

Investing 101

June 19, 2009

Presented by John Kaiser

**Rational Speculation Model: How to value
a pre-production resource project**

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Brett Resources Inc

6/21/1999 TO 6/18/2009



Issued: 66,923,155

High: \$1.63 on 1/8/2008

Max Volume: 907,500 on 11/2/2007

Diluted: 74,316,022

Low: \$0.02 on 10/30/2001

Max Value: \$1,225,125 on 11/2/2007



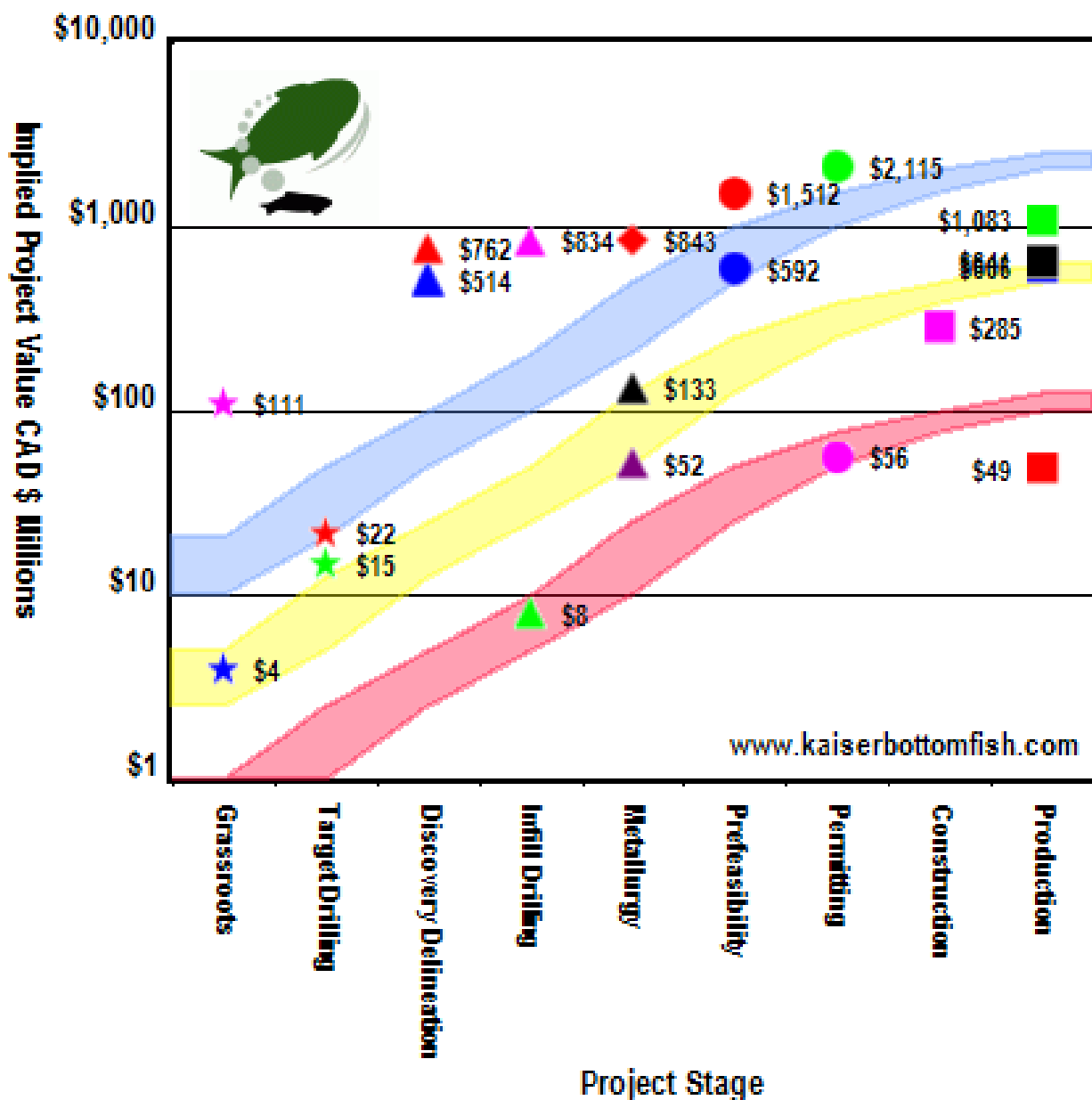
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BBR - TSXV - CAD \$0.70

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Gold Project Valuations

Wednesday, June 17, 2009



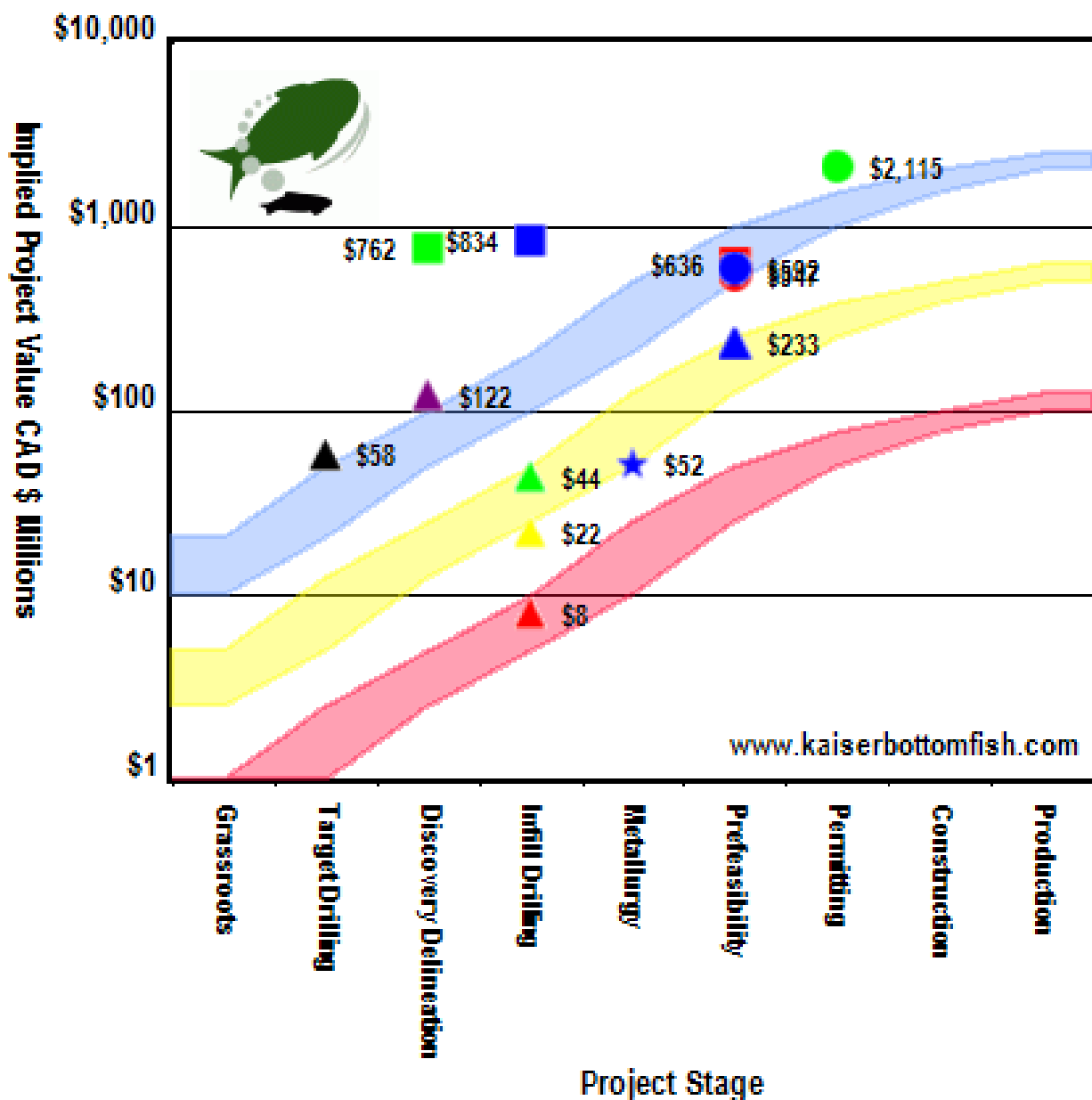
Dream Target Channels

- \$100 million Dream Target
- \$500 million Dream Target
- \$2 billion Dream Target
- 4 - Aurelian - Fruta del Norte
- 1 - Nevada Expl Inc - Whiskey Flat
- 1 - Eurasian Mnrls - La Miel JV
- 2 - Northern Superior - TPK
- 2 - Miranda Gold - Horse Mountain
- 3 - Ventana Gold - La Bodega
- 3 - Virginia Gold - Eleonore
- 4 - Moss Lake - Moss Lake
- 4 - Viceroy - Gualcamayo
- 5 - Brett - Hammond Reef
- 5 - Canplats - Camino Rojo
- 6 - Arizona Star - Cerro Casale
- 6 - Detour Gold - Detour Lake
- 7 - Golden Queen - Soledad Mtn
- 7 - Osisko - Cdn Malartic
- 8 - Minefinders - Dolores
- 8 - Orezone - Essakane
- 9 - Alamos - Mulatos
- 9 - Castle Gold - El Castillo
- 9 - San Gold - Rice Lake

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Brett Project Valuations

Wednesday, June 17, 2009



Dream Target Channels

- \$100 million Dream Target
- \$500 million Dream Target
- \$2 billion Dream Target

Key Company Projects

- Brett - Hammond Reef

Peer Projects

- Brazauro - Batalha
- Guyana Gold - Aurora
- Moss Lake - Moss Lake
- Pediment - San Antonio
- PC Gold - Pickle Crow
- Rainy River - Rainy River

Comparable Projects

- Detour Gold - Detour Lake
- Lake Shore - West Timmins
- Osisko - Cdn Malartic

Success Stories

- Viceroy - Gualcamayo
- Cumberland - Meadowbank
- Virginia Gold - Eleonore

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Rational Speculation Model

A formal system for valuing a spec stock

Three Steps

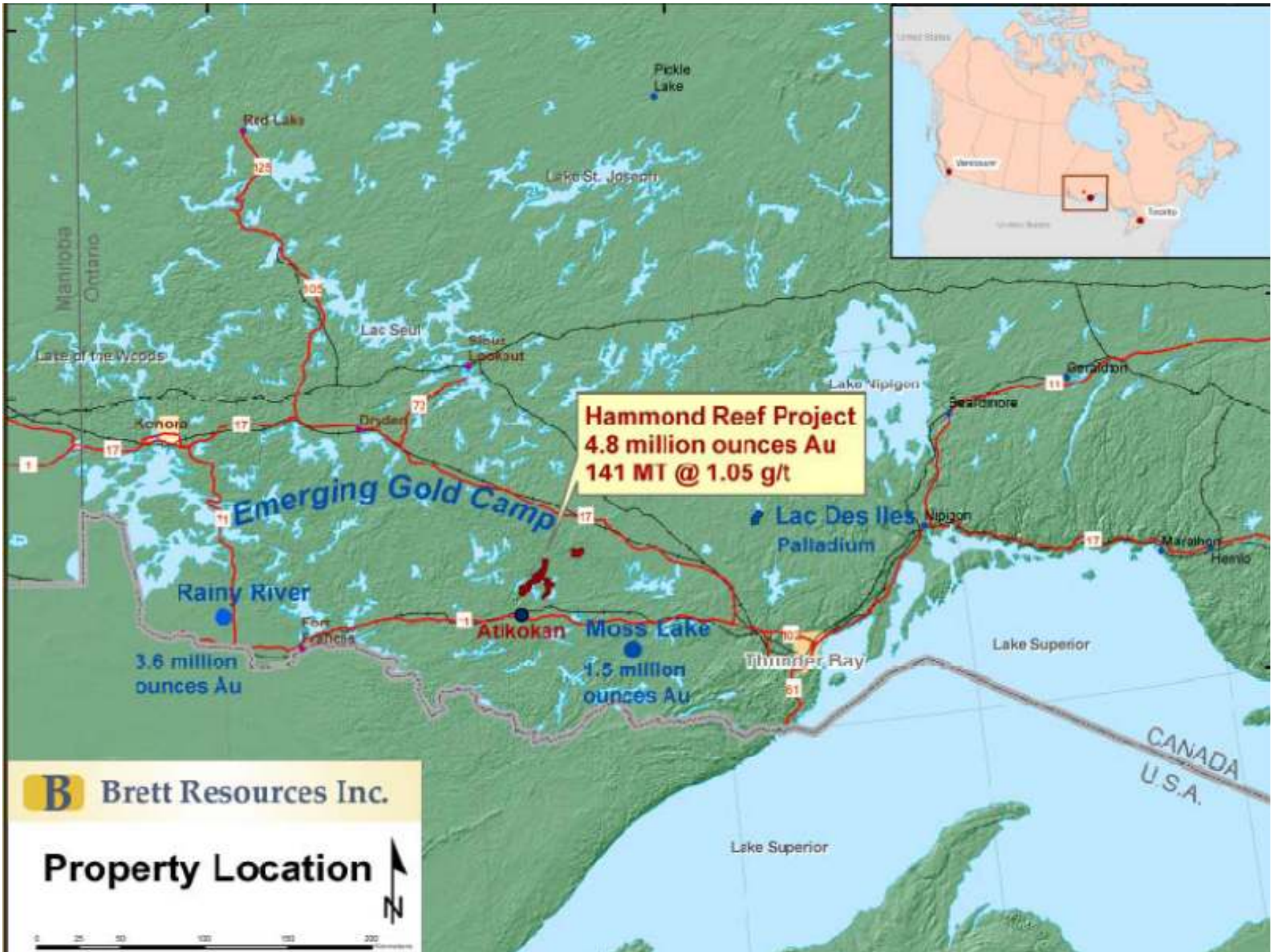
- **Outcome Analysis** – what is the dream target and the key assumptions behind it?
- **Probability Analysis** – where in the exploration cycle is the project and what is it “worth” now?
- **Risk-Reward Analysis** – is it a good, fair, or poor bet?

Outcome Analysis – Step 1

Outcome Analysis Questions

Visualizing the Fundamentals

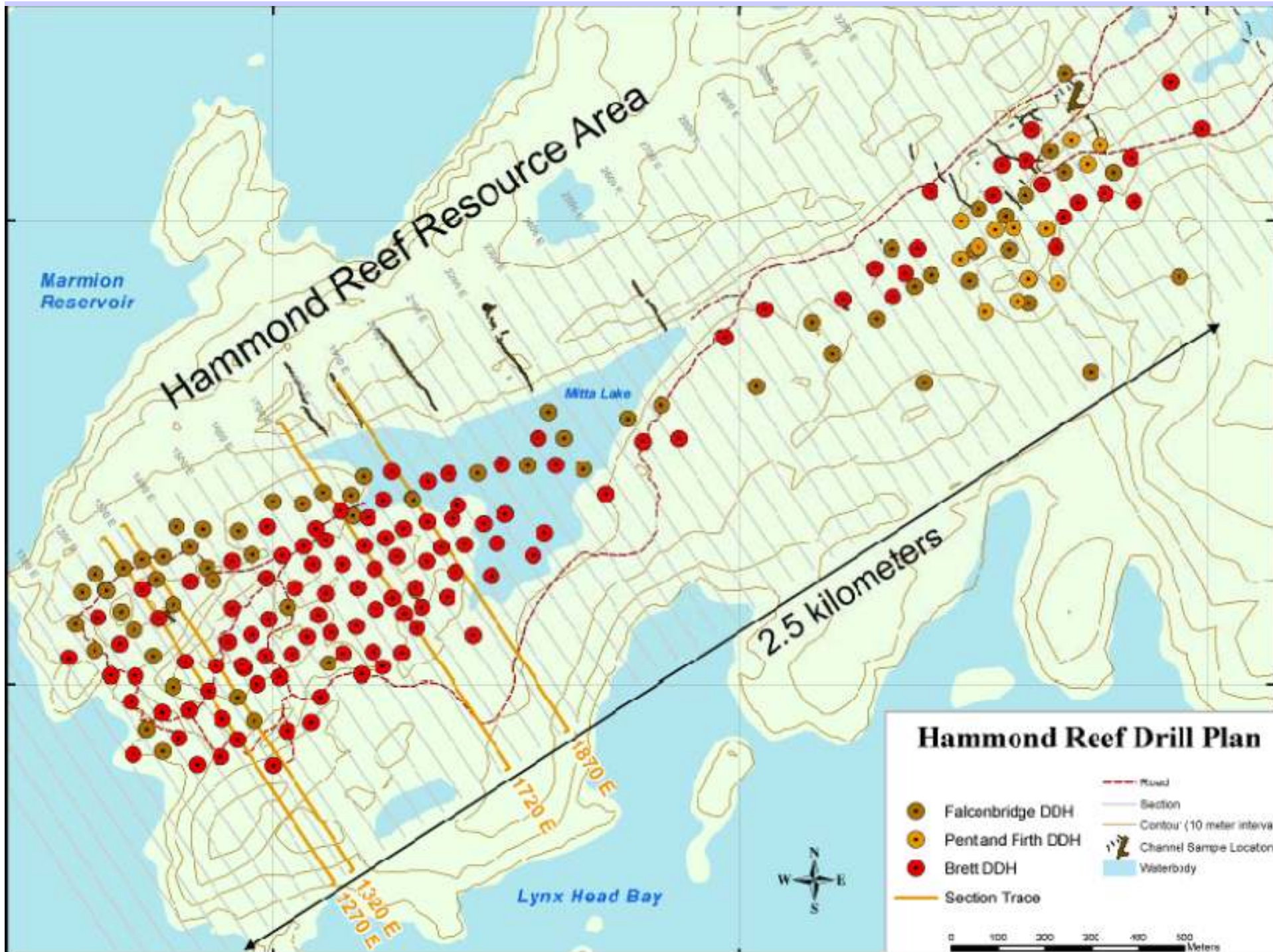
- What kind of deposit style is it?
- Can you name a deposit similar to your target?
- What is the analogue worth?
- What is the physical footprint of your target?
- How many tonnes does that represent?
- What grade are you looking for?
- Are there metallurgical issues that affect recoveries or costs?
- What are your long term metal price assumptions?
- What is the rock value at these grades and prices?
- What would the in situ value be?
- Where is the project located?
- Are there infrastructure issues such as transportation, water supply and power?
- What is such a deposit worth in DCF and comparable market valuation terms?



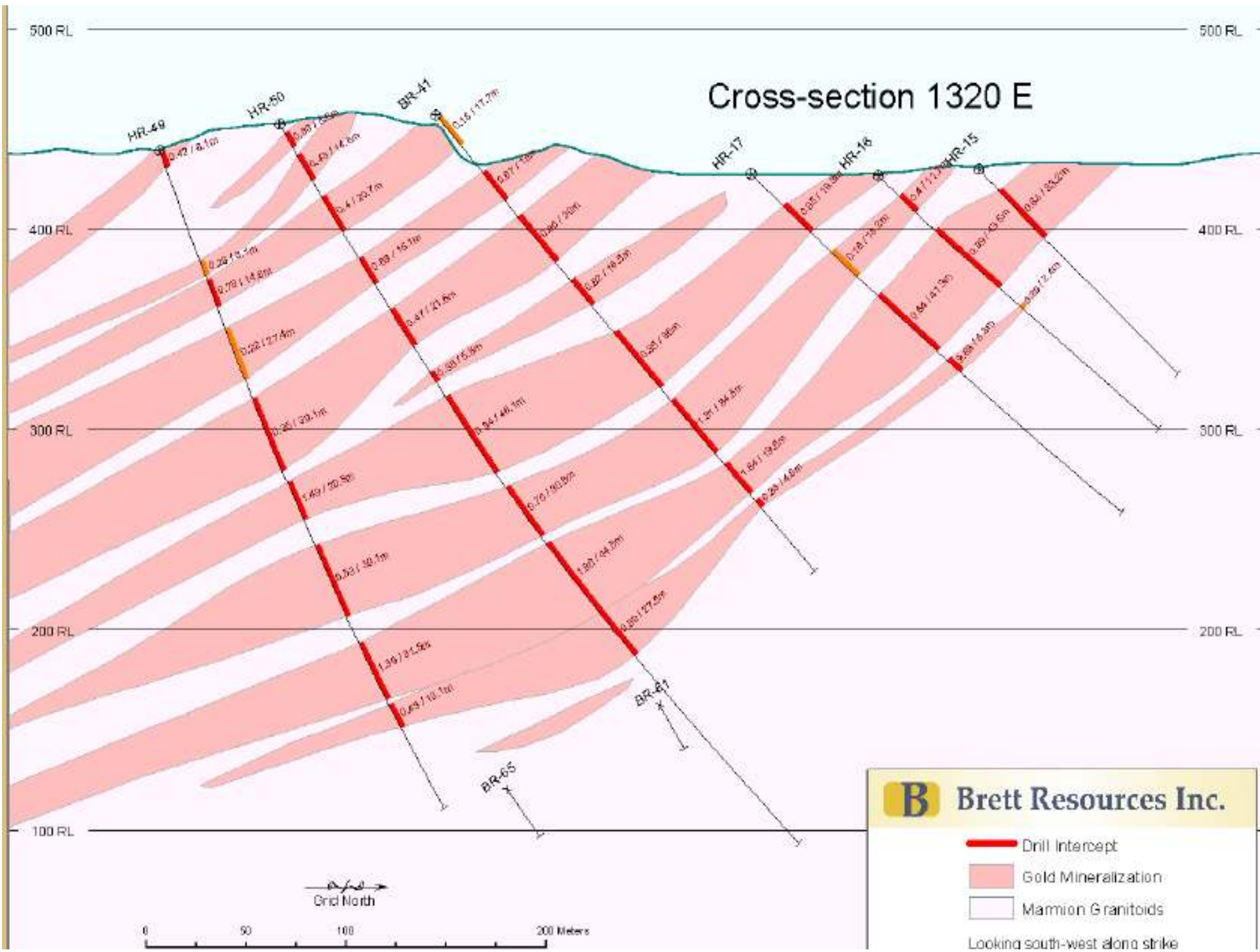
B Brett Resources Inc.

Property Location





Cross-section 1320 E



B Brett Resources Inc.

- Drill Intercept
- Gold Mineralization
- Marmion Granitoids

Looking south-west along strike

The footprint: is there room for your dream target?

- **do you have targets or just the right geology?**
- **what all defines your target: surface geology, geochemical anomaly, geophysical anomaly, drill defined mineralized zones, or structural geology?**
- **what are the tonnage implications of your targets?**
- **what are the grade implications?**

What would the dream target look like?

Orebody Arithmetic

- Figure out geometry of the target or zone – simplify into rectangular blocks
- Calculate rock volume for each “zone” (in metres): Volume of rock = length x width x thickness
- Calculate tonnage = volume x specific gravity (2.6 for ordinary rock, 4.5 for massive sulphides)
- Assign grade for recoverable metals (g/t or %)
- Calculate rock value = metal price x grade
- Deposit’s gross value = tonnage x rock value

Tonnage Potential: Length x Width x Depth x Specific Gravity

What is a deposit worth?

- In situ gross metal value (GMV) – the rock value of all recoverable metals x tonnage
- Recoverable gross metal value – the rock value adjusted for recoveries using conventional metallurgical processes
- Total Cash Flow Value - usually a lot less than the gross value after deducting operating costs
- Real Value - the net present value using the discounted cash flow model

Hammond Reef: 141,500,000 tonnes @ 1.05 g/t

Rock Value at \$937/oz gold: \$32/t

In situ GMV: $141,500,000 \times \$32 = \4.5 billion

What is an orebody worth?

Discounted Cash Flow Model

$$\sum_{n=1}^m \frac{\text{Annual Cash Flow}}{(1 + \text{Discount Rate})^n}$$

Less Capital Cost

n = year of cash

m = mine life (years of mining)

NPV

NPV(rate,value1,value2,...)

Returns the net present value of an investment based on a discount rate and a series of future payments (negative values) and income (positive values).

What are the key inputs for mining cash flow?

Revenue Inputs

Tonnage

Grade

Recovery

Commodity Price

Production Rate

Cost Inputs

Operating Cost

Taxes

Capital Cost

Annual Gross Revenue

less Operating Costs

= Operating Profit

less Taxes

= After Tax Cash Flow

Outcome Analysis – Step 1

Quickie Net Present Value Calculation

Simplified discounted cash flow model

Gross Revenue (Annual for 10 yr Mine)

less Operating Costs

Operating Profit

less Taxes

= After Tax Cash Flow (ATCF)

Present Value = ATCF times Discount Rate Multiplier

(Multiplier: 4 for 20%, 6 for 10%, or 8 for 5% discount rate)

Net Present Value = Present Value less Capital Cost

More Outcome Analysis Questions

- Who operates the project, for how long, and what is their agenda if it is not you?
- When are you vested and what ownership related deadlines apply?
- How are you funding the exploration cycle?
- What is the timeline for your exploration cycle?
- Are there any title issues?
- Are there any geopolitical risk issues?
- Are there any local or aboriginal issues?
- Are there environmental risk issues?
- Are there any specific permitting obstacles?
- What is being done about any of these obstacles?

Increase the DCF discount rate to adjust the dream target value downwards for extra risks!

Outcome Analysis – Step 1

Use reasonable input guesses to narrow the dream target to one of the following:

aka Ultimate Project Value (UPV)

- **\$100 million**
- **\$500 million**
- **\$2 billion**

Bottom-line Question: what “game” applies to your play?

Probability Analysis Questions

- What is your fully diluted?
- What is your stock price?
- What exploration stage is it at?
- What are the intrinsic odds of delivering the dream target as a mine?
- What is your net project interest?
- What does the market say your play is worth right now (the “Implied Project Value”)?

Calculate Play's IPV: $FD \times Price / \text{net interest}$

How is the market pricing a project?

Brett's Hammond Reef Project

Calculating Implied Project Value

= Fully Diluted Shares X Market Price

Net Project Interest

= (74,316,022 x \$0.70)/1.0

= \$52,021,000

Probability Analysis – Step 2

What would Brett's stock price be if it achieved the various dream targets without suffering significant additional stock dilution?

\$100 million = \$1.35

\$500 million = \$6.73

\$2 billion = \$26.91

Probability Analysis – Step 2

How do we get to a mine?

Stage	Exploration Cycle Stage	Objective	Time Required
1	Grassroots	Conceptual, land acquisition	1 year
2	Target Generation & Drilling	Filtering for drill targets	1-2 years
3	Discovery Delineation	Defining the limits of a discovery - tonnage & grade	1-2 years
4	Infill Drilling	Producing a mineral resource estimate & scoping study	1-2 years
5	Bulk Sample & Metallurgy	Evaluating recoveries and optimal processing method	1 year
6	Prefeasibility	Produce a mineable reserve, establish a mining plan and associated costs	1-2 years
7	Feasibility & Permitting	Securing regulatory approval and a production decision	1-3 years
8	Construction	Building the mine	1-3 years
9	Production	Mining cash flow	10-20 years

Probability Analysis – Step 2

The Exploration Cycle as a Risk Reduction and Outcome Visualization Process

	Exploration Cycle Stages	Probability Ladder		
		Chance	Leverage	Odds
1	Grassroots	0.5-1%	100-200	99-199:1
2	Target Drilling	1-2.5%	40-100	39-99:1
3	Delineation Drilling	2.5-5%	20-40	19-39:1
4	In-fill Drilling	5-10%	10-20	9-19:1
5	Bulk Sample & Metallurgy	10-25%	4-10	3-9:1
6	Prefeasibility	25-50%	2-4	1-3:1
7	Permitting-Feasibility	50-75%	1.3-3	0.3-1:1
8	Construction	75-100%	1	0-0.3:1
9	Production	100%		

What is the probability of making it from the current stage to a mine?

Step 3 – Risk-Reward Analysis

- **Determine appropriate dream target**
- **Calculate Implied Project Value**
- **Assign exploration stage**
- **Plot onto IPV Chart**
- **See which probability ladder applies**
- **Review the target outcome from step 1**
- **Assess speculative value**
- **Note information flow timeline**

Reviewing a Basic Gambling Concept

The probability of an anticipated outcome should match the payout delivered when the outcome is achieved.

- Fair Bet – 10:1 odds, pays 10:1
- Poor Bet – 10:1 odds, pays 5:1
- Good Bet – 5:1 odds, pays 10:1

Definition of Speculative Value:

The degree that the return achieved through actualization of an anticipated but uncertain outcome matches or deviates from the intrinsic odds of achieving that outcome.

- **Fair Bet – 10:1 odds, pays 10:1**
- **Poor Bet – 10:1 odds, pays 5:1**
- **Good Bet – 5:1 odds, pays 10:1**

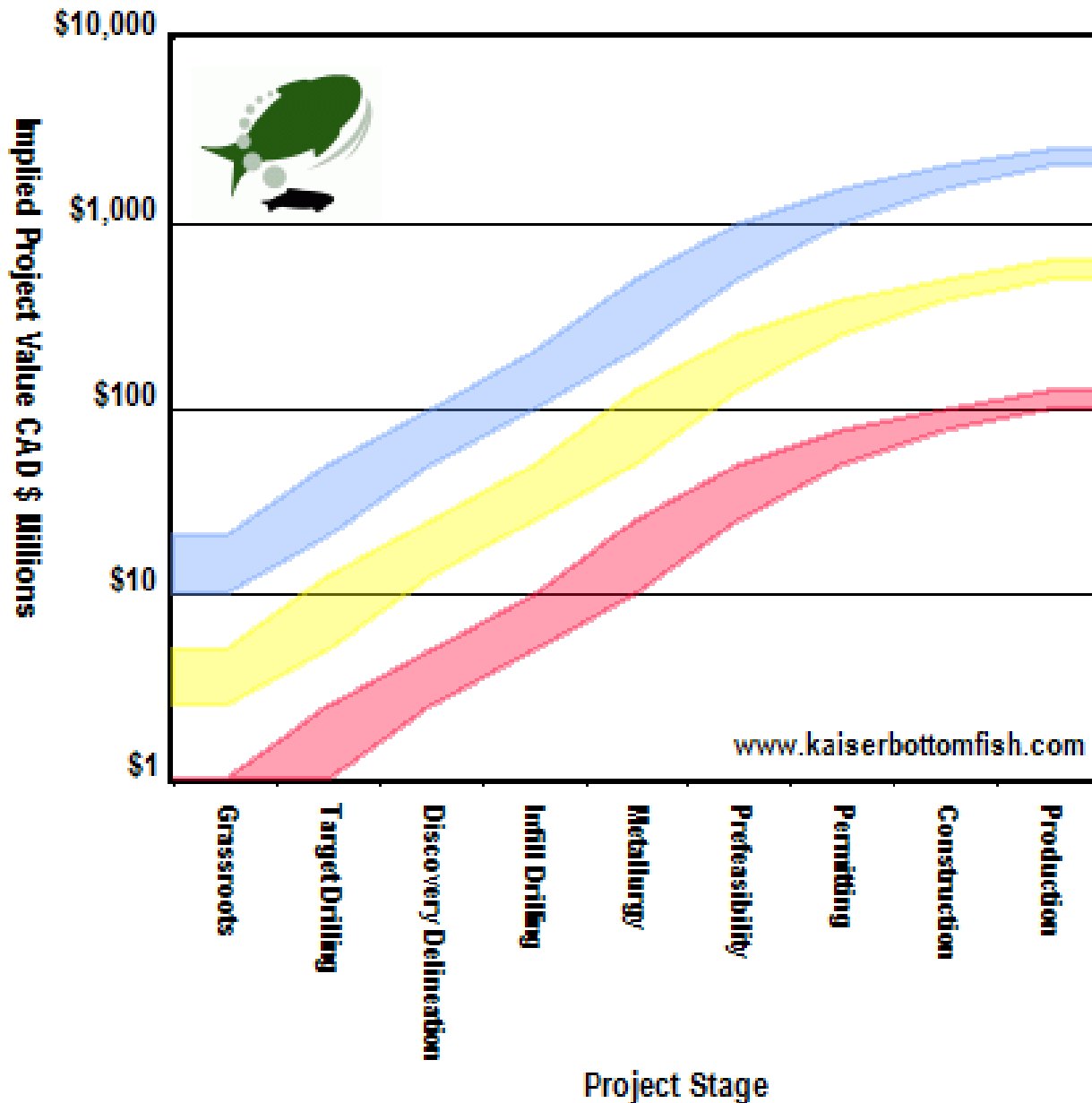
Risk-Reward Analysis – Step 3

Rational Speculation Model - Probability Ladder for Metal Projects						
Exploration Cycle Stages		Success Probability		Dream Target Fair Value Channels (\$ Millions)		
		Chance	Leverage	\$100	\$500	\$2,000
1	Grassroots	0.5-1%	100-200	<\$1	\$2.5-5	\$10-20
2	Target Drilling	1-2.5%	40-100	\$1-2.5	\$5-12.5	\$20-50
3	Discovery Delineation	2.5-5%	20-40	\$2.5-5	\$12.5-25	\$50-100
4	Infill Drilling	5-10%	10-20	\$5-10	\$25-50	\$100-200
5	Metallurgy/PEA	10-25%	4-10	\$10-25	\$50-125	\$200-500
6	Prefeasibility	25-50%	2-4	\$25-50	\$125-250	\$500-1,000
7	Permitting & Feasibility	50-75%	1.3-2	\$50-75	\$250-375	\$1,000-1,500
8	Construction	75-100%	1	\$75-100	\$375-500	\$1,500-2,000
9	Production	100%		\$100	\$500	\$2,000

Note: the fair value range in each exploration stage row for each dream target column is calculated by multiplying the dream target value by the success chance. ie stage 4 dream target \$500: 0.05 x \$500 = \$25, 0.1 x \$500 = \$50

Mineral Exploration Cycle

Wednesday, June 17, 2009



Dream Target Channels

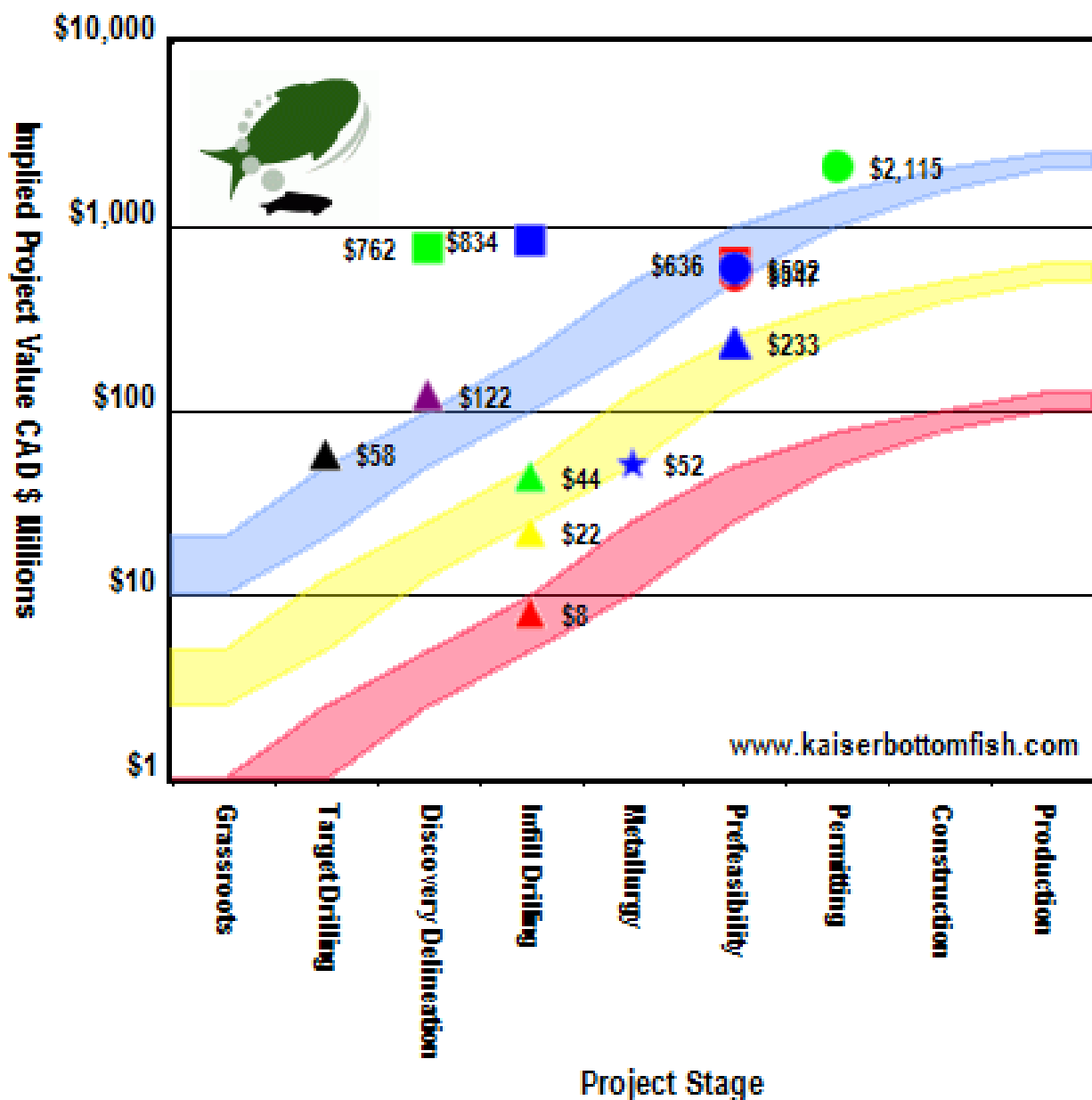
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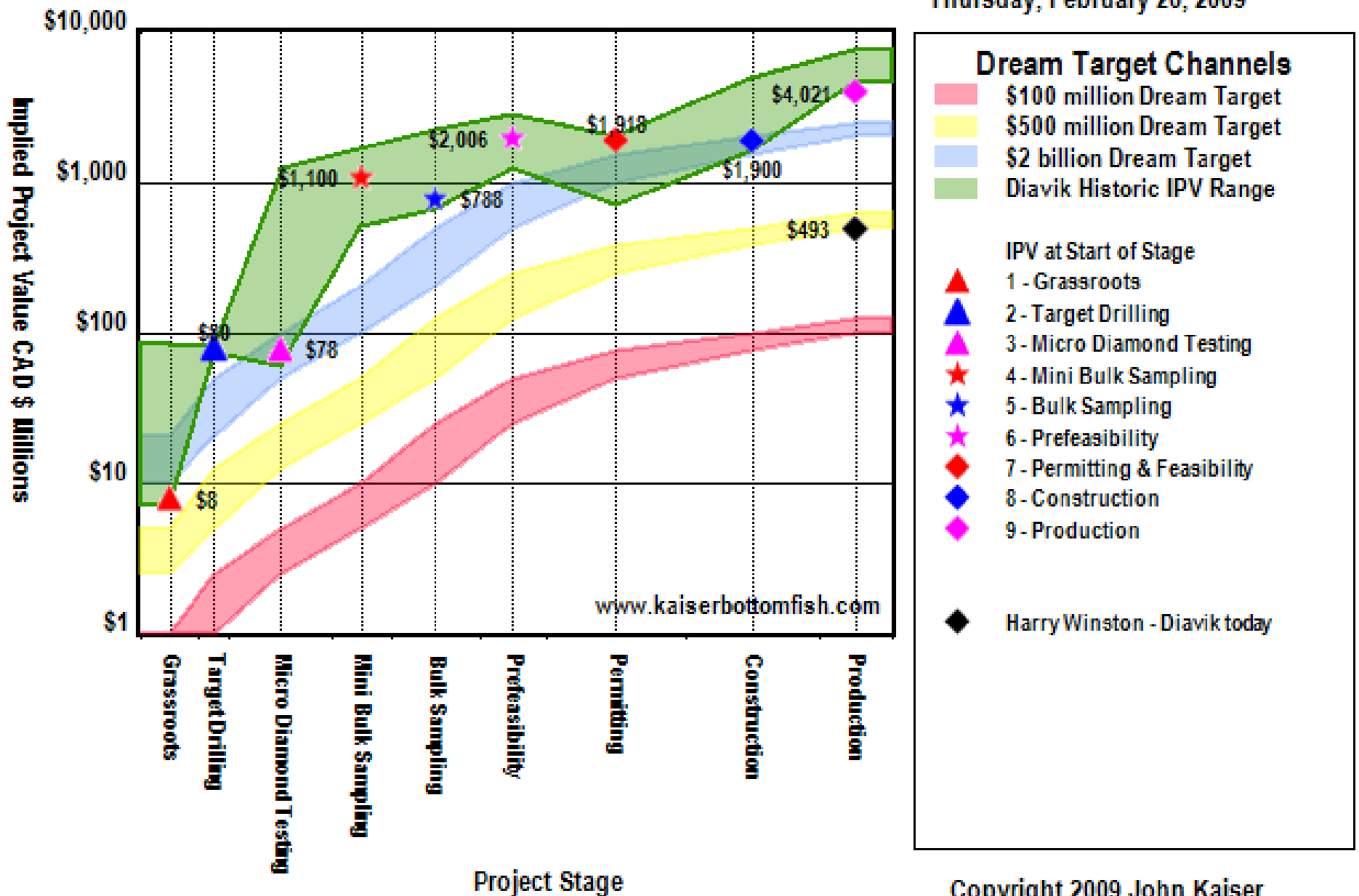
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When key exploration results are released the market asks 3 questions:

- **What do the results do to the scale and value of the dream target?**
- **Is the play ready to move to the next exploration cycle stage and its lower failure odds?**
- **What is the new fair speculative value of the project?**

Diavik Exploration Cycle (Time Bound)

Thursday, February 26, 2009



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Limitations & Issues with the Rational Speculation Model

- Assumes that only one project in a junior's exploration portfolio will become a mine
- Does not work when a junior has multiple advanced projects (infill drilling and beyond)
- Does not distinguish between working, partly carried and fully carried interests (ie IPV grows through equity or project dilution)
- It is not a decision-making blackbox – it is a decision making framework that relies heavily on fundamental analysis of the geological and economic nature of a project
- When a sector attains bubble characteristics, the model may signal poor speculative value for all plays; however, it is then useful for identifying relative speculative value for comparables

Profit Making Exit Strategies

- **Cash Takeover by Major – Absolute Liquidity**
- **Paper Takeover by Intermediate – Absolute Liquidity**
- **Merger among Equals – Partial Liquidity**
- **Equity Stake Purchase by Major – Partial Liquidity**
- **Repricing through graduation to next exploration stage – Minor Liquidity**
- **Repricing through exploration driven expansion of dream target value – Minor Liquidity**
- **Repricing through upwards adjustment of consensus outlook for long term metal prices – Minor Liquidity**
- **Repricing through bigger market profile – Minor Liquidity**
- **Repricing through adjustment to comparables – Minor Liquidity**

Thank You

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