memorandum dated October 30, 2006. In Option 1, the open pit waste rock would be temporarily stockpiled and possibly covered to inhibit acid generation, and later reclaimed and relocated to the pit and submerged. The use of a water cover over reactive mine waste is one of the most effective options for the long term disposal of acid waste rock. There may be a need to add a diffusion barrier (e.g. a layer of till) over the top of the submerged waste rock to assist in protecting the pit lake water quality.

The preliminary cost estimate includes provisional cost allowances for mine closure items such as the relocation of waste rock to the pit; and modifying the surface drainage system at closure. The cost of plant teardown and clean-up is assumed to be offset by its salvage value.

#### Previous Studies

New Cantech had previously assessed the molybdenum market, and commissioned other consultants to: 1) initially assess the social and environmental aspects of developing the mine 2) conduct metallurgical testing; and 3) identify and initially assess possible options to the development of the mine. Andrew Hara, P.Eng. who was commissioned by New Cantech has evaluated how the property could be mined by underground methods, and has developed order of magnitude capital and operating costs estimates. New Cantech also commissioned other consultants to develop the mineral resource estimate for the Lucky Ship molybdenum property.