

**PROPERTY VALUATIONS
AND
EXPLORATION COSTS PER OUNCE**

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**SUMMARY OF PROPERTY VALUATIONS
BASED ON MARKET CAPITALIZATIONS**

Property or Companies Owning the Property or an Interest in the Property	Period of Time from Underground Exploration to Start of Production	Property Values in the Years Prior to the Start of Production (or prior to Nov 25/88)		
		3 Years Before (millions of dollars)	2 Years Before	1 Year Before
Blackdome	2½ years	\$ 16.5	\$ 13.3	\$ 26.3
Dome Mountain (Teeshin/Cdn-United)	Not producing Nov 25/88	*	37.3	31.2
Erickson (Nu-Energy)	1½ years	*	21.2	52.0
New Privateer	1½ years	*	12.4	17.1
Skylark	1½ years	*	13.1	17.3
Skyline	2 years	*	22.9	80.9
Snip (Delaware)	Not producing Nov 25/88	*	84.7	283.9
Sulphurets	Not producing Nov 25/88	*	<u>48.6</u>	<u>91.5</u>
	Medians =		22.1	41.6

* Underground exploration (adit/driftng/raising) not yet carried out.

EXPLORATION COSTS PER OUNCE OF GOLD

<u>Property or Company</u>	<u>Exploration Cost/Ounce*</u>
Blackdome	\$ 45
Dome Mountain	\$ 39
Erickson	\$ 25
New Privateer	\$ 22
Skylark	\$ 24
Skyline	\$ 5
Snip	\$ 6
Sulphurets	<u>\$ 22</u>
Median =	\$ 23
Sherwood (Ross Glanville assumptions utilized in his cash flows)	\$ 41

* These costs will obviously vary depending on the reserve assumptions utilized, the time frame analyzed, the allocation of costs between exploration and capital costs (such as mine development utilized for mine production) etc.

BLACKDOME

General Comments

- In 1983, underground exploration and development work was continued by Heath Steele (but in the wrong place, according to Mr. Burt Reeve).
- 1983 Annual Report states the following:
 - (i) "This structure (No. 1 vein system) contains an estimated ore reserve of 455,000 tons grading 0.32 oz/t gold and 2.7 oz/t silver."
 - (ii) Since 1978, more than \$6,000,000 has been spent by the Company on exploration and development work, and the known reserves are now at a level where production can be considered.
- Exploration costs per ounce of gold equivalent to the end of 1983 were calculated as follows:

$$\frac{\$6,000,000}{0.38 \text{ (gold equivalent)} \times 455,000} = \underline{\$35/\text{ounce}}$$

- Underground exploration occurred in 1984 on the No. 1 vein system.
- During 1984, Blackdome spent approximately \$2.0 million (for 3,700 feet of drifting and raising, drilling, mine access, road, water supply system, etc.) on exploration and development, and delineated reserves of 175,000 ounces of gold equivalent.
- Total cost per ounce to the end of 1984 (if all costs, including capital items, and the underground work in the wrong area, are allocated to exploration) was as follows:

$$\frac{\$8.0 \text{ million}}{175,000 \text{ oz.}} = \underline{\$45/\text{ounce}}$$

- Early in 1985 a feasibility study was completed.

DOME MOUNTAIN
(Canadian-United Minerals, Inc. & Teeshin Resources Ltd.)

General Comments

- In 1985, Canadian-United Minerals optioned the Dome Mountain property from Noranda, who is able to back-in for 65% by providing production financing.
- Total exploration by Canadian-United Minerals to May 31, 1986, was \$575,000.
- During the year ended May 31, 1986, the company entered into an agreement with Noranda to acquire a 100% interest in the Dome Mountain property. A second agreement was entered into with Teeshin Resources Ltd.
- During the year ended May 31, 1987, Canadian-United Minerals has renegotiated its interest in the claim by a conditional agreement whereby it will acquire up to 29.5% and no less than an 18.5% participating interest in the Dome Mountain property. The variance in the percentage of acquisition of participating interest is due to an underlying agreement which is in dispute.
- Total Erickson Resources Ltd. holds a 50% back-in right, and Teeshin Resources Ltd. holds an option to earn 75% of the interest of Canadian-United Minerals.
- Total expenditures (including underground development) by Teeshin and Canadian-United Minerals to September 30, 1987, were approximately \$5.0 million.
- In 1987, proven and probable reserves in the Boulder-Argillite zone rose to 319,280 tons with an average grade of 0.37 ounces gold and 2.0 ounces silver per ton.

- Exploration costs per ounce of gold equivalent to the end of 1987 were calculated as follows:

$$\frac{0.37 \times 319,280 + \frac{\$5.0 \text{ million}}{70} \times 319,280}{70} = \underline{\$39 \text{ per ounce}}$$

Market Capitalization

Canadian-United Minerals	<u>1987</u>	<u>1988</u>
Average of high & low share price	\$ 1.18	\$ 1.10
Average shares issued (000's)	4,214	6,413
Average market capitalization (000's)	\$ 4,973	\$ 7,054
 Teeshin Resources Ltd.		
Average of high & low share price	\$ 1.42	0.79
Average shares issued (000's)	9,157	10,809
Average market capitalization (000's)	\$ 13,003	\$ 8,539
Total market capitalization (000's) (for a net beneficial interest of 50%)	\$ 17,976	\$ 15,593
Value of 100% of property	\$ 35.9	\$ 31.2
Inflation Factors	1.04	1.00
Value in 1988 Dollars (millions)	\$ 37.3	\$ 31.2

ERICKSON
(and Nu-Energy, its predecessor company)

General Comments

- Diamond drilling and sampling in 1977.
- Adit to 225 feet in late 1977.
- Acquired 150 ton per day mill from Silver Standard in 1988.
- Production commenced on December 21, 1978, but effective operations started in early 1979.
- Stated cost to production (Canadian Mines Handbook) of \$1.5 million.
- Exploration costs to the end of 1979 were estimated to be \$800,000 and reserves (including 1989 production) were estimated to be approximately 50,000 tons grading 0.65 ounces per ton, or 32,000 ounces. Thus, the cost per ounce to the end of 1989 was estimated to be \$25 per ounce (\$800,000 divided by 32,500 ounces).

Market Capitalization

	<u>1977</u>	<u>1978</u>
Average high & low share price	\$ 1.61	\$ 3.48
Shares issued (000')	3,100	3,824
Average market capitalization (000's)	\$ 4,991	\$ 13,308
Inflation factors	2.12	1.95
Average market capitalization in 1988 dollars (for 50%* of property) (millions)	\$ 10.6	\$ 26.0
Value of 100% of property (millions)	\$ 2.12	\$ 52.0

* The actual interest was 40%, with an option to increase that interest to 50%.

NEW PRIVATEER MINE LIMITED

General Comments

- A 700 foot tunnel was completed in early 1986.
- Reserves estimated at 135,000 tons grading 0.27 ounces of gold per ton in 1986, or 36,000 ounces of gold.
- A 100 ton-per-day pilot mill was purchased in 1986.
- Underground development on the 1,100 foot level intersected #4 vein in 1987.
- Metallurgical test work to begin mid-1987 on ore being mined.
- Early 1988 plans to start processing 100,000 tons of ore.
- Exploration expenditures to the end of 1987 estimated to be less than \$0.8 million.
- Exploration cost per ounce discovered would be \$22 (\$0.8 million ÷ 135,000 x 0.27 opt).
- Three of the claims were subject to a 5% net smelter return royalty.

Market Capitalization

	<u>1986</u>	<u>1987</u>
Average high & low share price	\$ 2.04	\$ 2.58
Shares issued (000')	5,575	6,362
Average market capitalization (millions)	\$ 11.4	\$ 16.4
Inflation factors	1.09	1.04
Average market capitalization in 1988 dollars (millions)	\$ 12.4	\$ 17.1

SKYLARK

General Comments

- 95% interest in 26 claims and 50% working interest in adjoining claims (15 units).
- In 1986, Skylark completed first phase of underground development including 173 metres of decline, 81 metres of drifting and 123 metres of raising.
- Preproduction work completed in 1987.
- In April 1988, commenced shipping of 140 tons per day to Dankoe mill.
- Exploration expenditures prior to development and operations were estimated to be less than one million dollars.
- Exploration costs per ounce of gold equivalent were calculated to be as follows:

Costs estimated at \$1,000,000

Gold equivalent reserves	116,300 x .08 Au =	9,304
	116,300 x $\frac{20.0}{70.0}$ Ag =	<u>33,229</u>
	Total Ounces =	42,533 Au
Exploration cost =	$\frac{\$1,000,000}{42,533}$	= <u>\$24/ounce</u>

<u>Market Capitalization</u>	<u>1986</u>	<u>1987</u>
Average high & low share price	\$ 2.16	\$ 2.48
Average shares issued (000's)	4,025	4,850
Market capitalization (000's)	\$ 8,694	\$ 12,028
Inflation factor	1.09	1.04
Market capitalization in 1988 dollars (000's)	\$ 9,476	\$ 12,509
Average percentage interest	72.5%	72.5%
Property value (000's)	\$ 13,070	\$ 17,254

SKYLINE EXPLORATIONS LTD.

General Comments

- From June 1986 (when underground exploration commenced) through December of 1986, 1200 feet (365 metres) of underground cross-cut and drifting was completed.
- Exploration expenditures to the end of 1986 were approximately \$3.5 million (from financial statements).
- Dr. E.W. Grove calculated the indicated, measured and inferred tonnage of 838,446 tons at 0.730 ounces of gold per ton, for a total contained gold content of 685,000 ounces.
- Exploration cost per ounce of gold to the end of 1986 equals \$5 per ounce ($\$3.5 \text{ million} \div 685,000 \text{ ounces}$).

X

X

*Something
Wrong!
As later
found out!*

<u>Market Capitalization</u>	<u>1987</u>	<u>1988</u>
Average high & low share price	\$ 4.15	\$ 11.88
Average shares issued (000's)	5,071	6,809
Market capitalization (000's)	\$ 21,040	\$ 80,900
Inflation factor	1.04	1.00
Market capitalizations in 1988 dollars (millions)	\$ 22.9	\$ 84.1

SNIP PROPERTY
(Delaware Resources Corp.)

General Comments

- "High grade gold has been explored in trenches and these zones are now (approximately mid-1986) being tested by a diamond drill program operated by Cominco." "Cominco's drill program, costing about \$200,000, is commencing early in July (1986)."
- Delaware spent \$1,119,077 on cumulative exploration to the end of March 1987.
- Delaware spent an additional \$4,029,127 on exploration in the year ending March 31, 1988.
- "Continued drilling of the Twin Zone in 1987 identified a mineral inventory of 1.2 million tons grading 0.7 ounces per ton gold."
- Underground exploration commenced in 1988.
- Exploration costs per ounce of gold to March 31, 1988 equals \$6 per ounce, calculated as follows:

Exploration expenditures = \$1,119,077 + \$4,029,121 = \$5,148,207
Ounces discovered = 1.2 million tons x 0.7 ounces = 840,000 ounces
Cost per ounce = $\frac{\$5,148,207}{840,000} = \6

Note: From Annual Report of Delaware for year ended March 31, 1988:
"Delaware and Cominco are highly encouraged by results of the underground work thus far completed (July 1988). Face and muck sample assays indicate higher grade and better continuity for the Twin Zone than was interpreted from the 1986 and 1987 surface drilling. Also the underground sampling shows that the practice of cutting (to 4.8 ounces per tonne) exceptionally high assay results may not be appropriate for calculating the overall grade of the deposit. This upgrading of drilling assays, as confirmed by underground work, is quite typical of high grade gold deposits."

*
Good Point!

<u>Market Capitalization</u>	<u>1987</u>	<u>1988</u>
Average high & low share price	\$ 5.63	\$ 16.25
Average shares issued (000's)	5,861	7,390
Market capitalization (000's)	\$ 32,997	\$ 120,088
Inflation factor	1.04	1.00
Market capitalization in 1988 dollars (000's)	\$ 34,317	\$ 120,088
Less working capital (000's)	<u>434</u>	<u>6,504</u>
Value of a 40% interest (000's)	\$ 33,883	\$ 113,584
Value of a 100% interest (000's)	\$ 84.7	\$ 283.9

**SULPHURETS PROPERTY
(Granduc and Newhawk)**

General Comments

- In 1980 the property was optioned to Esso Minerals, who spent \$2.4 million over the period 1980 to 1985.
- Esso dropped its option in 1985, and it reverted to Granduc.
- Granduc optioned the property to Newhawk and Lacana in 1985.
- Total expenditures by Esso and Newhawk/Granduc to the end of 1985 were approximately \$2.9 million.
- Newhawk/Lacana consultants stated (in the 1985 annual report) that a review of the Esso drilling and the 1985 drilling "indicated an ore reserve of 496,456 tonnes of 0.69 ounces gold equivalent per tonne" on the West Zone and 490,000 tonnes of 0.89 ounces gold-equivalent on the Share Zone."
- Underground exploration (costing approximately \$1.9 million) commenced in 1986, including the driving of 1,325 feet of decline, together with drifts, cross-cuts and raises.
- Total expenditures in 1987 were \$5.7 million, including additional underground development, drilling, and pre-feasibility studies.
- Exploration costs per ounce of gold equivalent to the end of 1987 were calculated as follows:

Expenditures (right from 1980) were \$10.5 million

Indicated reserves:	496,000 x 0.69 =	343,000
	490,000 x 0.89 =	<u>436,000</u>
	Total Ounces =	779,000

$$\text{Cost per Ounce} = \frac{\$10.5 \text{ million}}{779,000 \text{ ounces}} = \underline{\$13/\text{ounce}}$$

- 1988 expenditures on the property totalled \$11.8 million, including improvements to the mine tote road, construction of a 3,500 foot airstrip, enlargement of camp facilities, installation of an on-site assay lab, as well as additional underground and surface exploration.
- An updated calculation of West Zone mineral inventory totalled 854,000 tons with a gold equivalent of approximately 0.70 ounces per ton, or 598,000 ounces. Adding the ^{Share} Zone indicated reserves of 436,000 ounces, the total indicated reserves at the end of 1988 were approximately 1,034,000 ounces.
- Even if one adds the full amount of 1988 expenditures (several of which were of a capital cost nature, rather than exploration), the cost per ounce of gold equivalent to the end of 1988 would have been as follows:

$$\frac{\$22.3 \text{ million } (\$10.5 + \$11.8)}{1,034,000} = \underline{\$22/\text{ounce}}$$

- Total mineral inventory as of January 1, 1988, as calculated by American Mine Services Inc., was approximately 1,595,000 ounces, versus the 1,034,000 ounces for the two zones as indicated above.

<u>Market Capitalization</u>	<u>1987</u>	<u>1988</u>
Granduc Mines		
Average high & low share price	\$ 4.69	\$ 5.28
Average shares issued (000's)	3,805	5,963
Average market capitalization (000's)	\$ 17,845	\$ 31,479
Newhawk Gold Mines		
Average high & low share price	\$ 4.55	\$ 5.70
Average shares issued (000's)	3,261*	10,522
Average market capitalization (000's)	\$ 14,838	\$ 59,975
Total market capitalization (000's)	\$ 32,683	\$ 91,454
Percentage interest of both companies	70%	100%
Market capitalization of 100% (000's)	\$ 46,690	\$ 91,454
Inflation factor	1.04	1.00
Market capitalization in 1988 dollars (000's)	\$ 48,558	\$ 91,454

* Before the issuance of 4,025,000 shares of Newhawk to Lacana to acquire Lacana's 30% interest. The transaction value attributed to the 30% interest was \$20 million.